

## Passive Components

Resistors



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## CHIP RESISTORS



### RC/RGC Series

**Resistance Range:** 1R0 to 10M  
**Rated Power @ 70°C:**  
 1/16W to 1W  
**Temp. Coefficient:**  
 ±100 to ±200ppm/°C  
**Resistance Tolerance:** ±1%, ±5%  
**Max. Working Voltage:**  
 25Vdc to 200Vdc  
**Max. Overload Voltage:** 50Vdc to 400Vdc  
**Case Sizes:** 0402, 0603, 0805, 1206, 1210, 2010, 2512



### RL Series

**Resistance Range:** R010 to 1R0  
**Rated Power @ 70°C:**  
 1/8W to 1W  
**Temp. Coefficient:**  
 ±600ppm/°C  
**Resistance Tolerance:**  
 ±1%, ±2%, ±5%  
**Case Sizes:** 0603, 0805, 1210, 2010, 2512  
**Low Values for Current Sensing Applications**



### RT Series

**Resistance Range:** 1R0 to 10M  
**Rated Power @ 70°C:**  
 1/16W to 1/8W  
**Temp. Coefficient:**  
 ±25 to ±100ppm/°C  
**Resistance Tolerance:** ±0,1%, 0,5%  
**Max. Working Voltage:**  
 50Vdc to 100Vdc  
**Max. Overload Voltage:** 100Vdc to 200Vdc  
**Case Sizes:** 0603, 0805, 1206,



### RJ Series

**Resistance Range:** 1R0 to 10M  
**Rated Power @ 70°C:**  
 1/16W to 1/8W  
**Temp. Coefficient:**  
 ±50ppm/°C  
**Resistance Tolerance:** ±1%,  
**Max. Working Voltage:**  
 50Vdc to 100Vdc  
**Max. Overload Voltage:** 100Vdc to 200Vdc  
**Case Sizes:** 0603, 0805, 1206,

## RESISTOR NETWORKS



### TC16 Series

**Concave 1206**  
**Resistance Range :** 10R to 1M0  
**Number of Resistors:** 4  
**Rated Power Per Element:** 1/16W  
**Temp. Coefficient:** ±200ppm/°C  
**Resistance Tolerance:** ±5%  
**Max. Working Voltage:**  
 50Vdc to 100Vdc  
**Circuit Types:** Isolated



### YC12 Series

**Convex 0804**  
**Resistance Range:** 10R to 1M0  
**Number of Resistors:** 4  
**Rated Power Per Element:** 1/16W  
**Temp. Coefficient:** ±200ppm/°C  
**Resistance Tolerance:** ±5%  
**Max. Working Voltage:**  
 50Vdc  
**Circuit Types:** Isolated



### YC16 Series

**Convex 1206**  
**Resistance Range:** 10R to 1M0  
**Number of Resistors:** 4  
**Rated Power Per Element:** 1/16W  
**Temp. Coefficient:** ±200ppm/°C  
**Resistance Tolerance:** ±5%  
**Max. Working Voltage:**  
 50Vdc  
**Circuit Types:** Isolated



### YC32 Series

**Convex 2012**  
**Resistance Range:** 10R to 1M0  
**Number of Resistors:** 4  
**Rated Power Per Element:** 0,125W  
**Temp. Coefficient:** ±200ppm/°C  
**Resistance Tolerance:** ±5%  
**Max. Working Voltage:**  
 200Vdc  
**Circuit Types:** Isolated



### YC24 Series

**Convex 1604**  
**Resistance Range:** 10R to 1M0  
**Number of Resistors:** 8  
**Rated Power:** 1/16W  
**Temp. Coefficient:**  
 ±200ppm/°C  
**Resistance Tolerance:** ±5%  
**Max. Working Voltage:** 50Vdc  
**Circuit Types:** Isolated



### YC15 Series

**Convex 1206**  
**Resistance Range:** 33R to 100K  
**Number of Resistors:** 8  
**Rated Power:** 1/32W  
**Temp. Coefficient:**  
 ±200ppm/°C  
**Resistance Tolerance:** ±5%  
**Max. Working Voltage:**  
 25Vdc  
**Circuit Types:** Dual



### YC35 Series

**Convex 2512**  
**Resistance Range:** 33R to 100K  
**Number of Resistors:** 8  
**Rated Power:** 1/16W  
**Temp. Coefficient:**  
 ±200ppm/°C  
**Resistance Tolerance:** ±5%  
**Max. Working Voltage:**  
 50Vdc  
**Circuit Types:** Dual



### RN/NWL Series

**Resistance Range:** 10R to 1M0  
**Number of Resistors:**  
 4 to 14  
**Rated Power Per Element:**  
 1/8W, 1/4W  
**Temp. Coefficient:**  
 ±100/°C alebo ±250ppm/°C  
**Resistance Tolerance:** ±2%  
**Max. Working Voltage:**  
 100Vdc to 200Vdc  
**Circuit Types:** Dual Common

## LEADED RESISTORS



### CFR/DC Series

**CARBON FILM**  
**Std. & Reduced Sizes Axial Lead**  
**Resistance Range:** 10R to 1M0/OR0  
**Rated Power:** 1/16W to 2W  
**Temp. Coefficient:**  
 +350ppm to -1,000ppm/°C  
**Resistance Tolerance:** ±5%  
**Max. Working Voltage:**  
 250Vdc to 500Vdc  
**Packaging:** Tape/ Box



### CF Series

**POWER CARBON FILM**  
**Std. & Reduced Size Axial Lead**  
**Resistance Range:** 10R to 10M  
**Rated Power:** 2/5W to 3/5W  
**Temp. Coefficient:**  
 +350ppm to -1000ppm/°C  
**Resistance Tolerance:** ±5%  
**Max. Working Voltage:**  
 200Vdc to 300Vdc  
**Package:** Tape/ Box



### MFR Series

**METAL FILM**  
**Std. & Reduced Size Axial Lead**  
**Resistance Range:** 10R to 1M0  
**Rated Power:** 1/8W to 2W  
**Temp. Coefficient:**  
 ±15ppm to ±100ppm/°C  
**Resistance Tolerance:** ±0,1%,  
 ±0,25%, ±0,5%, ±1%  
**Max. Working Voltage:**  
 200Vdc to 500Vdc  
**Package:** Tape/ Box

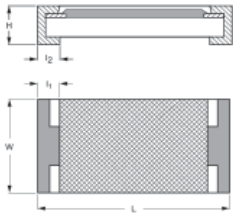


### MF/GP Series

**METAL FILM**  
**Std. & Reduced Size Axial Lead**  
**Resistance Range:** 1R0 to 10M  
**Rated Power:** 2/5W to 3/5W  
**Temp. Coefficient:**  
 ±50ppm/°C  
**Resistance Tolerance:** ±1%  
**Max. Working Voltage:**  
 200Vdc to 300Vdc  
**Package:** Tape/ Box

## Surface Mount Chip Resistors

Technical parameters	R0402	R0603	R0805	R1206
Case Size	0402	0603	0805	1206
Power Rating @ 70°C	0,063 W	0,1 W	0,125 W	0,25 W
Resistance Tolerance	1%	1%	1%	1%
Temperature Coefficient	10 Ω < R Ω < 10 M Ω ±100 ppm R Ω < 10 Ω R > 10 M Ω ±200 ppm	10 Ω < R Ω < 10 M Ω ±100 ppm R Ω < 10 Ω R > 10 M Ω ±200 ppm	10 Ω < R Ω < 10 M Ω ±100 ppm R Ω < 10 Ω R > 10 M Ω ±200 ppm	10 Ω < R Ω < 10 M Ω ±100 ppm R Ω < 10 Ω R > 10 M Ω ±200 ppm
Max. Working Voltage	50 V	50V	150 V	200 V
Insulation Voltage	100 V	100 V	300 V	500 V
Insulation Resistance	≥ 10 GΩ	>10 GΩ	>10 GΩ	>10 GΩ
Package: Tape&Reel	10000 pcs	5000 pcs	5000 pcs	5000 pcs
Manufact. Part Number	RC0402	RC0603	RC0805	RC1206
How to order	R0402 1% 2,2K	R0603 1% 2,2K	R0805 1% 2,2K	R1206 1% 2,2K



	0402	0603	0805	1206
L [mm]	1.00	1.60	2.00	3.10
W [mm]	0.50	0.80	1.25	1.60
H [mm]	0.35	0.45	0.50	0.55
l <sub>1</sub> [mm]	0.20	0.25	0.35	0.45
l <sub>2</sub> [mm]	0.25	0.25	0.35	0.40

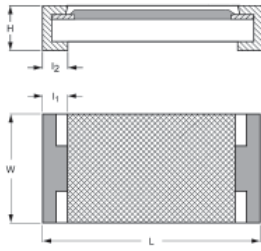
Case
R0402
R0603
R0805
R1206

Minimum ordering quantity 500pcs is intended for items which are marked by "O"

Ohmic Value	0402	0603	0805	1206
0 R	O 52681	S 39627	S 25800	S 33764
1 R	O 68541	S 49995	S 8140	S 41106
1,2 R	O 68542	O 57885	S 50221	S 50479
1,5 R	O 68543	O 57925	S 8141	S 33612
1,8 R	O 68544	O 57931	S 50243	S 33614
2,2 R	O 68546	O 57926	S 41093	S 41107
2,7 R	O 68546	O 57932	S 50222	S 33618
3,3 R	O 68547	O 57889	S 41094	S 33620
3,9 R	O 68548	O 57933	S 50223	S 33622
4,7 R	O 68549	O 57927	S 41095	S 41108
5,6 R	O 68550	O 57934	S 48276	S 41109
6,8 R	O 68551	O 57928	S 8142	S 41110
7,5 R	O 68552	S 48141	S 57954	S 43783
8,2 R	O 68553	O 57930	S 50224	S 33630
10 R	O 56450	S 48144	S 40252	S 33952
12 R	O 63470	S 49997	S 40253	S 35038
13 R	O 63473	O 49998	O 55744	S 33980
15 R	O 63476	S 49999	S 40254	S 33987
18 R	O 63484	S 50001	S 50225	S 35040
22 R	O 55333	S 50003	S 40255	S 35041
27 R	O 63500	S 48738	S 50226	S 35043
33 R	O 63512	S 50007	S 40256	S 35045
39 R	O 63518	S 50009	S 40257	S 35047
47 R	O 63526	S 44744	S 40258	S 35049
51 R	O 63530	O 50011	O 50759	S 35050
56 R	O 63533	S 57929	S 50389	S 35051
68 R	O 63542	S 50013	S 40259	S 35053
75 R	O 63546	O 50014	S 40260	S 33653
82 R	O 63550	S 48737	S 50227	S 35054
100 R	O 63464	S 44634	S 37918	S 34108
120 R	O 63471	S 48145	S 37920	S 35056
150 R	O 63478	S 50018	S 37922	S 34148
180 R	O 63486	S 50021	S 37924	S 35058
220 R	O 63495	S 49954	S 37926	S 35059
270 R	O 63502	S 50023	S 37928	S 35061
300 R	O 63510	O 50024	O 37929	S 35062
330 R	O 56451	S 50025	S 37930	S 35063
390 R	O 63520	S 50027	S 37932	S 35065
470 R	O 63527	S 44745	S 37934	S 35067
510 R	O 63532	O 50029	O 37935	S 35068
560 R	O 63535	S 48506	S 37936	S 35069
680 R	O 63543	S 49944	S 37938	S 35071
820 R	O 63552	S 50033	S 37940	S 35072
1 K	O 63456	S 44746	S 37942	S 34376
1,2 K	O 55331	S 49947	S 37944	S 35074
1,5 K	O 61103	S 50038	S 37946	S 34393
1,8 K	O 63463	S 50040	S 37948	S 35076

Ohmic Value	0402	0603	0805	1206
2,2 K	O 63488	S 44747	S 37950	S 35077
2,7 K	O 63490	S 44749	S 37952	S 35079
3,3 K	O 63504	S 50043	S 37954	S 35081
3,9 K	O 63506	S 50044	S 37956	S 35083
4,7 K	O 52337	S 44751	S 37958	S 35085
5,1 K	O 63528	O 50045	O 37959	S 35086
5,6 K	O 63529	S 50046	S 37960	S 35087
6,8 K	O 56533	S 49959	S 37962	S 35089
8,2 K	O 62810	S 49960	S 37964	S 35090
10 K	O 55328	S 44260	S 37966	S 34472
12 K	O 63469	S 49952	S 37968	S 35092
15 K	O 62806	S 44753	S 37970	S 34489
18 K	O 63483	S 49961	S 37972	S 35094
22 K	S 62812	S 44755	S 37974	S 35095
27 K	O 63499	S 42498	S 37976	S 35097
33 K	O 63511	S 49945	S 37978	S 35099
39 K	O 63517	S 44757	S 37980	S 35101
47 K	O 55330	S 50057	S 37982	S 35103
56 K	O 56453	S 50059	S 37984	S 35105
68 K	O 63541	S 50061	S 37986	S 35107
82 K	O 63549	S 42497	S 37988	S 35108
100 K	S 55326	S 44758	S 37990	S 34579
120 K	O 62807	S 50066	S 37992	S 35110
150 K	O 63477	S 50068	S 37994	S 34596
180 K	O 63485	S 48510	S 37996	S 35112
200 K	O 63493	O 48508	O 37997	S 34608
220 K	O 62808	S 50069	S 37998	S 35113
270 K	O 63501	S 50070	S 38000	S 35115
330 K	O 56452	S 49956	S 38002	S 35117
390 K	O 63519	S 50073	S 38004	S 35119
470 K	O 55329	S 50075	S 38006	S 35121
560 K	O 63534	S 50077	S 38008	S 35123
680 K	O 62809	S 49946	S 38010	S 35125
820 K	O 63551	S 50080	S 38012	S 35126
1 M	O 56454	S 49953	S 38014	S 34680
1,2 M	O 80527	O 57935	S 50233	S 50478
1,5 M	O 80528	O 57936	S 8143	S 41111
1,8 M	O 80529	O 57937	S 50234	S 41112
2,2 M	O 80530	O 57938	S 8144	S 41113
2,7 M	O 80531	O 49983	S 50229	S 41114
3,3 M	O 76399	O 53640	S 41101	S 41115
3,9 M	O 80532	O 57939	S 50230	S 41116
4,7 M	O 80533	O 51975	S 41102	S 41117
5,6 M	O 80534	O 57950	S 50235	S 33756
6,8 M	O 80535	O 57951	S 50231	S 33758
8,2 M	O 80536	O 57952	S 50232	S 33760
10 M	O 80537	O 57953	S 42740	S 41118

## Surface Mount Chip Resistors



Technical parameters	R2010	R2512
Case Size	2010	2512
Power Rating @ 70°C	0,75 W	1 W
Resistance Tolerance	5%	5%
Temperature Coefficient	10 Ω < R Ω < 10 M Ω ±100 ppm/°C	10 Ω < R Ω < 10 M Ω ±100 ppm/°C
	R Ω < 10 Ω; R > 10 M Ω ±200 ppm/°C	R Ω < 10 Ω; R > 10 M Ω ±200 ppm/°C
Max. Working Voltage	200 V	200V
Insulation Voltage	500 V	500 V
Insulation Resistance	≥ 10 GΩ	≥ 10 GΩ
Package Tape&Real	4000 pcs	4000 pcs
Manufact. Part Number	RC2010	RC2512
How to order	R2010 2,2K 5%	R2512 2,2K 5%

	2010	2512
L [mm]	5.00	6.35
W [mm]	2.50	3.10
H [mm]	0.55	0.55
l <sub>1</sub> [mm]	0.45	0.60
l <sub>2</sub> [mm]	0.50	0.50

Minimum ordering quantity 500pcs is intended for items which are marked by "O"

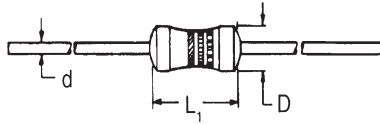
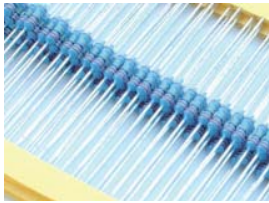
Ohmic Value	2010	2512
0 R	O 68149	O 68271
10 R	S 68159	S 68281
11 R	O 68163	O 68285
12 R	O 68167	O 68289
13 R	O 68171	O 68293
15 R	O 68175	O 68297
16 R	O 68179	O 68301
18 R	O 68183	O 68305
20 R	O 68191	O 68313
22 R	S 68195	S 68317
24 R	O 68199	O 68321
27 R	O 68203	O 68325
30 R	O 68211	O 68333
33 R	O 68215	O 68337
36 R	O 68219	O 68341
39 R	O 68223	O 68345
43 R	O 68229	O 68351
47 R	S 68233	S 68355
51 R	O 68239	O 68361
56 R	O 68243	O 68365
62 R	O 68249	O 68370
68 R	O 68253	O 68374
75 R	O 68258	O 68379
82 R	O 68263	O 68384
91 R	O 68268	O 68389
100 R	S 68161	S 68283
110 R	O 68165	O 68287
120 R	O 68169	O 68291
130 R	O 68173	O 68295
150 R	O 68177	O 68299
160 R	O 68181	O 68303
180 R	O 68185	O 68307
200 R	O 68193	O 68315
220 R	S 68197	S 68319
240 R	O 68201	O 68323
270 R	O 68205	O 68327
300 R	O 68213	O 68335
330 R	O 68217	O 68339
360 R	O 68221	O 68343
390 R	O 68225	O 68347
430 R	O 68231	O 68353

Ohmic Value	2010	2512
470 R	S 68235	S 68357
510 R	O 68241	O 68363
560 R	O 68245	O 68367
620 R	O 68251	O 68372
680 R	O 68255	O 68376
750 R	O 68260	O 68381
820 R	O 68265	O 68386
910 R	O 68270	O 68391
1 K	S 68150	S 68272
1,1 K	O 68152	O 68717
1,2 K	O 68153	O 68275
1,3 K	O 68154	O 68276
1,5 K	O 68155	O 68277
1,6 K	O 68156	O 68278
1,8 K	O 68157	O 68279
2 K	O 68186	O 68308
2,2 K	S 68187	S 68309
2,4 K	O 68188	O 68310
2,7 K	O 68189	O 68311
3 K	O 68206	O 68328
3,3 K	O 68207	O 68329
3,6 K	O 68208	O 68330
3,9 K	O 68209	O 68331
4,3 K	O 68226	O 68348
4,7 K	S 68227	S 68349
5,1 K	O 68236	O 68358
5,6 K	O 68237	O 68359
6,2 K	O 68246	O 68718
6,8 K	O 68247	O 68368
7,5 K	O 68256	O 68377
8,2 K	O 68261	O 68382
9,1 K	O 68266	O 68387
10 K	S 68158	S 68280
11 K	O 68162	O 68284
12 K	O 68166	O 68288
13 K	O 68170	O 68292
15 K	O 68174	O 68296
16 K	O 68178	O 68300
18 K	O 68182	O 68304
20 K	O 68190	O 68312
22 K	S 68194	S 68316

Ohmic Value	2010	2512
24 K	O 68198	O 68320
27 K	O 68202	O 68324
30 K	O 68210	O 68332
33 K	O 68214	O 68336
36 K	O 68218	O 68340
39 K	O 68222	O 68344
43 K	O 68228	O 68350
47 K	S 68232	S 68354
51 K	O 68238	O 68360
56 K	O 68242	O 68364
62 K	O 68248	O 68369
68 K	O 68252	O 68373
75 K	O 68257	O 68378
82 K	O 68262	O 68383
91 K	O 68267	O 68388
100 K	S 68160	S 68282
110 K	O 68164	O 68286
120 K	O 68168	O 68290
130 K	O 68172	O 68294
150 K	O 68176	O 68298
160 K	O 68180	O 68302
180 K	O 68184	O 68306
200 K	O 68192	O 68314
220 K	S 68196	S 68318
240 K	O 68200	O 68322
270 K	O 68204	O 68326
300 K	O 68212	O 68334
330 K	O 68216	O 68338
360 K	O 68220	O 68342
390 K	O 68224	O 68346
430 K	O 68230	O 68352
470 K	S 68234	S 68356
510 K	O 68240	O 68362
560 K	O 68244	O 68366
620 K	O 68250	O 68371
680 K	O 68254	O 68375
750 K	O 68259	O 68380
820 K	O 68264	O 68385
910 K	O 68269	O 68390
1 M	O 68151	O 68273

## Metal Film Resistors

YAGEO



	0207	0204
L <sub>1</sub> [mm]	6,3 ±0,3	3,4 ±0,3
D [mm]	2,4 ±0,2	1,9 ±0,2
d [mm]	0,6 ±0,05	0,5 ±0,05

Technical parameters:	RM	RMM
Case Size	0207	0204
Power Rating at 70°C	0,6W	0,4W
Resistance Tolerance	1%(<1R:5%)	1%(<1R:5%)
Temperature Coefficient	50ppm	50ppm
Max. Working Voltage	300 V	200 V
Insulation Voltage	500 V	500 V
Insulation Resistance	> 10GΩ	> 10GΩ
Marking	IEC colour code-5bands	
Package	bandoliered on tape: 5000 pcs	
Manufact. Part Number	MF0207	MF0204
How to order	RM 1% 2,2K	RMM 1% 2,2K

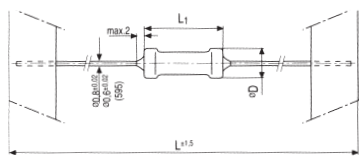
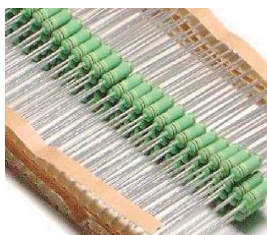
Minimum ordering quantity 500pcs is intended for items which are marked by "O"

Ohmic Value	RM	RMM
0 R	S 20004	
0,22 R	S 22954	
0,33 R	S 22958	
0,47 R	S 22962	
1 R	S 30615	O 57955
1,2 R	S 30617	O 57956
1,5 R	S 30619	O 57957
1,8 R	S 30621	O 57960
2,2 R	S 30623	O 57961
2,7 R	S 30625	O 57962
3,3 R	S 30627	O 57963
3,9 R	S 30629	O 57964
4,7 R	S 30631	O 57965
5,6 R	S 30633	O 26818
6,8 R	S 30635	O 26820
8,2 R	S 30637	S 26822
10 R	S 30639	S 26236
12 R	S 30647	O 26238
13 R	O 30651	O 26239
15 R	S 30657	S 26240
16 R	O 30660	O 26241
18 R	S 30666	O 26242
20 R	S 30671	O 26243
22 R	S 30675	S 26244
24 R	S 30680	O 26245
27 R	S 30686	O 26246
33 R	S 30696	S 26248
39 R	S 30705	O 26250
47 R	S 30715	S 26252
51 R	S 30719	O 26253
56 R	S 30724	S 26254
62 R	S 30730	O 26255
68 R	S 30734	S 26256
75 R	S 30739	O 26257
82 R	S 30743	S 26258
91 R	S 30749	O 26259
100 R	S 30753	S 26260
110 R	S 30757	O 26261
120 R	S 30761	S 26262
130 R	S 30765	O 26263
150 R	S 30771	S 26264
160 R	S 30774	O 26265
180 R	S 30780	S 26266
200 R	S 30785	O 26267
220 R	S 30789	S 26268

Ohmic Value	RM	RMM
240 R	S 30794	O 26269
270 R	S 30800	S 26270
300 R	S 30805	O 26271
330 R	S 30810	S 26272
360 R	S 30815	O 26273
390 R	S 30819	S 26274
430 R	S 30824	O 26275
470 R	S 30829	S 26276
499 R	S 30832	O 68555
510 R	S 30833	O 26277
560 R	S 30838	S 26278
620 R	S 30844	O 26279
680 R	S 30848	S 26280
750 R	S 30853	O 26281
820 R	S 30857	S 26282
910 R	S 30863	O 26283
1 K	S 30867	S 26284
1,1 K	S 30871	O 26285
1,2 K	S 30875	S 26286
1,3 K	S 30879	O 26287
1,5 K	S 30885	S 26288
1,6 K	S 30888	O 26289
1,8 K	S 30894	S 26290
2 K	S 30899	O 26291
2,2 K	S 30903	S 26292
2,4 K	S 30908	O 26293
2,7 K	S 30914	S 26294
3 K	S 30919	O 26295
3,3 K	S 30924	S 26296
3,6 K	S 30929	O 26297
3,9 K	S 30933	S 26298
4,3 K	S 30938	O 26299
4,7 K	S 30943	S 26300
5,1 K	S 30947	O 26301
5,6 K	S 30952	S 26302
6,2 K	S 30958	O 26356
6,8 K	S 30962	S 26303
7,5 K	S 30967	O 26304
8,2 K	S 30971	S 26305
9,1 K	S 30977	O 26306
10 K	S 30981	S 26307
11 K	S 30985	O 26308
12 K	S 30989	S 26309
13 K	S 30993	O 26310
15 K	S 30999	S 26311

Ohmic Value	RM	RMM
22 K	S 31017	S 26315
24 K	S 31022	O 26316
27 K	S 31028	S 26317
30 K	S 31033	O 26318
33 K	S 31038	S 26319
36 K	S 31043	O 26320
39 K	S 31047	S 26321
43 K	S 31052	O 26322
47 K	S 31057	S 26323
51 K	S 31061	O 26324
56 K	S 31066	S 26325
62 K	S 31072	O 26326
68 K	S 31076	S 26327
75 K	S 31081	O 26328
82 K	S 31085	S 26329
91 K	S 31091	O 26330
100 K	S 31095	S 26331
110 K	S 31099	O 26332
120 K	S 31103	S 26333
150 K	S 31113	S 26335
180 K	S 31122	O 26337
200 K	S 31127	O 26338
220 K	S 31131	S 26339
270 K	S 31142	O 26341
330 K	S 31152	S 26343
390 K	S 31161	O 26345
470 K	S 31171	S 26347
560 K	S 31180	O 26349
680 K	S 31190	S 26351
750 K	S 31195	O 26352
820 K	S 31199	O 26353
910 K	S 31205	O 26354
1 M	S 31209	S 26355
1,2 M	S 31211	
1,5 M	S 31213	
1,8 M	S 31215	
2,2 M	S 31217	
2,7 M	S 31219	
3,3 M	S 31221	
3,9 M	S 31223	
4,7 M	S 31225	
5,6 M	S 31227	
6,8 M	S 31229	
8,2 M	S 31231	
10 M	S 31233	

## Power Metaloxide Film Resistors



	595-0	593-0	590-0
L <sub>1</sub> [mm]	6,3-1	12-1,5	16,5-1,5
D [mm]	2,5-0,5	4,1-0,5	6,0-0,5
L±1.5 [mm]	65	85	95

Technical Parameters	595-0	593-0	590-0
Case Size	0207	0414	0617
Power Rating at 70°C	1W	2W	3W
Resistance Tolerance	5%	5%	5%
Temperature Coefficient	200 ppm	200 ppm	2000 ppm
Max. Working Voltage	500 V	500 V	750 V
Insulation Voltage	500 V	500 V	500 V
Insulation Resistance	> 1GΩ	> 1GΩ	> 1GΩ
Thermal Resistance	< 140K/W	< 130K/W	< 70K/W
Marking	595/593: DIN-IEC-colour code, 4/5 bands 590: printed in clear		
Package:	2000 pcs	1000 pcs	1000 pcs
Manufact. Part Number	PO595-0	PO593-0	PO590-0
How to order	595-0 1R 5%	593-0 1R 5%	590-0 1R 5%

Minimum ordering quantity 10pcs is intended for items which are marked by "O"

Ohmic Value	595-0	593-0	590-0
1R	S 27809	S 21008	S 19593
1,2 R	S 27811	S 21009	O 19594
1,5 R	O 27813	S 21010	S 19595
2,2 R	S 27817	S 21012	S 19597
2,7 R	S 27819	S 21013	O 19598
3,3 R	S 27821	S 21014	S 19599
3,9 R	O 27823	S 21015	O 19600
4,7 R	S 27825	S 21016	S 19601
5,6 R	O 27827	S 21017	O 19602
6,8 R	S 27829	S 21018	S 19603
8,2 R	O 27831	S 21019	O 19604
10 R	S 27833	S 21020	S 19605
12 R	S 27835	S 21021	S 19606
15 R	S 27837	S 21022	S 19607
18 R	O 27839	S 21023	O 19608
22 R	S 27841	S 21024	S 19609
27 R	S 27843	S 21025	O 19610
33 R	S 27845	S 21026	S 19611
39 R	S 27847	S 21027	S 19612
47 R	S 27849	S 21028	S 19613
56 R	O 27851	S 21029	O 19614
68 R	S 27853	S 21030	S 19615
82 R	O 27855	S 21031	O 19616
100 R	S 27857	S 21032	S 19617
120 R	S 27859	S 21033	S 19618
150 R	S 27861	S 21034	S 19619
180 R	S 27863	S 21035	O 19620
220 R	S 27865	S 21036	S 19621
270 R	O 27867	S 21037	O 19622
330 R	S 27869	S 21038	S 19623
390 R	O 27871	S 21039	O 19624
470 R	S 27873	S 21040	S 19625
560 R	S 27875	S 21041	S 19626

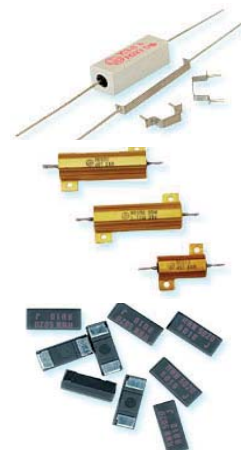
Ohmic Value	595-0	593-0	590-0
680 R	S 27877	S 21042	S 19627
820 R	S 27879	S 21043	O 19628
1 K	S 27881	S 21044	S 19629
1,2 K	S 27883	S 21045	O 19630
1,5 K	S 27885	S 21046	S 19631
1,8 K	O 27887	S 21047	O 19632
2,2 K	S 27889	S 21048	S 19633
2,7 K	O 27891	S 21049	O 19634
3,3 K	S 27893	S 21050	O 19635
3,9 K	O 27894	S 21051	O 19636
4,7 K	S 27896	S 21052	S 19637
5,6 K	O 27898	S 21053	O 19638
6,8 K	S 27900	S 21054	S 19639
8,2 K	O 27902	S 21055	O 19640
10 K	S 27904	S 21056	S 19641
12 K	S 27906	S 21057	O 19642
15 K	S 27908	S 21058	O 19643
18 K	S 27910	S 21059	O 19644
22 K	S 27912	S 21060	O 19645
33 K	S 27916	S 21062	O 19647
39 K	S 27918	S 21063	S 19648
47 K	S 27920	S 21064	O 19649
56 K	O 27922	S 21065	O 19650
68 K	S 27924	S 21066	O 19651
100 K	S 27928	S 21068	S 19653
120 K	O 27930	S 21069	O 19654
150 K	O 27932	S 21070	S 19655
180 K	O 27934	S 21071	O 19656
220 K	S 27936	S 21072	O 19657
270 K	S 27938	O 21073	O 19658
470 K	S 27944	S 21076	O 19661
1 M	S 27952	S 21080	
10 M		21092	



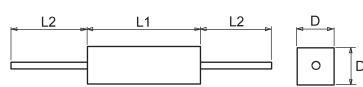
# VITROHM

OUR PRODUCTS FOR YOUR SUCCESS

- Wirewound Resistors, coated
- Wirewound Resistors, ceramic case
- Wirewound Resistors, moulded, insulated
- SMD Resistors
- Low Ohm Resistors
- Metalglaze / Metaloxide Metalfilm Resistors
- Wirewound Resistors, aluminium-cased



## Wire Wound Resistors



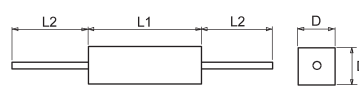
	208-8	214-8
L1 [mm]	25,0	38,0
L2 [mm]	36,0	35,0
D [mm]	6,4	9,0

Technical parameters	208-8	214-8
Power Rating @ 70°C	5W	9W
Resistance Tolerance	10%	10%
Temperature Coefficient	< 400ppm	400ppm
Max. Working Voltage	$\sqrt{5R}$	$\sqrt{5R}$
Insulation Voltage	2000V	2000V
Insulation Resistance	> 10 GΩ	> 10 GΩ
Thermal Resistance	< 50 KW <sup>-1</sup>	< 30 KW <sup>-1</sup>
Marking	printed in clear	
Manufact. Part Number	KH208-8	KH214-8
How to order	208-8 1R 10%	214-8 1R 10%

Ohmic Value	208-8	214-8
0,1 R	S 28101	
0,15 R	O 15009	
0,22 R	S 15012	O 29239
0,33 R	O 15014	O 15104
0,47 R	S 15016	O 15108
1 R	S 15026	O 15115
1,2 R	S 15028	O 15116
1,5 R	O 15029	O 15118
1,8 R	O 15031	O 15119
2,2 R	S 15032	S 15121
3,3 R	S 15035	O 15124
4,7 R	S 15038	S 15126
5,1 R	O 15039	O 15127
5,6 R	S 15041	S 15128
6,8 R	S 15043	S 15129
10 R	S 15046	S 15131
12 R	O 15047	O 15132
15 R	S 15049	O 15133
22 R	S 15051	S 15135
27 R	O 15053	O 15136
33 R	S 15054	O 15138
47 R	S 15057	S 15140
56 R	O 15060	O 15225
68 R	S 15062	S 15226
82 R	O 15063	O 15227
100 R	S 15064	S 15228
120 R	O 15065	O 15230
150 R	S 15068	O 15231
220 R	S 15071	S 15233
330 R	S 15074	S 15236
390 R	S 15075	O 15237
470 R	S 15076	S 15238
560 R	S 15078	O 15241
680 R	S 15079	O 15243
820 R	S 15080	O 15244
1 K	S 15082	S 15245
1,5 K	S 15085	O 15249
10 K	S 15101	S 15267

Minimum ordering quantity 500pcs is intended for items which are marked by "O"

## Wire Wound Resistors



	R5W	R10W
L1 [mm]	22,0	48,0
L2 [mm]	35,0	35,0
D [mm]	10x9	10x9

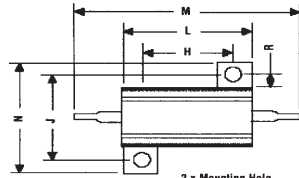
Technical parameters	R5W	R10W
Power Rating @ 70°C	5W	10W
Resistance Tolerance	5%	5%
Temperature Coefficient	300ppm	400ppm
Max. Working Voltage	350V	750V
Insulation Resistance	> 1 GΩ	> 1 GΩ
How to order	R5W 10R	R10W 10R

Ohmic Value	R5W	R10W
0,1 R	S 5231	S 53625
0,15 R	S 6004	S 53626
0,22 R	S 6005	S 53627
0,33 R	S 6006	S 53628
0,47 R	S 6003	S 53629
1 R	S 6007	S 53630
1,2 R	O 57966	O 57976
1,5 R	S 6008	O 57977
1,8 R	S 6009	O 57978
2,2 R	S 6010	S 53631
3,3 R	S 6011	S 53632
4,7 R	S 6012	S 53633
5,1 R	S 6013	O 57979
5,6 R	S 6014	S 53634
6,8 R	S 6015	S 53635
10 R	S 6016	S 53636
12 R	S 6017	O 57980
15 R	S 6018	O 57981
18 R	S 68554	S 53637
22 R	S 6019	O 68577
27 R	S 6020	O 68596
33 R	S 6021	O 68578
47 R	S 6022	O 68579
56 R	O 57967	O 68580
68 R	O 57968	O 68581
82 R	S 6023	O 68582
100 R	S 6024	O 68586
120 R	S 6025	O 68584
150 R	S 6026	O 68585
220 R	S 6027	O 68586
330 R	S 6028	O 68587
390 R	O 57971	O 68588
470 R	S 6029	O 68589
560 R	O 57972	O 68590
680 R	O 57973	O 68591
820 R	O 57974	O 68592
1 K	S 6030	O 68593
1,5 K	S 6031	O 68594
10 K	O 57975	O 68595

Minimum ordering quantity 500pcs is intended for items which are marked by "O"

## Aluminium Housed Power Resistors

tyco



	HSA10	HSA25	HSA50
H±0,3 [mm]	14,3	18,3	39,7
J±0,3 [mm]	15,9	19,8	21,4
K±0,3 [mm]	2,4	3,3	3,3
L [mm]	21	29	51
M [mm]	36,5	51,8	72,5
N [mm]	21	28	30,8
P [mm]	11	15	17
R [mm]	1,9	2,8	2,8
T±0,5 [mm]	5,2	7,2	7,9
U [mm]	3,2	3,2	3,2

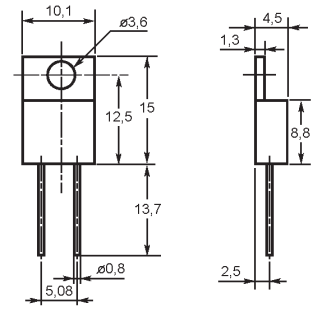
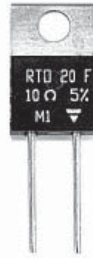
2 x Mounting Hole  
 HSA5 - 2.4mm  
 HSA10 - 2.4mm  
 HSA25 - 3.3mm  
 HSA50 - 3.3mm

Technical parameters	HSA10	HSA25	HSA50
Power Rating @25°C	16W with heatsink 8W without heatsink	25W with heatsink 12,5W without heatsink	50W with heatsink 20W without heatsink
Standard Heatsink-Area at Thickness 1mm	415 cm <sup>2</sup>	535 cm <sup>2</sup>	535 cm <sup>2</sup>
Resistance Tolerance	5%	5%	5%
Max. Working Voltage	265V	550V	1250V
Dielectric Strength	1400V AC	2500V AC	2500V AC
Package	Loose Piece- Tray	Loose Piece- Tray	Loose Piece- Tray
Manufact. Part Numb.	HSA10xxxJ	HSA25xxxJ	HSA50xxxJ
How to order	HSA 10 1K	HSA 25 1K	HSA 50 1K

Ohmic Value	HSA10	HSA25	HSA50
0,1 R	S 67432	S 67447	S 67461
0,22 R	S 67475	S 67448	S 67462
0,47 R	S 67433	S 67449	S 67463
1 R	S 67434	S 67450	S 67464
2,2 R	S 67435	S 67451	S 46852
4,7 R	S 67436	S 56945	S 67465
10 R	S 67437	S 67452	S 60860
22 R	S 67438	S 67453	S 67466
47 R	S 67439	S 67454	S 67467
100 R	S 67440	S 67455	S 67468
220 R	S 67441	S 67456	S 67469
470 R	S 67442	S 67457	S 67470
1 K	S 67443	S 67458	S 67471
2,2 K	S 67444	S 59736	S 67472
4,7 K	S 67445	S 67459	S 67473
10 K	S 67446	S 67460	S 67474

## Thick Film Power Resistors TO220 Package

VISHAY



Technical parameters	RTO20	RTO50
Thermal Resistance and Nominal Power	20W at + 25 °C RTH(j-c): 6.5 °C/W free air 2W at + 25 °C	50W at + 25°C RTH (j-c): 2.6°C/W free air 2.25W at + 25°C
Resistance Tolerance	5%	5%
Temperature Coefficient	150-300ppm	150-300ppm
Max. Working Voltage	250V	300V
Operating Temp. Range	-55°C...+155°C	-55°C...+155°C
Package	50 pcs	50 pcs
Manufact. Part Numb.	RTO20F	RTO50F
How to order	RTO20FE 5% 100R	RTO50FE 5% 100R

Ohmic Value	RTO20	RTO50
1 R	S 50903	S 50906
10R	S 49247	S 50905
47 R	S 783	S 11739
100 R	S 50904	S 11740

## Resistance Wires



Varnished resistance wire is supplied in length 5m. It is usually used for the production of precision resistors - low resistance values. It can be also used for current measurement as the shunt, but also as heating elements.

Part No.	Ord.No	Description
S ISOTAN 2,5	940	2,5 Ω/m, D=0,5mm, L=5m
S ISOTAN 10	941	10 Ω/m, D=0,25mm, L=5m
S ISOTAN 28	942	28 Ω/m, D=0,15mm, L=5m

## Zero Ohm Jumper Wire

YAGEO

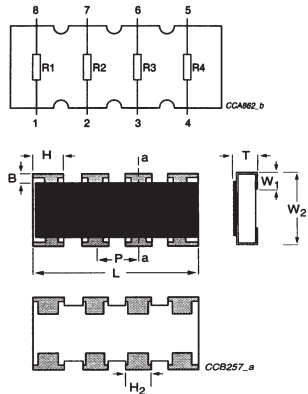
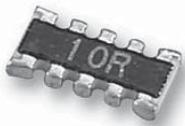


Material of Jumper Wire: Soft Copper Wire with Tin Plating  
 Diameter: φ=0,6mm  
 Conductor resistance: 0,005Ω/cm  
 Current Rating: 7,5A at 70°C  
 Length: 52,4±1mm

Part No.	Ord.No
S JPW-06	14710
S JPW-08	14712



## Array Chip Resistors

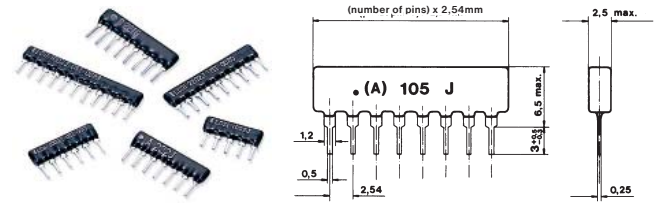


	YC124	YC164	YC324
<b>B [mm]</b>	0.20	0.30	0.50
<b>H [mm]</b>	0.45	0.65	1.10
<b>P [mm]</b>	0.50	0.80	1.27
<b>L [mm]</b>	2.00	3.20	5.08
<b>H<sub>1</sub> [mm]</b>	0.30	0.50	0.90
<b>T [mm]</b>	0.45	0.60	0.60
<b>W<sub>1</sub> [mm]</b>	0.30	0.30	0.50
<b>W<sub>2</sub> [mm]</b>	1.00	1.60	3.20

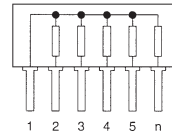
Technical parameters	YC124	YC164	YC324
<b>Case Size</b>	0804	1206	2012
<b>Number of Resistors</b>	4x0402	4x0603	4x1206
<b>Power Rating @ 70°C</b>	1/16W	1/16W	1/8W
<b>Resistance Tolerance</b>	5%	5%	5%
<b>Temperature Coefficient</b>	±200ppm/°C	±200ppm/°C	±200ppm/°C
<b>Max. Working Voltage</b>	50V	50V	200V
<b>Di. Withstand. Voltage</b>	100V	100V	500V
<b>Operating Temp. Range</b>	-55°C ... +155°C		
<b>Marking</b>	EIA-marking code: 3 digits		
<b>Package: Tape &amp; Reel</b>	10 000 pcs	5000 pcs	4000 pcs
<b>Manufact. Part Number</b>	YC124	YC164	YC324
<b>How to order</b>	YC124 1K	YC164 1K	YC324 1K

Ohmic Value	YC124	YC164	YC324
10R	O 68433	O 54170	O 68489
15R	O 68437	O 68465	O 68492
22R	O 68442	O 56398	O 68497
33R	O 68447	O 64512	O 68502
47R	O 68452	O 68480	O 68507
68R	O 68457	O 68484	O 68512
100R	O 68435	O 68463	O 64586
150R	O 68439	O 68467	O 68494
220R	O 68444	O 68471	O 68499
330R	O 68449	O 66174	O 68504
470R	O 68454	O 51392	O 68509
680R	O 68459	O 51393	O 68514
1K	O 68430	S 54171	S 66207
1,5K	O 68432	O 68462	O 68487
2,2K	O 68440	O 68468	O 68495
3,3K	O 68445	O 54173	O 68500
4,7K	O 68450	S 54174	S 68505
6,8K	O 68455	O 68482	O 68510
10K	O 53842	S 51394	S 68488
15K	O 68436	O 68464	O 68491
22K	O 68441	O 68469	O 68496
33K	O 68446	O 68473	O 68501
47K	O 68451	S 68479	S 68506
68K	O 68456	O 68483	O 68511
100K	O 68434	S 57267	S 68490
150K	O 68438	O 68466	O 68493
220K	O 68443	O 68470	O 68498
330K	O 68448	O 68474	O 68503
470K	O 68453	O 68481	O 68508
680K	O 68458	O 68485	O 68513
1M	O 68431	O 68461	O 68486

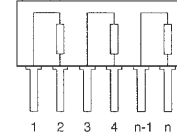
## Resistor Networks



Lxx-1 (A)  
1 common terminal



Lxx-3 (B)  
separate resistors



**Example >**  
(A) 105 J  
10.10<sup>5</sup>=1MΩ,  
(A) - 1 common terminal  
J=5%

Technical parameters	L05-1, L06-1, L09-1	L08-3
<b>Case Size</b>	SIL	SIL
<b>Power Rating @70°C</b>	0,125 W	0,2 W
<b>Resistance Tolerance</b>	5%	5%
<b>Temperature Coefficient</b>	±50ppm	±50ppm
<b>Max. Working Voltage</b>	100 V	100 V
<b>Dielectric Strength</b>	250 V	250 V
<b>Insulation Resistance</b>	> 10GΩ	> 10GΩ
<b>Marking</b>	A MILCode	B MIL Code
<b>Package</b>	1000 pcs, bag = 100 pcs	
<b>How to order</b>	L05-1 5% 10K	L08-3 5% 10K

Ohmic Value	L05-1 4xR	L06-1 5xR	L09-1 8xR	L08-3 4xR
47 R	O 21121	O 21196	S 18367	S 21446
100 R	O 21126	O 21200	O 18371	S 21450
220 R	S 21130	O 21204	S 18375	S 21454
330 R	O 21132	O 21206	O 18377	S 21497
470 R	S 21151	O 21208	S 18379	S 21499
560 R	S 21152	O 21209	O 18380	O 21500
680 R	S 21153	O 21210	S 18381	S 21501
820 R	O 21154	O 21211	S 18382	O 21502
1 K	S 21155	O 21212	S 18383	S 21503
1,2 K	S 21156	O 21213	S 18384	O 21504
1,5 K	S 21157	O 21214	S 18385	S 21505
1,8 K	O 21158	O 21215	S 18386	O 21506
2,2 K	S 21159	O 21216	S 18387	S 21507
2,7 K	O 21160	O 21217	S 18388	O 21508
3,3 K	S 21161	S 21218	S 18389	S 21509
3,9 K	O 21162	O 21218	O 18390	O 21510
4,7 K	S 21163	S 21220	S 18391	S 21511
5,6 K	O 21164	O 21221	S 18392	O 21512
6,8 K	S 21165	O 21222	S 18393	S 21513
8,2 K	S 21166	O 21223	O 18394	O 21514
10 K	S 21167	S 18860	S 18395	S 21515
12 K	S 21168	O 21224	S 18396	O 21516
15 K	O 21169	O 21225	S 18397	S 21517
22 K	S 21171	O 21227	S 18399	S 21519
33 K	S 21173	O 21229	S 18401	S 21521
47 K	S 21175	O 21231	S 18403	S 21523
68 K	S 21177	O 21233	S 18405	O 21525
100 K	S 21179	O 21299	S 18407	S 21527
220 K	S 21183	O 21303	S 18411	S 21531
470 K	S 21187	O 21307	S 18415	S 21535
1 M	S 21191	O 21311	S 18419	O 21539

## Carbon Resistors Kit



Assortment of 610 numbers carbon film resistors.  
10 pieces/value  
Belted as per values

<b>Technical parameters:</b>	<b>SET RC-E12</b>
Case Size	0207
Max. Voltage	250 V
Resistance Tolerance	5%
Power Rating	0,25 W
Operating Temperature Range	-55°C ... +155°C
How to order	SET RC

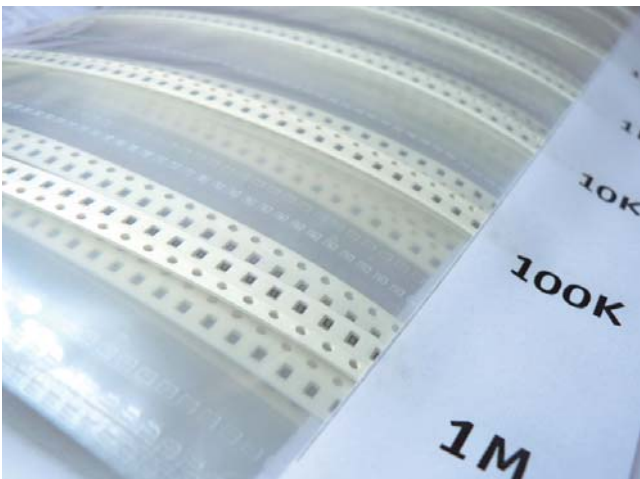
Part No.	Ord.No
S SET RC-E12	54785

## Surface Mount Resistor Kits



Ring binder surface mount resistor kits  
0603, 0805 and 1206 case sizes  
1% tolerance option  
Available in E6 and E12 series values  
Kits contain 50 pieces of each ohmic value from  
10R to 1M plus OR  
All resistors are individually marked and supplied  
on tapes.

Part No.	Ord.No	Description
S SMD SET R0603	51875	E6 Series, 1R - 10M, 0R à 50pcs
S SMD SET R0805	49903	E12 Series, 1R - 10M, 0R à 50pcs
S SMD SET R1206	50902	E12 Series, 1R - 10M, 0R à 50pcs



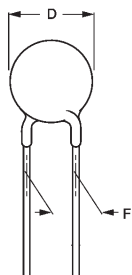
# Order online



## electroniconline

www.soselectronic.com

## Varistors



Varistor is a voltage dependent resistor with symmetrical voltage-current characteristics that is designed to protect all kinds of electronic devices or elements from switching and induced lightning surges. Its non linear exponent characteristics with broad using range and mass production is gradually being used by various level of electric engineering.

**Features:**

- Fast response time.
- Low leakage current.
- Excellent voltage ratio.
- Wide voltage & energy ratio.
- Low standby power and no follow on current
- High performance in surge current handling capability.
- High performance in clamping voltage characteristics.

### JVR Series

Part No.	Ord.No.	Uvar[V]	Urms[Vac]	Umax[Vdc]	Pmax [mW]	I <sub>max</sub> [A]	D [mm]	F [mm]
S JVR05N180K	6200	18	11	14	10	100	5	5
S JVR07N220K	6202	22	14	18	20	250	7	5
S JVR05N390K	6204	39	25	31	10	100	5	5
S JVR07N390K	6205	39	25	31	20	250	7	5
S JVR05N101K	6198	100	60	85	100	400	5	5
S JVR07N101K	6199	100	60	85	250	1200	7	5
S JVR07N201K	6201	200	130	170	250	1200	7	5
S JVR05N391K	6206	390	250	320	100	400	5	5
S JVR07N391K	6207	390	250	320	250	1200	7	5
S JVR14N391K	55759	390	250	320	600	4500	14	7,5
S JVR07N431K	6209	430	275	350	250	1200	7	5
S JVR10N431K	6210	430	275	350	400	2500	10	5
S JVR07N471K	6211	470	300	385	250	1200	7	5
S JVR10N471K	6212	470	300	385	400	2500	10	7,5

### 59x Series

Part No.	Ord. No.	Uvar[V]	Urms[Vac]	Umax[Vdc]	Pmax[mW]	I <sub>max</sub> [A]	D [mm]	F [mm]
S 593-30	20469	47	30	38	250	250	9	5
S 593-60	20470	100	60	85	250	1200	9	5
S 593-250	20472	390	250	320	250	1200	9	5
S 592-275	20468	430	275	350	100	400	7	5
S 593-275	20473	430	275	350	250	1200	9	5
S 594-275	20481	430	275	350	400	2500	13,5	7,5
S 595-275	20485	430	275	350	600	4500	17	7,5
S 593-300	20474	470	300	385	250	1200	9	5
S 595-300	20486	470	300	385	600	4500	17	7,5
S 593-420	20492	680	420	560	250	1200	9	5

### SIOV Series

Part No.	Ord. No.	Uvar[V]	Urms[Vac]	Umax[Vdc]	Pmax[A]	I <sub>max</sub> [A]	D [mm]	F [mm]
O SIOV-S05K25	68677	39	25	31	0,01	100	7	5
O SIOV-S05K30	68678	47	30	38	0,01	100	7	5
O SIOV-S05K60	68679	100	60	85	0,1	400	7	5
O SIOV-S05K250	68681	390	250	320	0,1	400	7	5
O SIOV-S07K25	56585	39	25	31	0,02	250	9	5
O SIOV-S07K60	68680	100	60	85	0,25	1200	9	5
S SIOV-S07K130	11201	205	130	170	0,25	1200	9	5
O SIOV-S07K250	8403	390	250	320	0,25	1200	9	5
O SIOV-S07K275	50724	430	275	350	0,25	1200	9	5
O SIOV-S10K250	4042	390	250	320	0,4	2500	12	7,5
O SIOV-S10K275	4310	430	275	350	0,4	2500	12	7,5
O SIOV-S10K300	68682	470	300	385	0,4	2500	12	5,0
O SIOV-S14K250	6379	390	250	320	0,6	4500	20	7,5
O SIOV-S14K275	1531	430	275	350	0,8	4500	15,2	7,5
O SIOV-S14K300	68683	470	300	385	0,6	4500	15,5	7,5

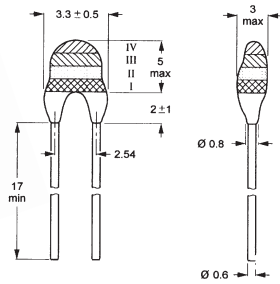
### Cross-References

	JoyIn	Vishay	Epcos	LittleFuse	Panasonic	AVX
100mW	JVR05	592	SIOV S05K		ERZV05	VE07M
250mW	JVR07	593	SIOV S07K		ERZV07	VE09M
400mW	JVR10	594	SIOV S10K	VxxLA 10	ERZV10	VE13M
600mW		595	SIOV S14K	VxxLA 20	ERZV14	VE17M
1W			SIOV S20K	VxxLA 40	ERZV20	



## NTC Thermistors

### 640 Series



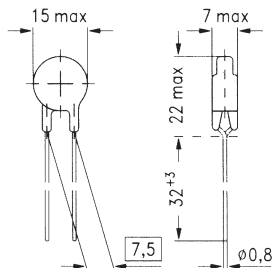
These thermistors have a negative temperature coefficient. The device consists of a chip with two tinned solid copper-plated leads. It is grey lacquered and colour coded, but not insulated. FEATURES: accuracy over a wide temperature range, high stability over a long life, excellent price/performance ratio. APPLICATIONS: temperature sensing and control

Technical parameters	640 Series
Resistance value at 25 °C	680 Ω ... 470 kΩ
Maximum dissipation	0,5 W
Operating temperature range	-40°C ... 125°C
Response time	1,2 s

Part No.	Ord.No	R25
O 640-680R	7189	680Ω
S 640-1K	7186	1kΩ
S 640-2,2K	35674	2,2kΩ
S 640-2,7K	26804	2,7kΩ
S 640-3,3K	35675	3,3kΩ
S 640-4,7K	26805	4,7kΩ
S 640-6,8K	35676	6,8kΩ
S 640-10K	26806	10kΩ
S 640-12K	26807	12kΩ
S 640-15K	35677	15kΩ
S 640-33K	35678	33kΩ
S 640-47K	26809	47kΩ
S 640-68K	35679	68kΩ
S 640-100K	26810	100kΩ
O 640-150K	35949	150kΩ
O 640-220K	26811	220kΩ
O 640-330K	35680	330kΩ
O 640-470K	26812	470kΩ

R25 -Resistance value at 25°C.

### 237 Series



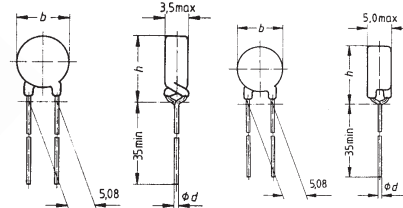
NTC thermistors for inrush current limiting, as all NTCs, are made of polycrystalline mixed oxide ceramics. They suppress high inrush current surges, which occur when, for example, low impedance smoothing capacitors are charged.

**Why inrush current limiting?** In many items of electrical equipment, switched mode power supplies, motors, transformers or amplifiers etc., high inrush currents occur, when the devices are turned on. These can damage individual components or entire assemblies or blow fuses in error. Such high currents are caused by extremely low impedance of smoothing capacitors or coils which produce nearly short circuits at the moment of switching on. However, if NTC thermistors are used as inrush current limiters, this problem can be solved without elaborate circuitry at low cost.

Part No.	Manuf.Part.No	Ord.No	R25	I25
S S 237/1	B57237-S0109-M	7058	1Ω	9A
S S 237/2,5	B57237-S0259-M	7059	2,5Ω	6,5A
S S 237/5	B57237-S509-M	7060	5Ω	5A
S S 237/10	B57237-S100-M	7061	10Ω	3,7A
S S 237/22	B57237-S220-M	7062	22Ω	2,8A

R25 -Resistance value at 25°C, I25 - Current value at 25°C.

## PTC Thermistors



Positive temperature coefficient thermistors designed for over current and short-circuit protection applications

FEATURES: lead-free terminals, manufacturer's logo and type designation stamped on in white, low resistance, for rated currents of up to 1,8 A, UL approval and VDE approval

Technical parameters	PTC30	PTC265
Max. operating voltage	30 V	265 V
Temperature	120°C	80 °C
Switching Time	< 10 s	< 6 s
Resistance Tolerance	25 %	25 %

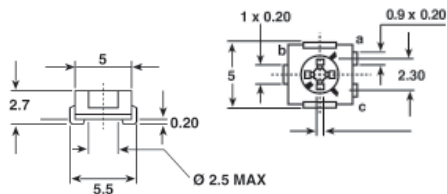
Part No.	Manuf. Part No.	b [mm]	Rn	In	Is
PTC 30V1,8	B59975C0120A070	9,0	1,8Ω	450mA	900mA
PTC 30V4,6	B59985C0120A070	6,5	4,6Ω	250mA	500mA
PTC 265V10	B59850C0120A070	13,5	10Ω	200mA	400mA
PTC 265V25	B59870C0120A070	9,0	25Ω	100mA	200mA
PTC 265V70	B59880C0120A070	6,5	70Ω	55mA	110mA

Part No.	Ord.No
S PTC 30V1,8	6041
S PTC 30V4,6	6042
S PTC 265V10	6034
S PTC 265V25	6036
S PTC 265V70	6037

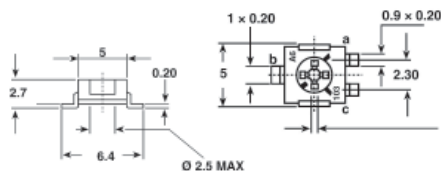
## Surface Mount Trimmers - Single Turn Cermet Sealed



TS53YJ



TS53YL

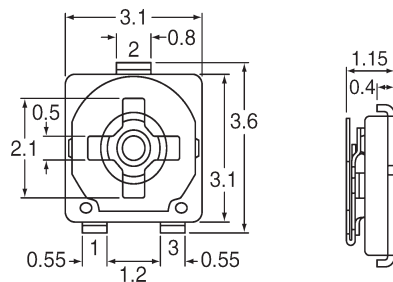


Technical parameters	TS53YJ	TS53YL
Power Rating at 70°C	0,25W	0,25W
Mechanical Travel	270°±10°	270°±10°
Electrical Travel	220°±15°	220°±15°
Resistance Tolerance	±20%	±20%
Limiting Element Voltage	200V	200V
Temperature Coefficient	±100ppm/°C	±100ppm/°C
Temperature Range	-55...+125°C	-55...+125°C
Dimensions	5,5x5x2,7mm	6,4x5x2,7mm
Package	500pcs Tape & Real	
Terminals design	J - inside	L - outside
How to order	TS53YJ 1K	TS53YL 1K

Ohmic Value	TS53YL	TS53YJ
100R	S 68112	O 72427
200R	S 68113	O 68101
500R	S 68114	O 68102
1K	S 68115	O 68103
2K	S 68116	O 68104
5K	S 68117	O 68105
10K	S 68118	O 68106
20K	S 68119	O 68107
50K	S 68120	O 68108
100K	S 68121	O 68109
200K	S 68122	O 68110
500K	S 68123	O 68111
1M	S 68124	O 80580

Minimum ordering quantity 5pcs is intended for items marked by "O"

## Surface Mount Trimmers - Single Turn Carbon Type



LOW PROFILE

Technical parameters	PVZ3G
Power Rating	0,1W (pri 50°C)
Numb. of Turns (Effective Rotation Angle)	1(230°±10°)
Resistance Tolerance	±30%
Max. operating voltage	50Vdc
Temperature Coefficient	±500ppm/°C
Temperature Range	-25°C to 85 °C
Dimensions	3,1×3,6×1,15mm
Package	1000pcs
How to order	PVZ3G 1K

Ohmic Value	PZV3G	Ohmic Value	PZV3G
220R	S 68749	33K	S 68756
330R	S 68754	47K	S 68760
470R	S 68758	68K	S 68764
680R	S 68762	100K	S 68743
1K	S 68741	150K	S 68747
1,5K	S 68745	220K	S 68752
2,2K	S 68750	330K	S 68757
3,3K	S 68755	470K	S 68761
4,7K	S 68759	680K	S 68765
6,8K	S 68763	1M	S 68744
10K	S 68742	1,5M	O 68748
15K	S 68746	2,2M	O 68753
22K	S 68751		

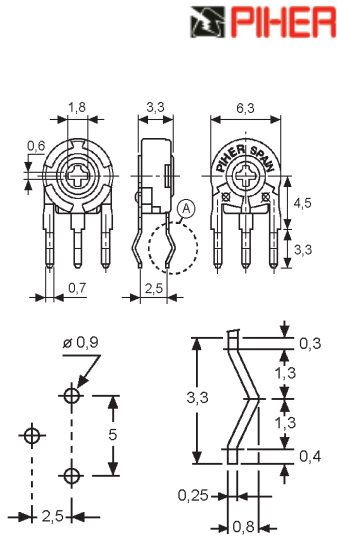
Minimum ordering quantity 5pcs is intended for items marked by "O"



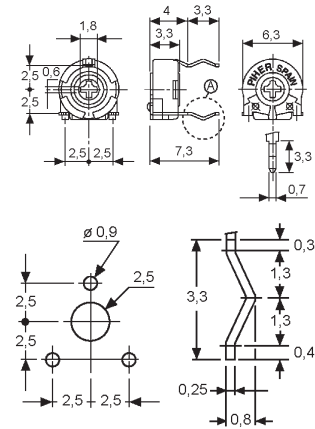
Carbon Trimmers

PT 6 Series

Type PT 6 H  
vertical mount – horizontal adjust



Type PT 6 V  
horizontal mount – vertical adjust



6 mm

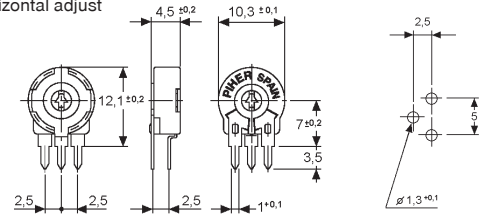
Technical parameters	PT 6 H	PT 6 V
Max. Voltage	100V DC	100V DC
Range of Values	250 Ω - 1 MΩ	250 Ω - 1 MΩ
Tolerance	±20%	±20%
Electrical rotation angle	200 ±20°	200 ±20°
Operating Temperature	-25...+70°C	-25...+70°C
Power Rating at 50°C	0,1W	0,1W
Mounting Methods	vertical mount – horizontal adjust	horizontal mount – vertical adjust
Package	1000 pcs	1000 pcs
Manufact. Part Number	PT-6 KH	PT-6 KV
How to order	PT 6 H 250R	PT 6 V 250R

Ohmic Value	PT 6 H	PT 6 V
250R	O 22546	O 22559
500R	O 22547	S 22560
1K	S 22548	S 22571
2,5K	S 22549	S 22561
5K	S 22550	S 22562
10K	S 22551	S 22563
25K	O 22552	O 22564
50K	O 22553	S 22565
100K	S 22554	S 22566
250K	O 22555	O 22567
500K	O 22556	O 22568
1M	O 22557	O 22569

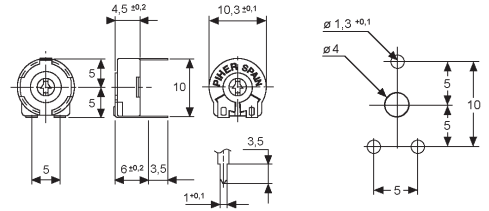
Minimum ordering quantity 5pcs is intended for items marked by "O"

PT10 L Series

Type PT 10 LH  
vertical mount – horizontal adjust



Type PT 10 LV  
horizontal mount – vertical adjust



10mm

Technical parameters	PT 10 LH	PT 10 LV
Max. Voltage	200V DC	200V DC
Range of Values	100 Ω...500 KΩ	100 Ω...500 KΩ
Tolerance	±20%	±20%
Electrical rotation angle	220 ±20°	220 ±20°
Operating Temperature	-25...+70°C	-25...+70°C
Power Rating at 50°C	0,15W	0,15W
Mounting Methods	vertical mount – horizontal adjust	horizontal mount – vertical adjust
Package	500 pcs	500 pcs
Manufact. Part Number	PT-10 LH 01	PT-10 LV 10
How to order	PT 10 LH 250R	PT 10 LV 250R

Ohmic Value	PT 10 LH	PT 10LV
100R	S 15836	O 15851
250R	O 15837	S 15852
500R	O 15838	S 15853
1K	S 15839	S 15854
2,5K	S 15840	S 15855
5K	S 15841	S 15856
10K	S 15842	S 15857
25K	O 15843	S 15858
50K	O 15844	S 15859
100K	S 15845	S 15860
250K	O 15846	O 15861
500K	O 15847	O 15862

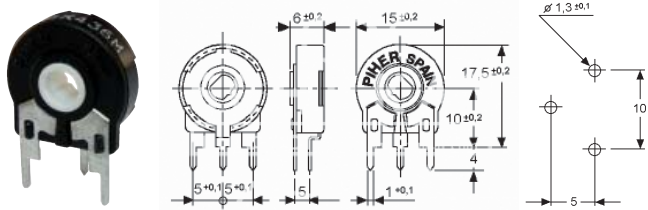
Minimum ordering quantity 5pcs is intended for items marked by "O"

## PT15 N Series



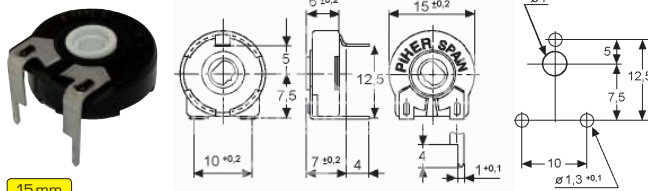
### Type PT 15 NH

vertical mount - horizontal adjust



### Type PT 15 NV

horizontal mount - vertical adjust



15mm

Technical parameters	PT 15 NH	PT 15 NV
Max. Voltage	250V DC	250V DC
Range of Values	100 Ω...500 KΩ	100 Ω...500 KΩ
Tolerance	±20%	±20%
Electrical rotation angle	250 ±20°	250 ±20°
Temperature Range	-25...+70°C	-25...+70°C
Power Rating at 50°C	0,25W	0,25W
Package	200 pcs	200 pcs
Mounting Methods	vertical mount - horizontal adjust	horizontal mount - vertical adjust
Manufact. Part Number	PT-15 N05	PT-15 N02
How to order	PT 15 NH 250R	PT 15 NV 250R

Ohmic Value	PT 15 NH	PT 15 NV
100R	O 18288	O 18303
250R	O 18289	O 18304
500R	O 18290	O 18305
1K	S 18291	S 18306
2,5K	O 18292	S 18307
5K	O 18293	O 18308
10K	S 18294	S 18309
25K	O 18295	S 18310
50K	O 18296	O 18311
100K	S 18297	S 18312
250K	O 18298	O 18313
500K	O 18299	O 18314

## Accessories to PT15 N Series

### Shafts

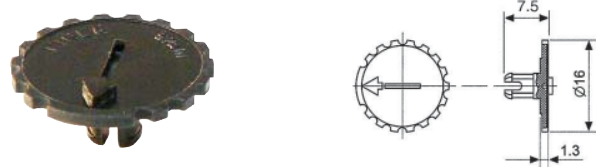
PT 15/5214



Part No.	Ord.No	Description
O PT 15/5272 BK	18318	D6xA12mm black
O PT 15/5272 RD	30156	D6xA12mm red
S PT 15/5214 BK	18319	D6xA19mm black
O PT 15/5207 BK	68992	D6xA25mm black
O PT 15/5216 BK	68993	D6xA35mm black

Minimum ordering quantity 5pcs is intended for items marked by "O"

## Thumbwheels PT 15/5371

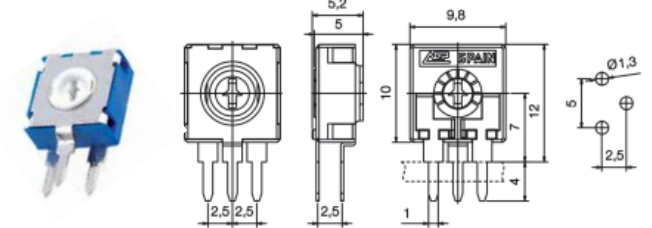


Part No.	Ord.No	Description
S PT 15/5371 BK	28560	D16mm black
O PT 15/5371 RD	40091	D16mm red
O PT 15/5371 WH	68991	D16mm white

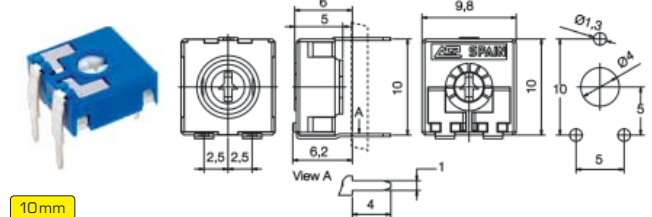
Minimum ordering quantity 5pcs is intended for items marked by "O"

## CA9 H/V Series - Carbon

CA 9 H



CA 9 V



10mm

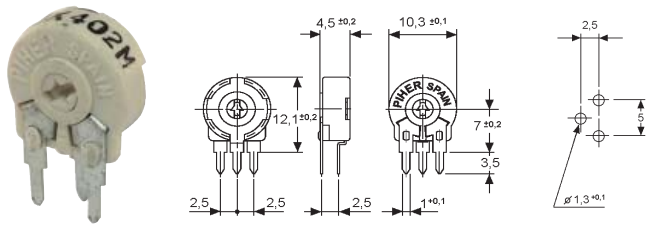
Technical parameters	CA 9 H	CA 9 V
Max. Voltage	200 V DC	200 V DC
Range of Values	100 Ω... 2,5 MΩ	100 Ω... 2,5 MΩ
Tolerance	±20% (>1M = ±30%)	±20% (>1M = ±30%)
Electrical rotation angle	220 ±20°	220 ±20°
Temperature Range	-25...+70°C	-25...+70°C
Power Rating at 40°C	0,15 W	0,15 W
Package	500 pcs	500 pcs
Mounting Methods	vertical mount - horizontal adjust	horizontal mount - vertical adjust
Manufact. Part Number	CA9 H 2,5	CA9 V
How to order	CA9 H 5K	CA9 V 5K

Ohmic Value	CA 9 H	CA 9 V
100 R	S 58478	S 58504
250 R	S 58479	S 58505
500 R	S 58480	S 58506
1 K	S 58481	S 58507
2,5 K	S 58482	S 58508
5 K	S 58483	S 58509
10 K	S 58484	S 58510
25 K	S 58485	S 58511
50 K	S 58486	S 58512
100 K	S 58487	S 58513
250 K	S 58488	S 58514
500 K	S 58489	S 58515
1 M	S 58490	S 58516
2,5 M	O 58491	S 58517

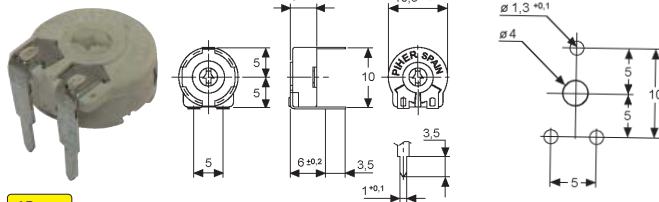
Cermet Trimmers

PTC 10 L Series

Type PTC 10 LH  
vertical mount - horizontal adjust



Type PTC 10 LV  
horizontal mount - vertical adjust



10mm

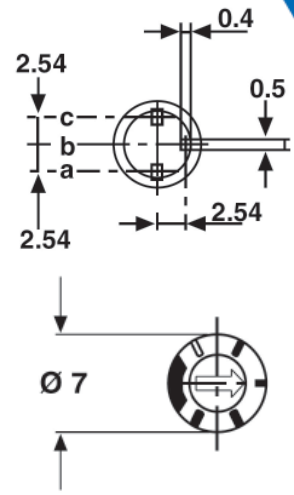
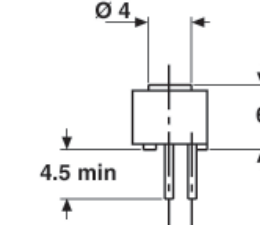
Technical parameters	PTC 10 LH	PTC 10 LV
Max. Voltage	200V DC	200V DC
Range of Values	250 Ω...100 KΩ	250 Ω...100 KΩ
Tolerance	±20%	±20%
Electrical rotation angle	220 ±20°	220 ±20°
Temperature Range	-40...+90°C	-40...+90°C
Power Rating at 70°C	0,33W	0,33W
Package	500 pcs	500 pcs
Mounting Methods	vertical mount - horizontal adjust	horizontal mount - vertical adjust
Manufact. Part Number	PTC-10 LH01	PTC-10 LV10
How to order	PTC 10 LH 5K	PTC 10 LV 5K

Ohmic Value	PTC 10 LH	PTC 10LV
250R	<b>O</b> 18321	<b>O</b> 18333
500R	<b>O</b> 18322	<b>O</b> 18334
1K	<b>S</b> 18323	<b>S</b> 18335
2,5K	<b>S</b> 18324	<b>S</b> 18336
5K	<b>S</b> 18325	<b>S</b> 18337
10K	<b>S</b> 18326	<b>S</b> 18338
25K	<b>O</b> 18327	<b>O</b> 18339
50K	<b>O</b> 18345	<b>O</b> 18340
100K	<b>S</b> 18328	<b>S</b> 18341

T7 YA Series



NEW!



7 mm

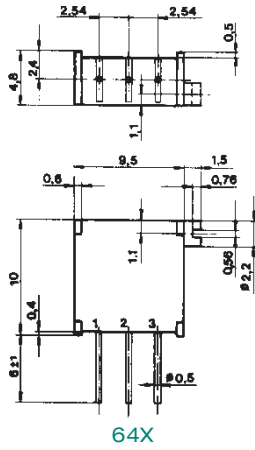
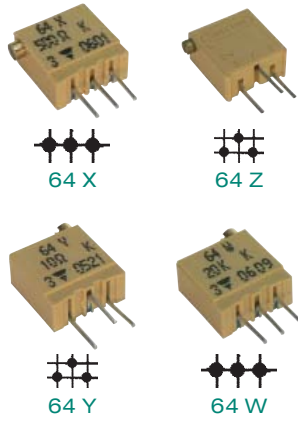
Technical parameters	T7 YA
Power Rating	0,5W at 85°C
Mechanical Travel	300°±5°
Electrical Travel	270°±15°
Resistance Tolerance	±20%
Max. Voltage	250V
Temperature Coefficient	±100ppm/°C
Temperature Range	-55...+125°C
Package	200pcs
How to order	T7 YA 100R

Ohmic Value	T7 YA
100 R	<b>S</b> 78349
220 R	<b>S</b> 79757
470 R	<b>S</b> 79756
1 K	<b>S</b> 79747
2,2 K	<b>S</b> 78350
4,7 K	<b>S</b> 79748
10 K	<b>S</b> 79749
22 K	<b>S</b> 79750
47 K	<b>S</b> 79751
100 K	<b>S</b> 79752
220 K	<b>S</b> 79753
470 K	<b>S</b> 79754



Multi - Turn Cermet Trimmers

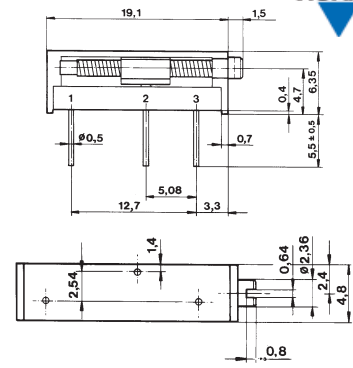
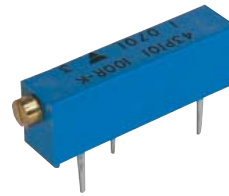
64 Series



Technical parameters	64
Number of Turns - mechanical	23±5
Number of Turns - electrical	21±2
Power Rating at 70°C	0,5W
Max. Working Voltage	250V
Range of Values	10R...2M0
Tolerance	±10%
Temperature Coefficient	±100ppm/°C
Insulation Voltage	1000Vef
Temperature Range	-55...+125°C
Package	50 pcs (tube)
How to order	64 X 100 R

Value	64 X	64 Y	64 Z	64 W
10R	O 57984	S 18022		O 18021
50R	O 57985	S 18024		O 18040
100R	O 30157	S 18025	O 57986	O 18041
200R	O 30158	S 18026	O 57987	O 18042
500R	S 30159	S 18027	O 20452	S 18043
1K	O 30160	S 18028	S 20453	S 18044
2K	O 30161	S 18029	S 20665	S 18045
5K	S 30162	S 18030	O 20454	S 18046
10K	S 30163	S 18031	S 20455	S 18047
20K	S 30164	S 18032	O 20456	S 18048
50K	O 30165	S 18033	S 20457	S 18049
100K	O 30166	S 18034	S 20458	S 18050
200K	O 30167	S 18035	O 20459	S 18051
500K	O 30168	S 18036	O 20460	S 18052

43P Series

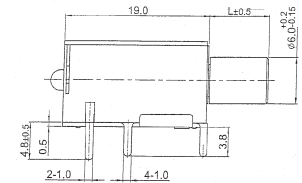
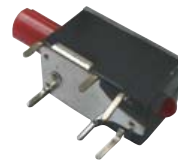


Technical parameters	43 P
Number of Turns - mechanical	18±5
Number of Turns - electrical	15±1
Power Rating at 70°C	0,5W
Max. Working Voltage	250V
Range of Values	10R...2M0
Resistance Tolerance	±10%
Temperature Coefficient	100ppm/°C
Insulation Voltage	1000Vef
Temperature Range	-55...+125°C
Package	25 pcs (tube)
How to order	43 P 100 R

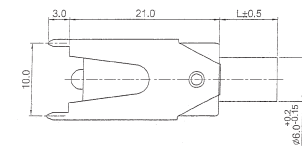
Value	43 P	Value	43 P	Value	43 P
10R	S 19877	1K	S 19883	50K	S 19888
50R	S 19879	2K	S 19884	100K	S 19889
100R	S 19880	5K	S 19885	200K	S 19890
200R	S 19881	10K	S 19886	500K	S 19891
500R	S 19882	20K	S 19887	1M	S 19892

RF Attenuators

Type AT10PHF



Type AT10VYF



Technical parameters	AT10PHF	AT10VYF
Nominal Attenuation	20dB	20dB
Impedance	75 Ω	75 Ω
Max. frequency	800 MHz	800 MHz
Number of Turns	endless	endless
Max. Voltage	50V	50V
Power Rating	0,02W	0,02W
Shaft diameter	9mm	9mm
Colour	red	red
Manufact. Part Number	AT10PHF-B-9SRB-3,5Y-20	AT10PVYF-B-9SRB-3,5Y-20
How to order	AT PHF	AT VYF

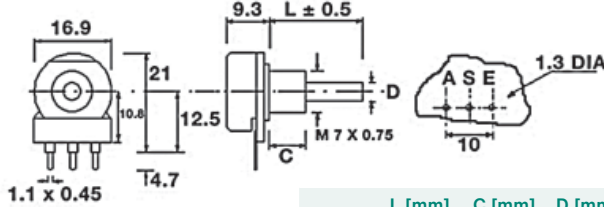
Part No.	Ord.No
S AT10PHF	52520
S AT10VYF	52522

### Carbon Rotary Potentiometers - 16mm size

#### PC 16 BU Series - single



NEW!



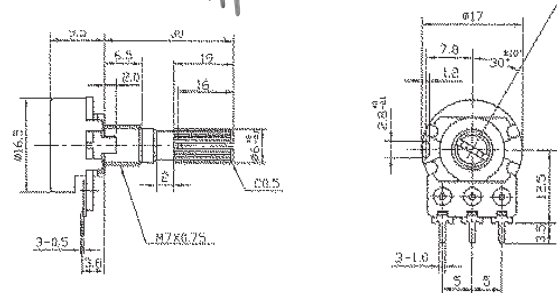
	L [mm]	C [mm]	D [mm]
PC16BU	35	6	4

Spindle 4 mm

Technical parameters	PC 16 BU A	PC 16 BU B
Spindle	D=4mm, L=35mm, plastic	
Rotation Angle - mechanical	270°±5°	
Resistance Taper	linear (LIN) A	logarithmic (LOG)B
Power Rating at 40°C	0,25W	0,12W
Tolerance	±20%	
Limiting Element Voltage	350Vdc	
Insulation Voltage	500Vac	
Mounting	PCB pins	
How to order	PC16BU 10K A	PC16BU 10K B

Ohmic Value	LIN	LOG
100R	○ 75981	
220R	○ 75982	
470R	○ 75983	
1K	S 75984	○ 75996
2,2K	○ 75985	○ 75997
4,7K	S 75986	○ 75998
10K	S 75987	S 75999
22K	S 75988	○ 76000
47K	S 75989	S 76001
100K	S 75990	○ 76002
220K	S 75991	○ 76003
470K	S 75992	○ 76004
1M	○ 75993	○ 76005
2,2M	S 75994	○ 76006
4,7M	○ 75995	

### POM16 Series - single



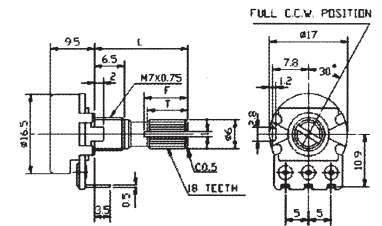
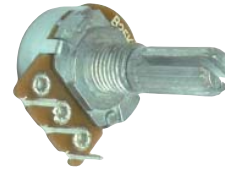
Metal

Spindle 6 mm

Technical parameters	POM 16 LIN	POM 16 LOG
Spindle (diameter/length)	6mm/30mm, 18 -teeth, metal	
Rotation Angle - mechanical	300° ± 5°	
Resistance Taper	linear (LIN)B	logarithmic (LOG)A
Power Rating	0,2W	0,1W
Tolerance	±30%	
Insulation Resistance	min. 100 MΩ @ 500Vdc	
Rotational Life	> 15000 cycles	
Operating Temperature	-10°C ...+70°C	
Mounting	PCB pins	
Package	200 pcs	
How to order	POM 16 LIN 10K	POM 16 LOG 10K

Ohmic Value	LIN	LOG
1K	S 53996	S 54004
5K	S 53997	S 54005
10K	S 53998	S 54006
50K	S 53999	S 54007
100K	S 54000	S 54008
200K	S 54001	S 54009
500K	S 54002	S 54010
1M	S 54003	S 54011

### POM1620 - single



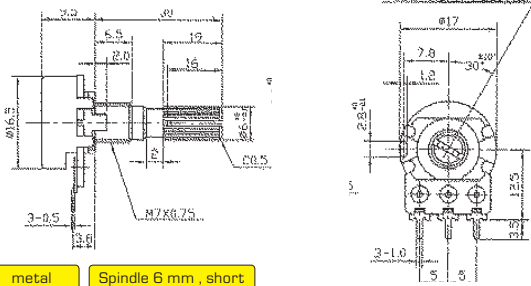
metal

Spindle 6 mm

Technical parameters	POM 1620 LIN
Spindle (diameter/length)	6mm/20mm, 18 - teeth, metal
Rotation Angle - mechanical	300° ± 5°
Resistance Taper	linear (LIN)B
Power Rating	0,2W
Tolerance	±30%
Insulation Resistance	min. 100 MΩ @ 500Vdc
Rotational life	> 15000 cycles
Operating Temperature	-10°C ...+70°C
Mounting	PCB pins, horizontal
Package	200 pcs
How to order	POM 1620 LIN

Ohmic Value	LIN
25K	S 61544

## POM1615 Series - single



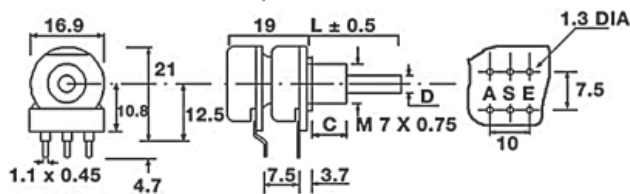
metal Spindle 6 mm, short

Technical parameters	POM 1615 LIN	POM 1615 LOG	POM1615 EXP
Spindle (diameter/length)	6mm/15mm, 18-teeth, metal		
Rotation Angle	300° ± 5°		
Resistance Taper	linear (LIN)B	logarith. (LOG)A	exponen. (EXP)
Power Rating	0,2W	0,1W	
Tolerance	±30%		
Insulation Resistance	min. 100 MΩ @ 500VDC		
Rotational Life	> 15000 cycles		
Operating Temperature	-10°C ... +70°C		
Mounting	PCB pins, horizontal		
Package	200 pcs		
How to order	POS 1615 LIN 10K		

Ohmic Value	LIN	LOG	EXP
1K	S 61185		
5K	S 61188		
10K	S 61184	S 61541	
50K	S 61187		
100K	S 61182		S 61542
500K	S 61186		

## Double Carbon Rotary Potentiometers - 16mm size

### PC2G 16 BU Series - double



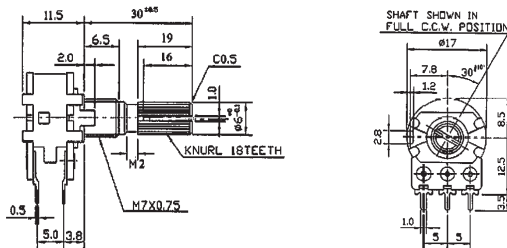
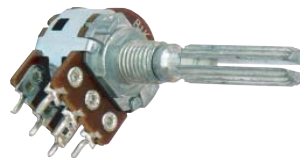
Spindle 4 mm

	L [mm]	C [mm]	D [mm]
PC2G16BU	35	6	4

Technical parameters	PC2G 16 BU A	PC2G 16 BU B
Spindle	4mm, plastic	
Rotation Angle - mechanical	270°±5°C	
Resistance Taper	linear (LIN) A	logarithmic (LOG)B
Rated Dissipation	2x0,25W	2x0,12W
Tolerance	±20%	
Limiting Element Voltage	350V	
Insulation Voltage	500Vac	
Mounting	PCB pins	
How to order	PC2G 16 BU 22K A	PC2G 16 BU 22K B

Ohmic Value	LIN	LOG
1K	O 76007	
2,2K		O 76017
4,7K	O 76008	O 76018
10K	S 76009	S 76019
22K	S 76010	O 76020
47K	S 76011	
100K	S 76012	O 76021
220K	O 76013	O 76022
470K	O 76014	
1M	O 76015	O 76023
4,7M	O 76016	

## POS 16 Series - double



metal Spindle 6 mm

Technical parameters	POS 16 LIN	POS 16 LOG
Spindle (diameter/length)	6mm /30mm, 18-teeth, metal	
Rotation Angle - mechanical	300° ± 5°	
Resistance Taper	linear (LIN)B	logarithmic (LOG)A
Power Rating	0,2W	0,1W
Tolerance	±30%	
Insulation Resistance	min. 100 MΩ @ 500VDC	
Rotational Life	> 15000 cycles	
Operating Temperature	-10°C ... +70°C	
Mounting	PCB pins, horizontal	
Package	200 pcs	
How to order	POS 16 LIN 10K	POS 16 LOG 10K

Ohmic Value	LIN	LOG
1K	S 54020	S 54012
5K	S 54021	S 54013
10K	S 54022	S 54014
50K	S 54023	S 54015
100K	S 54024	S 54016
200K	S 54025	S 54017
500K	S 54026	S 54018
1M	S 54027	S 54019

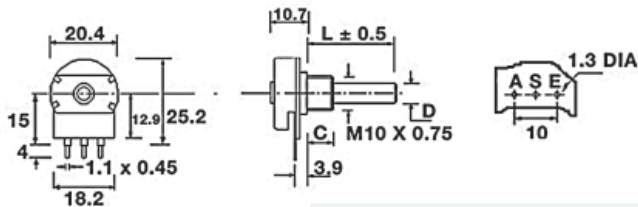
## Carbon Rotary Potentiometers

- 20mm size

PC 20 BU Series - Single



**NEW!**



Spindle 6 mm

	L [mm]	C [mm]	D [mm]
PC20BU	50	8	6

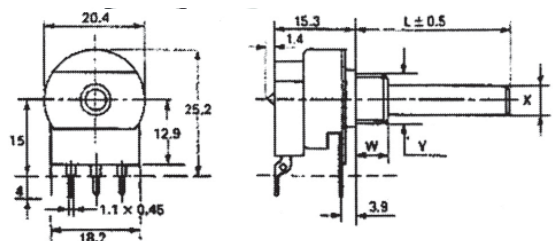
Technical parameters	PC 20 BU A	PC 20 BU B
Spindle	6mm, plastic	
Rotation Angle- mechanical	300°±5°	
Resistance Taper	linear (LIN)A	logarithmic (LOG)B
Power Rating at 40°C	0,4W	0,2W
Tolerance	±20%	
Limiting Element Voltage	500V	
Insulation Voltage	1000Vac	
Mounting	PCB pins	
How to order	PC20 BU 47K A	

Ohmic Value	LIN	LOG
100 R	S 76024	
220 R	S 76025	
470 R	S 76026	
1 K	S 76027	O 76039
2,2 K	S 76028	O 76040
4,7 K	O 76029	S 76041
10 K	S 76030	S 76042
22 K	S 76031	S 76043
47 K	S 76032	S 76044
100 K	S 76033	S 76045
220 K	S 76034	S 76046
470 K	S 76035	S 76047
1 M	S 76036	S 76048
2,2 M	O 76037	O 76049
4,7 M	O 76038	

## PC 20 BU / PC1S Series - Single with Rotary Switch



**NEW!**



Spindle 6 mm

	L [mm]	Y [mm]	W [mm]	X [mm]
PC20BU/PC1S	35	M10x0,75	8	4

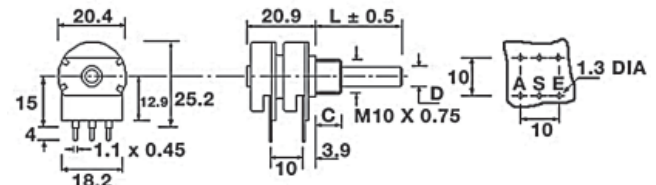
Technical parameters	PC20BU/PC1S A	PC20BU/PC1S B
Spindle	6mm, plastic	
Rotation Angle - mechanical	270°±5°	
Resistance Taper	linear (LIN)A	logarithmic (LOG)B
Power Rating at 40°C	0,4W	0,2W
Tolerance	±20%	
Limiting Element Voltage	500V	
Insulation Voltage	1000Vac	
Switch	1A/24Vdc (0,3A/250 Vac)	
Mounting	PCB pins	
Package	25 pcs	
How to order	PC20BU/PC1S 1KA	

Ohmic Value	LIN	LOG
470R	O 76071	
1K	O 76072	O 76082
2,2K	O 76073	O 76083
4,7K	S 76074	O 76084
10K	O 76075	O 76085
22K	O 76076	O 76086
47K	O 76077	O 76087
100K	S 76078	O 76088
220K	O 76079	O 76089
470K	S 76080	O 76090
1M	S 76081	O 76091

## PC2G 20 BU Series - Double



**NEW!**



Spindle 6 mm

	L [mm]	C [mm]	D [mm]
PC2G20BU	50	8	6

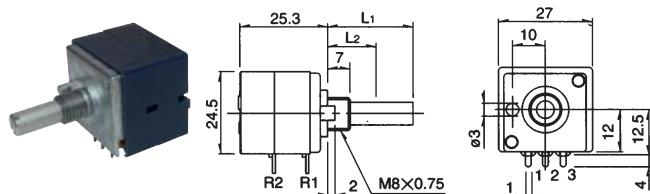
Technical parameters	PC2G 20 BU A	PC2G 20 BU B
Spindle	6mm, plastic	
Rotation Angle - mechanical	300°±5°	
Resistance Taper	linear (LIN)A	logarithmic (LOG)B
Power Rating at 40°C	2x0,4W	2x0,2W
Tolerance	±20%	
Limiting Element Voltage	500V	
Insulation Voltage	1000Vac	
Mounting	PCB pins, horizontal	
How to order	PC2G20BU 1K A	

Ohmic Value	LIN	LOG
470R	O 76050	
1K	O 76051	O 76061
2,2K	O 76052	O 76062
4,7K	O 76053	O 76063
10K	S 76054	S 76064
22K	O 76055	O 76065
47K	S 76056	O 76066
100K	S 76057	S 76067
220K	O 76058	O 76068
470K	O 76059	O 76069
1M	O 76060	O 76070

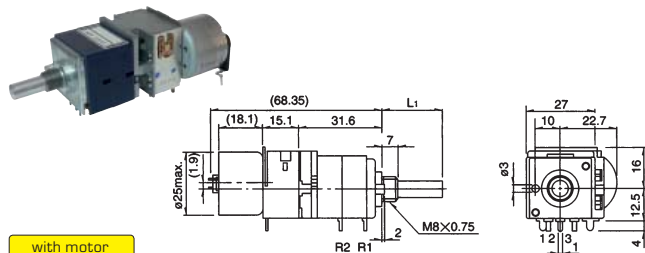
## High-Grade Rotary Audio Potentiometers **ALPS**

These high-grade potentiometer offers comfortable operation and possesses high precision characteristics (gang error, resistance taper, etc.) ideal for audio applications. Applications : volume and level controls in high-grade audio sets We offer two models: version with motor (MC) and without motor.

### RK 27112 Series



### RK 27112 MC Series



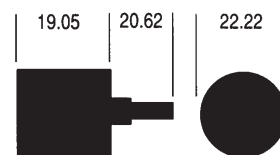
Technical parameters	RK 27112	RK 27112 MC
Total Resistance Tolerance	20%	20%
Rated Power	0,5W	0,5W
Max. Operating Voltage	30V AC	30V AC
Insulation Resist. (500VDC)	100 MΩ	100 MΩ
Total Rotation Angle	300°±5°	300°±5°
Spindle $\varnothing$ /L1	6mm/20mm	6mm/20mm
Motor Voltage	-	4-6V DC
Max. Operating Current (at rotation)	-	max. 100mA
Rotational Speed	-	12 sec/300°
How to order	RK27112 2x10K LIN RK27112MC 2x10K LIN	

RK27112	LIN	LOG
2x10K	○ 7172	○ S 5595
2x50K	○ 8312	○ S 2751
2x100K	○ 8313	○ S 6576
RK27112 MC	LIN	LOG
2x10K	○ 5593	○ S 5592
2x50K	○ 8315	○ S 5594
2x100K	○ 8315	○ S 2752

## Precision Wirewound Multi - Turn Potentiometer



### 534 Series

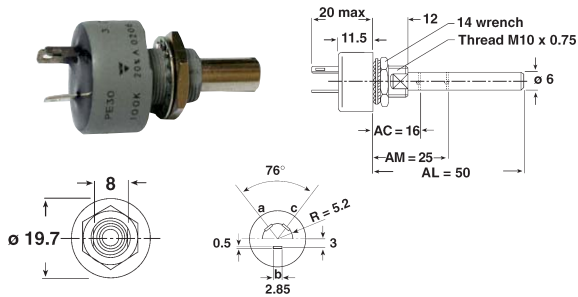


Technical parameters	534
Spindle	6,35 mm
Number of Turns	10/3600°+10%
Resistance Taper	linear
Power Rating	3W/40°C, 2W/70°C
Resistance Tolerance	±5 %
Temperature Coefficient	20ppm
Temperature Range	-55...+125°C
Package	10 pcs
Suitable Knob	KNOFF 635
How to order	534 100R

Ohmic Value	LIN	Ohmic Value	LIN
100R	S 16226	5K	S 16231
200R	S 16227	10K	S 16232
500R	S 16228	20K	S 16233
1K	S 16229	50K	S 16234
2K	S 16230	100K	S 16235

## Power Potentiometers

### PE30K Series - Cermet



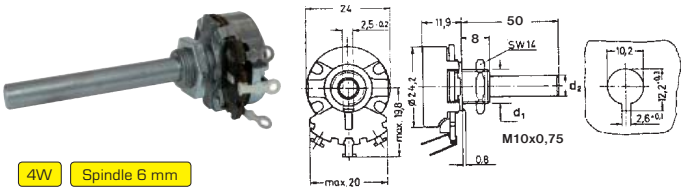
IP 67 3W Spindle 6 mm

Technical parameters		PE30K	
Spindle		6mm	
Resistance Taper		linear	
Power Rating		3W	
Electrical Travel		278±10°	
Mechanical Travel		300±5°	
Maximum Working Voltage		300V at 70°C	
Tolerance		±20%	
Manufact. Part Number		PE30 AL	
How to order		PE30K 1K	

Ohmic Value	LIN
1K	o 68795
4,7K	o 52025
10K	o 9568

Ohmic Value	LIN
47K	o 68794
100K	o 64845

### PD5W Series - Wirewound



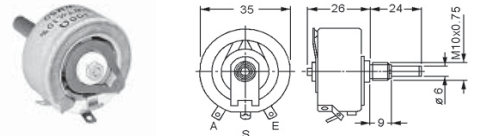
4W Spindle 6 mm

Technical parameters		PD5W	
Spindle		6mm	
Resistance Taper		linear	
Power Rating		4W at 40°C	
Electrical Travel		280±5°	
Mechanical Travel		300±10°	
Maximum Working Voltage		500V	
Resistance Tolerance		±10 (<10 Ohm ±20%)	
Package		5 pcs	
Manufact. Part Number		AW	
How to order		PD5W 1K	

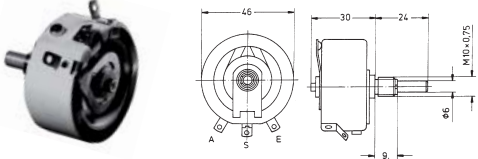
Ohmic Value	LIN
2,5R	o 68526
5,0R	o 68527
10R	o 60589
25R	o 68528
50R	o 68529
100R	o 6125
250R	o 9490

Ohmic Value	LIN
500R	o 9042
1K	s 6339
2,5K	s 2815
5K	s 3546
10K	s 3788
25K	o 8854

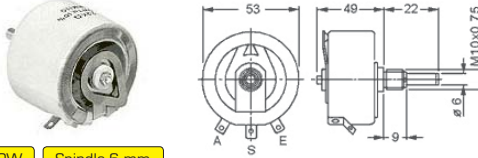
## PZD Series - Wirewound



10W Spindle 6 mm



30W Spindle 6 mm



60W Spindle 6 mm

Technical parameters		PZD10	PZD30	PZD60
Spindle Ø/l		6mm/15mm	6mm/15mm	6mm/13mm
Resistance Taper			linear	
Power Rating at 40°C		10W	30W	60W
Electrical Travel		250°	270°	262°
Mechanical Travel		266°	287°	282°
Maximum Working Voltage			2000V	
Resistance Tolerance			±10%	
Dimensions		D35xM10mm	D46xM10mm	D53xM10
Manufact. Part Number		E10W	E30W	E60W
How to order		PZD10W 1K	PZD30W 1K	PZD560W 1K

Ohmic Value	PZD10	PZD30	PZD60
10R	o 68777	o 60312	o 68786
22R	o 68778	o 68783	o 68787
47R	o 68779	o 68784	o 68788
100R	o 55512	o 45459	o 61423
220R	o 65561	o 7816	o 68789
470R	o 68780	o 59374	o 68790
1K	o 59775	o 3479	o 68791
2,2K	o 68781	o 68785	o 68792
4,7K	o 59405	o 44754	o 68793
10K	o 68782	o 4649	

## Encoders with Push-On Switch

# ALPS

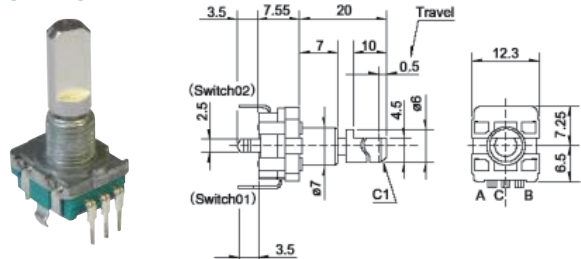
### Features:

- Compact and highly reliable, sliding contact type.
- 4.5mm-body height with a 1.5mm-travel push switch is available.
- Incremental type.

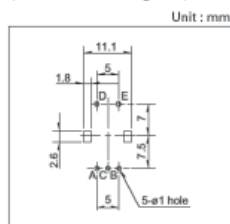
### Applications:

- Level controls for car audio and car navigation system.
- Various controls for devices in automotive
- Controls for image/sound devices, including DVD players, mini component stereos, CD players and portable audio players

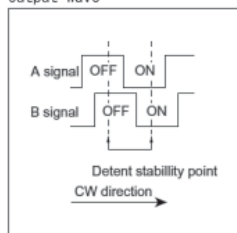
### EC11B15244A7



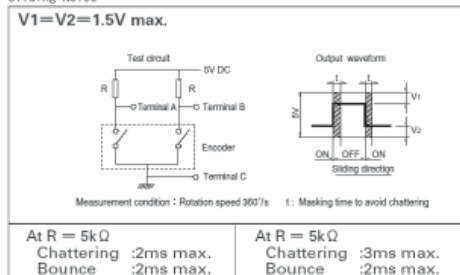
PC board Mounting Hole Dimensions (Viewed from Mounting Face)



Output Wave



Sliding Noise



Technical parameters	EC11B15244A7
Spindle (diameter/length)	6mm/20mm, metal
Number of detent	30
Resolution	15
Travel	0,5mm
Rating	5Vdc/10mA
Rating of Switch	16Vdc/3A
Operating life	15000 cycles

Part No.	Ord.No
S EC11B15244A7	56494

## STEC Series - 11mm



B01...02

B03...04

B09

B13

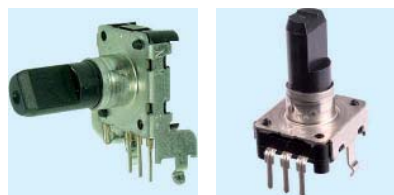
Technical parameters	STEC 11B
Size	11x11mm
Travel	0,5mm
Rating	5Vdc/ 10mA
Rating of Switch	16Vdc/3A

Part No.	Description
STEC11B01	Horiz. 15pulses/30detens, Spindle:6/25mm-slotted, Push-On Switch
STEC11B02	Horiz. 15pulses/30detens, Spindle:6/25mm-slotted
STEC11B03	Vertic.15pulses/30detens, Spindle:6/25mm-slotted, Push-On Switch
STEC11B04	Vertical 115pulses/30detens, Spindle:6/25mm-slotted
STEC11B09	Horiz. 20pulses/20detens, Spindle: 6/20mm flat, Push-On Switch
STEC11B13	Vertical 20pulses/20detens, Spindle: 6/20mm flat

Part No.	Ord.No
S STEC11B01	70226
S STEC11B02	70227
S STEC11B03	70228
S STEC11B04	70229
S STEC11B09	70230
S STEC11B13	70231

## STEC Series -12mm

# ALPS



Technical parameters	STEC 12E
Size	12x12mm
Travel	0,5mm
Rating	5Vdc/ 0,5mA
Rating of Switch	5Vdc/1mA

Part No.	Description
STEC12E05	Horiz. 24pulses/24detens, Spindle: 6/20mm flat
STEC12E06	Horiz. 24pulses/24detens, Spindle: 6/20mm flat, Push-On Switch
STEC12E07	Vertical 24pulses/24detens, Spindle: 6/20mm flat
STEC12E08	Vertical 24pulses/24detens, Spindle: 6/20mm flat, Push-On Switch

Part No.	Ord.No
O STEC12E05	70232
O STEC12E06	70233
S STEC12E07	70234
S STEC12E08	70235

## Knobs

### KN 1 Series



4 mm

Technical parameters	KN 1-H	KN 1-V
Description	push-on plastic knob	
for Spindle	4mm	
Diameter	16mm	
Height	15mm	
Version	smooth	knurled
Colour	black	
Package	50 pcs	

Part No.	Ord. No.
S KN 1-H	48419
S KN1-V	48420

### GDK1404 Series

Technical parameters	GDK-1404	GDK-1406
Description	push-on plastic knob	
for Spindle	4mm	6mm
Diameter	14,5mm/10,5mm	
Height	12,5mm	



4 mm

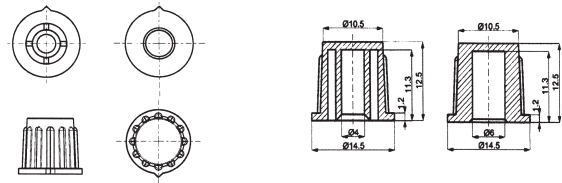
Part No.	Ord.No	Spindle	Body	Cap	Line
S GDK-1404BK	5883	4mm	black	black	-
S GDK-1404BU	5882	4mm	blue	blue	-
S GDK-1404RD	5884	4mm	red	red	-
O GDK-1404GR	64592	4mm	grey	grey	-



4 mm

Part No.	Ord.No	Spindle	Body	Cap	Line
O GDK-1404BK/GR-L	64594	4mm	black	black	grey
O GDK-1404BK/GR-C	64596	4mm	black	grey	black
O GDK-1404BK/BU-L	64598	4mm	black	black	blue
O GDK-1404BK/BU-C	64600	4mm	black	blue	black
O GDK-1404BK/RD-L	64602	4mm	black	black	red
O GDK-1404BK/RD-C	64604	4mm	black	red	black
O GDK-1404BK/YE-L	64606	4mm	black	black	yellow
O GDK-1404BK/YE-C	64608	4mm	black	yellow	black
O GDK-1404BK/GN-L	64610	4mm	black	black	green
O GDK-1404GR/BK-L	64614	4mm	grey	grey	black
O GDK-1404BK/GN-C	64612	4mm	black	green	black
O GDK-1404GR/BK-C	64616	4mm	grey	black	grey
O GDK-1404BU/BK-L	64618	4mm	blue	blue	black
O GDK-1404BU/BK-C	64620	4mm	blue	black	blue
O GDK-1404RD/BK-L	64622	4mm	red	red	black
O GDK-1404RD/BK-C	64624	4mm	red	black	red

### GDK1406 Series



Technical parameters	GDK-1404	GDK-1406
Description	push-on plastic knob	
for Spindle	4mm	6mm
Diameter	14,5mm/10,5mm	
Height	12,5mm	



6 mm

Part No.	Ord.No	Spindle	Body	Cap	Line
O GDK-1406BK	48130	6mm	black	black	-
O GDK-1406RD	48129	6mm	red	red	-
O GDK-1406BU	64591	6mm	blue	blue	-
O GDK-1406GR	64593	6mm	grey	grey	-



6 mm

Part No.	Ord.No	Body	Cap	Line
O GDK-1406BK/GR-L	64595	black	black	grey
O GDK-1406BK/GR-C	64597	black	grey	black
O GDK-1406BK/BU-L	64599	black	black	blue
O GDK-1406BK/BU-C	64601	black	blue	black
O GDK-1406BK/RD-L	64603	black	black	red
O GDK-1406BK/RD-C	64605	black	red	black
O GDK-1406BK/YE-L	64607	black	black	yellow
O GDK-1406BK/YE-C	64609	black	yellow	black
O GDK-1406BK/GN-L	64611	black	black	green
O GDK-1406BK/GN-C	64613	black	green	black
O GDK-1406GR/BK-L	64615	grey	grey	black
O GDK-1406GR/BK-C	64617	grey	black	grey
O GDK-1406BU/BK-L	64619	blue	blue	black
O GDK-1406BU/BK-C	64621	blue	black	blue
O GDK-1406RD/BK-L	64623	red	red	black
O GDK-1406RD/BK-C	64625	red	black	red

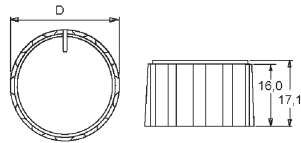
### Reducer 6mm/4mm



Part No.	Ord.No
S KR6-4	5825



## DKN Series

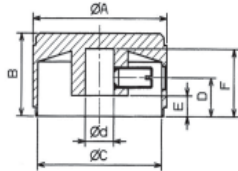


6 mm

Technical parameters		DKN...
Description	push-on plastic knob, 2-piece set	
Spindle	6 mm	
Diameter	see the table	
Height	17,1mm	
Colour	black with white line	
Package	100 pcs	

Part No.	Ord.No	Diameter
S DKN1301SW	5242	13,5mm
S DKN1501SW	5245	15,5mm
S DKN1801SW	5249	18,5mm
S DKN2101SW	5255	21,5mm
S DKN2801SW	5254	28,5mm
S DKN3601SW	5253	36,5mm
S DKN4301SW	5252	43,5mm

## ADK Series - anodized

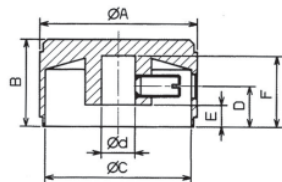
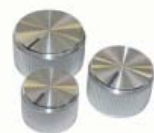


6 mm

Technical parameters		ADK20	ADK28
Description	solid aluminium, fluted sides, grub screw fixing		
Spindle Ø d	6 mm		
Knob Diameter Ø A	20mm	28mm	
Diameter Ø C	18mm	26mm	
Height (B)	14mm	16mm	
Dimensions D/E/F	7,5/3,5/12mm	7,5/4/13mm	
Colour	silver with black line black with silver line (SW)		

Part No.	Orig.part No	Ord.No
S ADK 20 M	507.611	29422
S ADK 20 MSW	507.6131	29424
S ADK 28 M	509.611	68827
S ADK 28 MSW	509.6131	68828

## MADK Series - protective finish

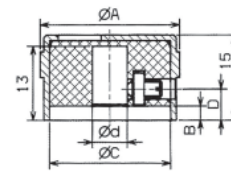


6 mm

Technical parameters		MADK20	MADK24	MADK28
Description	solid aluminium, fluted sides, grub screw fixing			
Spindle Ø d	6 mm			
Knob Diameter Ø A	20mm	24mm	28mm	
Diameter Ø C	18mm	21,5mm	26mm	
Height (B)	14mm	15mm	16mm	
Dimensions D/E/F	7,5/3,5/12mm	7,5/4/12mm	7,5/4/13mm	
Colour	silver with black line			

Part No.	Orig.part No	Ord.No
S MADK 20	5553.6612	68818
S MADK 24	5554.6612	68819
S MADK 28	5555.6612	68820

## MADK\_SR Series - protective finish



6 mm

Technical parameters		MADK20	MADK24
Description	solid aluminium, grub screw fixing		
Spindle Ø d	5,5 mm		
Knob Diameter Ø A	20mm	24mm	
Diameter Ø C	17mm	21mm	
Height	15mm		
Dimensions B/D	2,5/6mm		
Colour	silver with black line		

Part No.	Orig.part No	Ord.No
S MADK 20 SR	5616.6614	68822
S MADK 24 SR	5617.6614	68823

## Knob Set 11



11- Piece Knob Set for 6mm Spindle.  
Diameter x Height:  
10x16mm 13x17mm  
15x17mm 17x17mm  
21x17mm 23x17mm  
26x17mm 30x17mm  
32x17mm 40x17mm  
48x17mm  
KNOB SET 11 - silver  
KNOB SET 11 BK - black

6 mm

Part No.	Ord.No
S KNOB SET 11	72017
S KNOB SET 11 BK	72016

## AKK Series

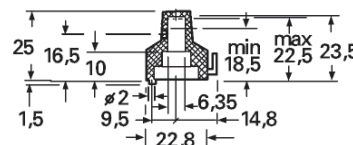


6 mm

Technical parameters		AKK20	AKKK24
Description	aluminium knob with wing		
Spindle Ø d	6 mm		
Knob Diameter Ø A	20,5mm	24,5mm	
Height	17,3mm	19mm	
Colour	silver with black line or black with silver line		

Part No.	Ord.No
S AKK 20 (silver)	70599
S AKK 20 BK (black)	70600
S AKK 24 (silver)	70601
S AKK 24 BK (black)	70602

## KNOPF 635 Series



6,35 mm

Technical parameters		KNOPF 636
Description	5-turn, with locking device and bushing	
Spindle	6,35mm	
Diameter	22,8mm	
Height	25mm	
Colour	black	
Package	5 pcs	

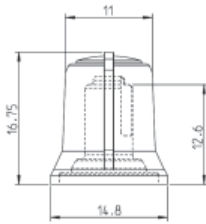
Part No.	Ord.No
S KNOPF635	29799

## Knobs (continued)

### P300 Series



6 mm



One Piece /Three color knob in hard or soft-touch plastics with a raised solid marker line Fit on D flat or 6mm spline shafts.  
Package 1000 pcs

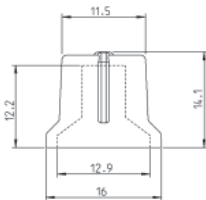
Part No.	Diameter	Body	Cap	Line
P300-S-028-S6	14.8mm	black	grey	red
P300-S-098-S6	14.8mm	black	grey	white

Part No.	Ord.No
S P300-S-098-S6	52986
S P300-S-028-S6	52987

### P670 Series



6 mm



One Piece /Low-profile, two color control knob with integral nut cover Fit on D flat or 6mm spline shafts.  
Package 1000 pcs.

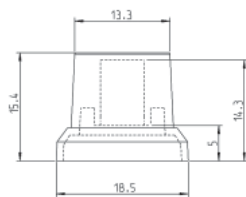
Part No.	Diameter	Body	Line
P670-S-02-S6	16mm	black	red
P670-S-09-S6	16mm	black	white
P670-S-82-S6	16mm	grey	red
P670-S-89-S6	16mm	grey	white

Part No.	Ord.No
S P670-S-09-S6	4255
S P670-S-82-S6	4256
S P670-S-89-S6	4257
S P670-S-02-S6	4423

### P890 Series



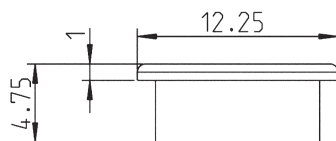
6 mm



Two Pieces /Low-profile, control knob Fit on 6mm spline shaft. Siutable Cap - see T861 Series  
Package 1000 pcs.

Part No.	Ord.No
S P890-H-0-S6	52988

### T861 Series



Slightly raised (domed) top - cap. Siutable for P890 Series.  
Package 1000 pcs.

Part No.	Diameter	Body	Line
T861-H-09	12,5mm	black	white
T861-H-29	12,5mm	red	white
T861-H-0X	12,5mm	black	-

Part No.	Ord.No
S T861-H-09	53059
S T861-H-29	53060
S T861-H-0X	53061

## Sliders

### KNOPF LK151 Series



6x2 mm



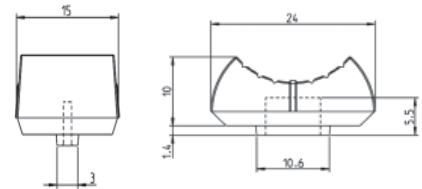
Technical parameters	KNOPF LK151
Description	15mm wide, two color slider knob, plastic
For Shaft	6x2mm
Dimensions (LxWxH)	24x15x10mm
Colour	black with white line
Package	25 pcs

Part No.	Ord.No
S KNOPFLK151	29434

### S778 Series



8x1,2 mm



Technical parameters	S778-H-29-K	S778-H-90-K
Description	15mm wide slider knob	
For Shaft	8x1,2 mm	
Dimensions (LxWxH)	24x15x10mm	
Colour	red with white line	white with red line
Package	5 pcs	

Part No.	Ord.No
S S778-H-29-K	4418
S S778-H-90-K	4419

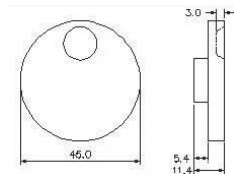
## Rotary Knobs for Encoders

### DK 45-114 Series

# ALPS



6 mm



Technical parameters	DK45-114
Description	6mm flatted round knob with Top Indicator, plastic ABS
For Shaft	6mm
Diameter / Height	45mm/11,5mm
Colour	black
Package	25 pcs

Part No.	Ord.No
S DK45-114	70943

## Ceramic Chip Capacitors

Temperature characteristics codes for class I ceramic capacitors.

**COG**

Temperature coefficient value

Multiplier

Temperature coefficient tolerance

PPM	Symbol	Multiplier	Symbol	PPM	Symbol
0.0	C	-1	0	±30	G
0.3	B	-10	1	±60	H
0.9	A	-100	2	±120	J
1.0	M	-1000	3	±250	K
1.5	P	-100000	4	±500	L
2.2	R	+1	5	±1000	M
3.3	S	+10	6	±2500	N
4.7	T	+100	7		
7.5	U	+1000	8		
		+10000			

Temperature characteristics codes for class II and III ceramic capacitors.

**Y5V**

Minimum limit temperature

Maximum limit temperature

Maximum capacitance change

°C	Symbol	°C	Symbol	%	Symbol
+10°C	Z	+45°C	2	±1,0%	A
-30°C	Y	+60°C	4	±1,5%	B
-55°C	X	+85°C	5	±2,2%	C
		+105°C	6	±3,3%	D
		+125°C	7	±4,7%	E
		+150°C	8	±7,5%	F
		+200°C	9	±10,0%	P
				±15,0%	R
				±22,0%	S
				+22/-33%	T
				+22/-56%	U
				+22/-82%	V

SOS electronic - distributor of

# YAGEO

**NPO**  
Ceramic Chip Capacitors

**GENERAL PURPOSE CAPACITORS**  
Size: from 0402 to 1812  
Capacitance range: from 0,47pF to 33nF  
Capacitance tolerance:  
C<10pF: 0,1pF, 0,25pF, 0,5pF  
C>10pF: ±1%, ±2%, ±5%  
Max. rated voltage:  
16Vdc up to 4000Vdc  
Operating temp. range: -55°C to +125°C

**Y5V**  
Ceramic Chip Capacitors

**GENERAL PURPOSE CAPACITORS**  
**HIGH CAPACITANCE**  
Size: from 0402 to 1210  
Capacitance range: from 10nF to 47uF  
Capacitance tolerance:  
±20%, ±20% to 80%  
Max. rated voltage:  
6,3Vdc, 50Vdc  
Operating temp. range: -25°C to +85°C

**SMD capacitor arrays**

Size :0405, 0508, 0612  
Capacitance range: from 10pF to 100nF  
Capacitance tolerance:  
NPO: ±5%, ±10%  
X7R: ±10%, ±20%  
Y5V: -20% to 80%  
Max. rated voltage:  
16Vdc up to 50Vdc

**X5R**  
Ceramic Chip Capacitors

**HIGH CAPACITANCE**  
Size: from 0402 to 1812  
Capacitance range: from 100nF to 100uF  
Capacitance tolerance:  
±10%, ±20%  
Max. rated voltage:  
6,3Vdc up to 25Vdc  
Operating temp. range: -55°C to +85°C

**X7R**  
Ceramic Chip Capacitors

**GENERAL PURPOSE CAPACITORS**  
**HIGH CAPACITANCE**  
**LOW INDUCTANCE**  
Size: from 0402 to 1812  
Capacitance range: from 100nF to 4,7uF  
Capacitance Tolerance:  
±5%, ±10%, ±20%  
Max. rated voltage:  
10Vdc up to 3000Vdc  
Operating temp. range: -55°C to +125°C

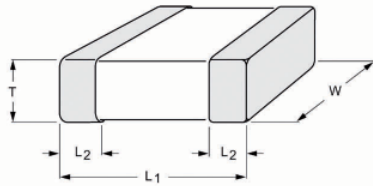
**Ultra small**  
Chip Capacitors

Size :01005, 0201  
Capacitance range: from 1pF to 100nF  
Capacitance tolerance:  
NPO: ±2%, ±5%  
X5R/X7R: ±10%, ±20%  
Y5V: -20% to 80%  
Max. rated voltage:  
6,3Vdc up to 50Vdc

## Ceramic SMD Capacitors

### 0402 Series

**YAGEO**

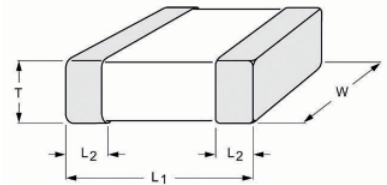


Technical parameters	K0402
Size	0402
Tolerance	±10%
Operating temp. range	-55°C to +125°C
Rated voltage	10V, 16V, 25V, 50V
Dimensions L <sub>1</sub> xWxT, L <sub>2</sub>	1x0,5x0,5mm, 0,225mm
Package	reel : 10 000 pcs
Ordering code	K0402 22pF 50V NPO

Capacitance	Dielectric	Ord.No.
<b>50V</b>		
○ 1pF	NPO	68125
○ 1,5pF	NPO	68126
○ 2,2pF	NPO	68128
○ 3,3pF	NPO	64117
○ 4,7pF	NPO	68130
○ 6,8pF	NPO	68131
○ 10pF	NPO	55345
○ 15pF	NPO	64118
○ 22pF	NPO	55340
○ 33pF	NPO	64119
○ 47pF	NPO	64120
○ 68pF	NPO	68132
○ 100pF	NPO	52339
○ 150pF	NPO	68127
○ 220pF	NPO	68129
○ 220pF	X7R	68139
○ 330pF	X7R	68140
○ 470pF	X7R	68142
○ 680pF	X7R	68144
○ 1000pF	X7R	68138
○ 1500pF	X7R	63329
○ 2200pF	X7R	62724
○ 3300pF	X7R	68141
○ 4700pF	X7R	68143
○ 6800pF	X7R	68145
○ 0,01uF	X7R	64122
<b>25V</b>		
○ 0,022uF	X7R	68137
<b>16V</b>		
○ 0,015uF	X7R	68135
○ 0,033uF	X7R	68136
○ 0,1uF	X7R	64123
○ 0,1uF	Y5V	68148
<b>10V</b>		
○ 0,047uF	X7R	68133
○ 0,068uF	X7R	68134
○ 0,22uF	Y5V	68146
○ 0,47uF	Y5V	68147

### 0603 Series

**YAGEO**

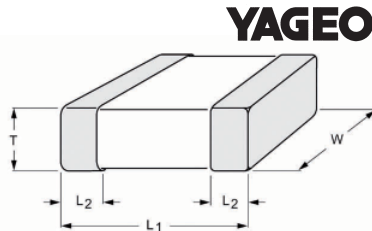


Technical parameters	K0603
Size	0603
Tolerance	±10%
Operating temp. range	-55°C to +125°C
Rated voltage	10V, 16V, 50V
Dimensions L <sub>1</sub> xWxT, L <sub>2</sub>	1,6x0,8x0,8mm, 0,35mm
Package	reel : 4000 pcs
Ordering code	K0603 22pF 50V NPO

Capacitance	Dielectric	Ord.No.
<b>50V</b>		
S 1pF	NPO	36807
S 1,5pF	NPO	41074
S 2,2pF	NPO	36811
S 3,3pF	NPO	36813
S 4,7pF	NPO	36815
S 6,8pF	NPO	41075
S 10pF	NPO	36819
S 15pF	NPO	36821
S 22pF	NPO	36823
S 33pF	NPO	36825
S 47pF	NPO	36827
S 68pF	NPO	36829
S 100pF	NPO	36831
S 150pF	NPO	36833
S 220pF	NPO	36835
S 330pF	NPO	36837
S 470pF	NPO	36839
S 680pF	NPO	46199
S 1nF	X7R	36927
S 1,5nF	X7R	36929
S 2,2nF	X7R	36931
S 3,3nF	X7R	36933
S 4,7nF	X7R	36935
S 6,8nF	X7R	36937
S 10nF	X7R	41078
S 15nF	X7R	46207
S 22nF	X7R	46209
S 100nF	X7R	56749
<b>16V</b>		
S 33nF	X7R	46201
S 47nF	X7R	46203
S 68nF	X7R	46205
S 100nF	X7R	44762
S 470nF	Y5V	46214
<b>10V</b>		
S 220nF	X7R	46200

Descriptions of the particular dielectrics are available on page A28.

## 0805 Series



**YAGEO**

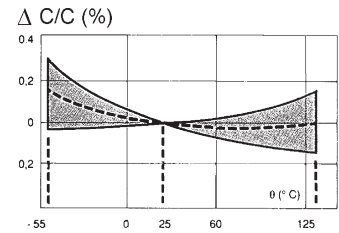
Technical parameters	K0805
Size	0805
Dimensions L <sub>1</sub> xWxT, L <sub>2</sub>	2x1,25x0,5+1,35mm, 0,4mm
Tolerance	NPO: ±5%, X7R: ±10%
Operating temperature range	-55°C to +125°C
Rated voltage	50V
Package	reel : 4000 pcs
Ordering code	K0805 22pF 50V NPO

Capacitance	Dielectric	Ord.No.
<b>50V</b>		
S 1pF	NPO	36840
S 1,2pF	NPO	36841
S 1,5pF	NPO	36842
S 1,8pF	NPO	36843
S 2,2pF	NPO	36844
S 2,7pF	NPO	36845
S 3,3pF	NPO	36846
S 3,9pF	NPO	36847
S 4,7pF	NPO	36848
S 5,6pF	NPO	36849
S 6,8pF	NPO	36850
S 8,2pF	NPO	36851
S 10pF	NPO	36852
S 12pF	NPO	36853
S 15pF	NPO	36854
S 18pF	NPO	36855
S 22pF	NPO	36856
S 27pF	NPO	36857
S 33pF	NPO	36858
S 39pF	NPO	36859
S 47pF	NPO	36860
S 56pF	NPO	36861
S 68pF	NPO	36862
S 82pF	NPO	36863
S 100pF	NPO	36864
S 120pF	NPO	36865
S 150pF	NPO	36866
S 180pF	NPO	36867
S 220pF	NPO	36868
S 270pF	NPO	36869
S 330pF	NPO	36870
S 390pF	NPO	36871
S 470pF	NPO	36872
S 560pF	NPO	36873
S 680pF	NPO	36874
S 820pF	NPO	36875
S 1nF	X7R	36945
S 1,2nF	X7R	36946
S 1,5nF	X7R	36947
S 2,2nF	X7R	36949
O 2,7nF	X7R	36950
S 3,3nF	X7R	36951
O 3,9nF	X7R	36952
S 4,7nF	X7R	36953
S 6,8nF	X7R	36955
S 10nF	X7R	36957
S 15nF	X7R	36959
S 22nF	X7R	36961

S 33nF	X7R	36963
S 47nF	X7R	36965
S 68nF	X7R	41010
S 100nF	X7R	40466

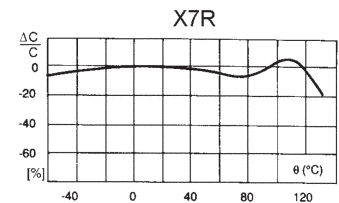
### NPO (COG)

Suitable for HF devices, oscillating circuits, filters, timing circuits and fast rise time circuits.  
Features: temperature stability, high insulation resistance, low insertion loss.



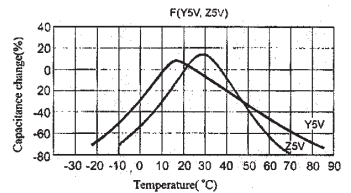
### X7R

Suitable for applications requiring stable electrical properties. These chips are designed for surface mount application with nickel barrier terminations suitable for solder wave, vapor phase or reflow solder board attachment. They are used as decoupling, bypass, filtering.  
Features: high volume capacitance, nonlinear capacitance change, high insulation resistance



### Y5V

Y5V dielectric offers the highest volumetric efficiency. Applications would include bypass and decoupling circuits where temperature dependence is not of major importance.

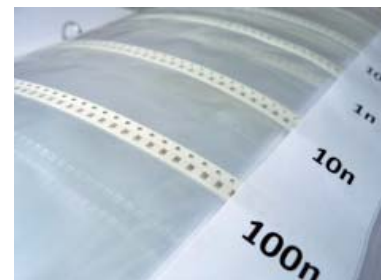


### CAPACITANCE CONVERSION TABLE

0,000 001 μF	=	0,001 nF	=	1 pF
0,000 01 μF	=	0,01 nF	=	10 pF
0,000 1 μF	=	0,1 nF	=	100 pF
0,001 μF	=	1 nF	=	1 000 pF
0,01 μF	=	10 nF	=	10 000 pF
0,1 μF	=	100 nF	=	100 000 pF
1 μF	=	1 000 nF	=	1 000 000 pF
10 μF	=	10 000 nF	=	10 000 000 pF
100 μF	=	100 000 nF	=	100 000 000 pF

We supply SMD capacitor kits for designing purposes.  
If you are interested, do not hesitate to contact us.

### SMD SET K0805



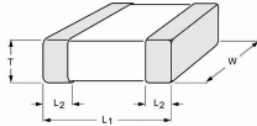
Set of 49 most common SMD capacitors 0805 size at 50 pcs each:  
1pF up to 820pF - E12 NPO  
1nF up to 100nF - E6 X7R  
All the capacitors are reel packed.

Part No.	Ord.No.	Description
S SMD SET K0805	51165	MLCC Designer Kit K0805

## Ceramic SMD Capacitors

(continued)

### 1206 Series



# YAGEO

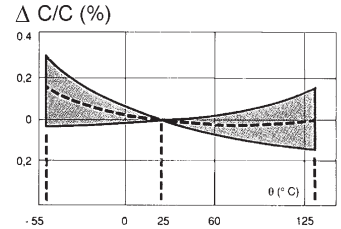
Technical parameters	K1206
Size	1206
Tolerance	NPO: $\pm 5\%$ , X7R: $\pm 10\%$
Operating temp. range	-55°C to +125°C
Rated voltage	50V
Dimensions L <sub>1</sub> xWxT, L <sub>2</sub>	3,20x1,60x0,5±1,25mm, 0,4mm
Package	reel : 4000 pcs
Ordering code	K1206 22pF 50V NPO

Capacitance	Ord.No.	Dielectric
<b>50V</b>		
S 1pF	36877	NPO
S 1,5pF	36879	NPO
S 1,8pF	36880	NPO
S 2,2pF	36881	NPO
S 2,7pF	36882	NPO
S 3,3pF	36883	NPO
S 3,9pF	31544	NPO
S 4,7pF	36884	NPO
S 5,6pF	36885	NPO
S 6,8pF	36886	NPO
S 8,2pF	36887	NPO
S 10pF	36888	NPO
S 12pF	36889	NPO
S 15pF	36890	NPO
S 18pF	36891	NPO
S 22pF	36892	NPO
S 27pF	36893	NPO
S 33pF	36894	NPO
S 39pF	36895	NPO
S 47pF	36896	NPO
S 56pF	36897	NPO
S 68pF	36898	NPO
S 82pF	36899	NPO
S 100pF	36900	NPO
S 120pF	36901	NPO
S 150pF	36902	NPO
S 180pF	36903	NPO
S 220pF	36904	NPO
S 270pF	36905	NPO
S 330pF	36906	NPO
S 390pF	36907	NPO
S 470pF	36908	NPO
S 560pF	36909	NPO
S 680pF	36910	NPO
S 820pF	36911	NPO
S 1nF	36972	X7R
O 1,2nF	36973	X7R
S 1,5nF	36974	X7R
S 1,8nF	36975	X7R
S 2,2nF	36976	X7R
S 3,3nF	36978	X7R
O 3,9nF	36979	X7R
S 4,7nF	36980	X7R
S 6,8nF	36982	X7R
S 10nF	36984	X7R
S 15nF	36986	X7R
S 22nF	36988	X7R
S 33nF	36990	X7R
S 47nF	36992	X7R

S 68nF	36994	X7R
S 100nF	36996	X7R
S 220nF	37009	Y5V
S 470nF	40719	Y5V
S 680nF	53950	Y5V
S 1uF	36797	Y5V
S 1uF (16V)	41312	X7R
S 2,2uF(10V)	46009	X7R

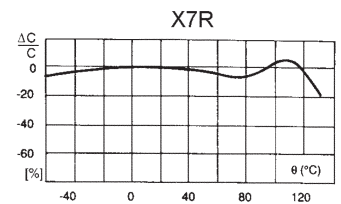
### NPO (COG)

**Class I capacitors:** Temperature compensating capacitors, suitable for resonant circuit application or other applications where high Q and stability of capacitance characteristics are required. Class I capacitors have predictable temperature coefficients and are not effected by voltage, frequency or time. They are made from materials which are not ferro-electric, yielding superior stability but low volumetric efficiency. Class I capacitors are the most stable type available, but have the lowest volumetric efficiency.



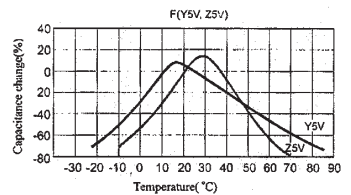
### X7R

**Class II capacitors:** Stable capacitors, suitable for bypass or coupling applications or frequency discriminating circuits where Q and stability of capacitance characteristics are not of major importance. Class II capacitors have temperature characteristics of  $\pm 15\%$  or less. They are made from materials which are ferro-electric, yielding higher volumetric efficiency but less stability. Class II capacitors are affected by temperature, voltage, frequency and time.



### Y5V

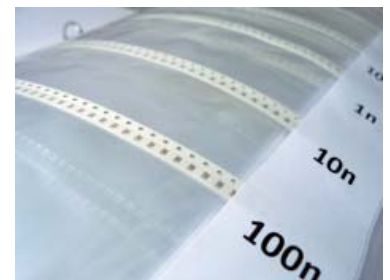
**Class III capacitors:** General purpose capacitors, suitable for by-pass coupling or other applications in which dielectric losses, high insulation resistance and stability of capacitance characteristics are of little or no importance. Class III capacitors are similar to Class II capacitors except for temperature characteristics, which are greater than  $\pm 15\%$ . Class III capacitors have the highest volumetric efficiency and poorest stability of any type.



### CAPACITANCE CONVERSION TABLE

0,000 001 μF	=	0,001 nF	=	1 pF
0,000 01 μF	=	0,01 nF	=	10 pF
0,000 1 μF	=	0,1 nF	=	100 pF
0,001 μF	=	1 nF	=	1 000 pF
0,01 μF	=	10 nF	=	10 000 pF
0,1 μF	=	100 nF	=	100 000 pF
1 μF	=	1 000 nF	=	1 000 000 pF
10 μF	=	10 000 nF	=	10 000 000 pF
100 μF	=	100 000 nF	=	100 000 000 pF

### SMD SET K1206



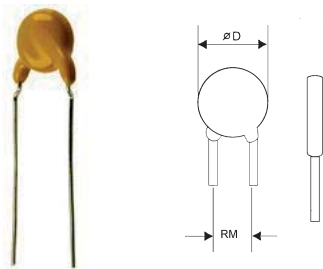
Set of 49 most common SMD capacitors 1206 size at 50 pcs each:  
 1pF up to 820pF - E12 NPO  
 1nF up to 100nF - E6 X7R  
 All the capacitors are reel packed.

Part No.	Ord.No.	Description
S SMD SET K1206	51166	MLCC Designer Kit K1206

## Ceramic Capacitors Leaded 2,54mm

### CDC Series

ECONOMIC



Technical parameters	CDC
Pitch	2,54mm
Lead length	17 up to 20 mm
Rated voltage	50V
Tolerance:	
1pF-4,7pF	$\pm 0,5pF$
10pF-47pF	$\pm 5\%$
100pF-4700pF	$\pm 10\%$
Package	1000 pcs bulk
Ordering code	CDC 1pF NPO

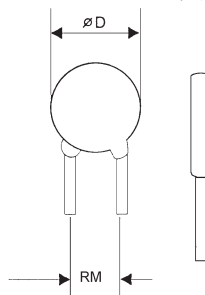
Capacitance	Ord.No.	Dielectric
S 1pF	43519	NPO
S 1,2pF	47681	NPO
S 1,5pF	43520	NPO
S 2,2pF	43521	NPO
S 2,7pF	47682	NPO
S 3,3pF	46661	NPO
S 3,9pF	48691	NPO
S 4,7pF	43522	NPO
S 5,6pF	48692	NPO
S 6,8pF	46662	NPO
S 8,2pF	47683	NPO
S 10pF	43523	NPO
S 12pF	53798	NPO
S 22pF	43524	NPO
S 27pF	53800	NPO
S 47pF	43525	NPO
S 82pF	48693	NPO
S 100pF	43526	Y5E
S 120pF	53799	NPO
S 150pF	48694	NPO
S 220pF	43527	Y5E
S 470pF	43528	Y5E
S 1000pF	43529	Y5P
S 2200pF	43530	Y5P
S 4700pF	43531	Y5P

For the latest information visit  
[www.soselectronic.com](http://www.soselectronic.com).

## Ceramic Chip Capacitors Leaded 5,08mm

### CDC5 Series

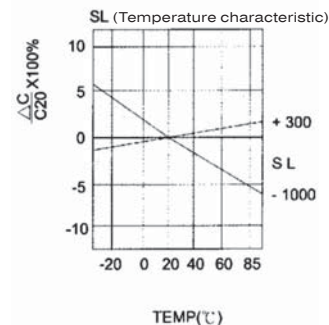
ECONOMIC



500V

Technical parameters	CDC5
Pitch	5,08 mm
Rated voltage	500 V
Tolerance	$\pm 20\%$
Packaging	1000 pcs
Ordering code	CDC5 1pF NPO

Capacitance	Ord.No.	Dielectric
S 1pF	56200	P100
S 1,5pF	56201	P100
S 2,2pF	56202	NPO
S 3,3pF	56203	NPO
S 4,7pF	56204	NPO
S 6,8pF	56205	NPO
S 10pF	56206	NPO
S 15pF	56207	NPO
S 22pF	56208	NPO
S 33pF	56209	SL
S 47pF	56210	SL
S 68pF	56211	SL
S 100pF	56213	SL
S 150pF	56214	Y5P
S 220pF	56215	Y5P
S 330pF	56216	Y5P
S 470pF	56217	Y5P
S 680pF	56218	Y5P
S 1000pF	56219	Y5P



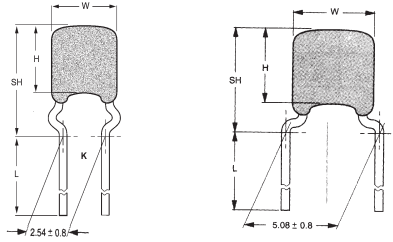
More information  
needed?

electroniconline

www.soselectronic.com

## Multilayer Ledged Ceramic Capacitors

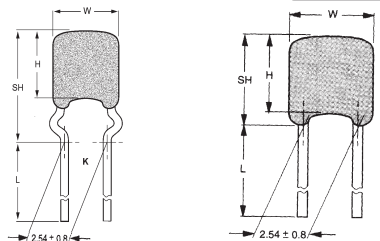
### KDPU Series



Technical parameters	KDPU
Rated voltage (DC)	50V
Tolerance	±20%
Insulation Resistance	100GΩ
Dissipation Factor	<4%
Operating temperature range	Y5V: -30°C ... +85°C Z5U: +10°C ... +85°C
Packaging	1000 pcs
Ordering code	KDPU Y5V RM5 0,22uF

Capacitance	Dielectric	Size	Ord.No.
<b>RM=2,54mm</b>			
S 10nF	Y5V	15	19862
S 15nF	Y5V	15	25038
S 22nF	Y5V	15	19863
S 33nF	Y5V	15	25039
S 47nF	Y5V	15	19864
S 68nF	Y5V	15	25040
S 100nF	Y5V	15	33068
S 100nF	X7R	15	19859
S 220nF	Y5V	15	19866
<b>RM=5,08mm</b>			
S 10nF	Y5V	15	19867
S 15nF	Y5V	15	25035
S 22nF	Y5V	15	19868
S 33nF	Y5V	15	25036
S 47nF	Y5V	15	19869
S 68nF	Y5V	15	25037
S 100nF	Y5V	15	33069
S 100nF	X7R	20	25034
S 220nF	Y5V	15	19871
S 470nF	Y5V	20	19872
S 1uF	Z5U	30	19873

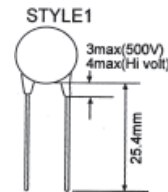
### KERKO Series



Technical parameters	KERKO
Dielectric type	Y5V
Rated voltage (DC)	50V
Tolerance	± 20%
Operating temperature range	-30°C ... +85°C
Packaging	1000 pcs
Ordering code	KERKO 0,22uF Y5V RM2,5

Capacitance	Dielectric	Ord.No.
<b>RM=2,54mm</b>		
S 10nF	Y5V	43901
S 15nF	Y5V	46650
S 22nF	Y5V	46651
S 33nF	Y5V	49023
S 47nF	Y5V	46652
S 68nF	Y5V	46653
S 100nF	Y5V	43900
S 220nF	Y5V	46654
<b>RM=5,08mm</b>		
S 10nF	Y5V	43898
S 22nF	Y5V	46655
S 33nF	Y5V	46656
S 47nF	Y5V	46657
S 68nF	Y5V	46658
S 100nF	Y5V	43899
S 220nF	Y5V	46659
S 470nF	Y5V	46660

## High Voltage Ledged Ceramic Capacitors



Technical parameters	DISC 3000
Rated voltage	3000V DC
Dielectric	Z5U
Operating temperature range	-30 ... +85°C
Packaging	1000 pcs
Ordering code	DISC 3000 100pF

Capacitance	RM	Toler.	Ord.No.
O 100pF	5	±10%	45289
O 150pF	5	±10%	44574
O 220pF	5	±10%	45413
O 270pF	5	±10%	45414
O 330pF	5	±10%	44980
O 470pF	7,5	±10%	45288
O 680pF	7,5	±10%	45415
O 1000pF	7,5	±20%	43845
O 1200pF	7,5	±20%	45416
S 1500pF	7,5	±20%	45417
O 3300pF	7,5	±20%	45419
O 4700pF	9,5	±20%	32390
S 0,01uF	9,5	±20%	42813





capacitors



#### SMD Capacitors

Size codes 1812-6054 and capacitance values from 0.01  $\mu\text{F}$  through 6.8  $\mu\text{F}$  with PET, PEN and PPS dielectric.



#### SNUBBER Capacitors

Developed for high-power converter technology, WIMA Polypropylene snubber capacitors are available in manifold connecting configurations.



#### SUBMINIATURE Capacitors in PCM 2.5 mm

WIMA subminiature capacitors are available in metallized or film/foil version with capacitances up to 1.0  $\mu\text{F}$ .



#### GTO Capacitors

WIMA Polypropylene GTO capacitors are especially designed to attenuate voltage spikes on GTO-Thyristors and IGBT.



#### Capacitors in PCM 5 mm

With capacitances up to 22  $\mu\text{F}$  and voltage ranges up to 1000 VDC the WIMA capacitors in PCM 5 mm covers a wide field of applications.



#### DC-LINK Capacitors

Intermediate circuit capacitors in manifold connecting configurations with capacitances up to 4500  $\mu\text{F}$  and voltage ranges up to 1600 VDC for applications in high-power converter technology.



#### FILM/FOIL Capacitors in PCM 7.5 - 15 mm

Polyester, Polypropylene and Mixed Dielectric capacitors for pulse applications with capacitances up to 0.22  $\mu\text{F}$  and voltage ranges up to 1000 VDC.



#### RFI Capacitors

Interference suppression capacitors with Polypropylene or Metallized Paper dielectric classes X2, X1 or Y2.



#### METALLIZED Capacitors in PCM 7,5 mm to 37,5mm

Self-healing Polyester, Polypropylene and Mixed Dielectric capacitors up to 220  $\mu\text{F}$  with voltage ranges up to 2000 VDC



#### SUPER CAP

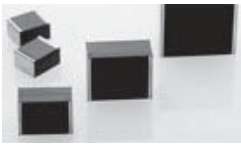
Double-layer storage capacitors with highest capacitance values in the Farad range suitable for support, protection or replacement of batteries in traction systems.



#### PULSE Capacitors

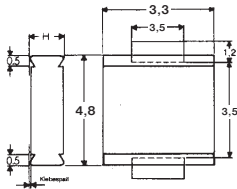
Designed for extremely high pulse loads this reliable, self-healing Polypropylene capacitors are available with voltage ranges up to 6000 VDC.

## Foil SMD Capacitors



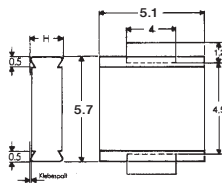
Technical parameters	FS
Dielectric	polyester film
Capacitance	0,01uF up to 6,8uF
Rated voltage	63V <sub>dc</sub> 100V <sub>dc</sub> 250V <sub>dc</sub> 400V <sub>dc</sub> 630V <sub>dc</sub> 1000V <sub>dc</sub>
Tolerance	±20%, ±10%,
Operating temp. range	-55...+100°C
Test voltage	1,6Ur, 2s
Operational life	> 300 000 hours
Features	self-healing
Applications	DC-applications, by-pass, coupling, decoupling
Packaging	reel: 3000 pcs
Ordering code	FS 1uF 63V 2824

## FS 1812 Series



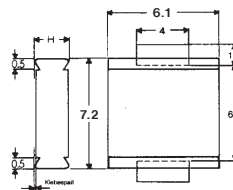
Capacitance	Dimensions	Ord.No.
<b>63V</b>		
0,01uF	4,8x3,3x3mm	51057
0,015uF	4,8x3,3x3mm	68392
0,022uF	4,8x3,3x3mm	68393
0,033uF	4,8x3,3x3mm	68394
0,047uF	4,8x3,3x3mm	68395
0,068uF	4,8x3,3x3mm	68396
0,1uF	4,8x3,3x3mm	68397
0,15uF	4,8x3,3x3mm	68398
0,22uF	4,8x3,3x3mm	68399
0,33uF	4,8x3,3x3mm	68400
0,47uF	4,8x3,3x3mm	68401

## FS 2220 Series



Capacitance	Dimensions	Ord.No.
<b>63V</b>		
1uF	5,7x5,1x4,5mm	51058
<b>100V</b>		
0,01uF	5,7x5,1x3,5mm	68402
0,015uF	5,7x5,1x2,5mm	68403
0,015uF	5,7x5,1x3,5mm	68516
0,022uF	5,7x5,1x3,5mm	58131
0,033uF	5,7x5,1x3,5mm	68404
0,047uF	5,7x5,1x3,5mm	58132
0,068uF	5,7x5,1x3,5mm	68405
0,1uF	5,7x5,1x3,5mm	58133
0,15uF	5,7x5,1x3,5mm	68406
0,22uF	5,7x5,1x3,5mm	68407
0,47uF	5,7x5,1x3,5mm	68408

## FS 2824 Series



Capacitance	Dimensions	Ord.No.
<b>63V</b>		
0,1uF	7,2x6,1x3mm	68422
0,15uF	7,2x6,1x3mm	68423
0,22uF	7,2x6,1x3mm	68424
0,33uF	7,2x6,1x3mm	40128
0,47uF	7,2x6,1x3mm	68425
1uF	7,2x6,1x3mm	68426
1,5uF	7,2x6,1x5mm	68427
2,2uF	7,2x6,1x5mm	68428
<b>100V</b>		
0,015uF	7,2x6,1x2mm	68409
0,015uF	7,2x6,1x3mm	68515
0,022uF	7,2x6,1x2mm	68410
0,022uF	7,2x6,1x3mm	68411
0,033uF	7,2x6,1x3mm	68412
0,047uF	7,2x6,1x2mm	68413
0,047uF	7,2x6,1x3mm	68414
0,068uF	7,2x6,1x3mm	68415
0,1uF	7,2x6,1x3mm	68416
0,15uF	7,2x6,1x3mm	68417
0,22uF	7,2x6,1x3mm	68418
0,47uF	7,2x6,1x5mm	68419
0,68uF	7,2x6,1x5mm	68420
1uF	7,2x6,1x5mm	68421

## SMD Set - WIMA



Wima set of foil SMD capacitors with capacitance from 0,01uF to 6,8uF (voltage from 63VDC to 1000VDC) and size codes 1812, 2220, 2824, 4030, 5040 and 6054

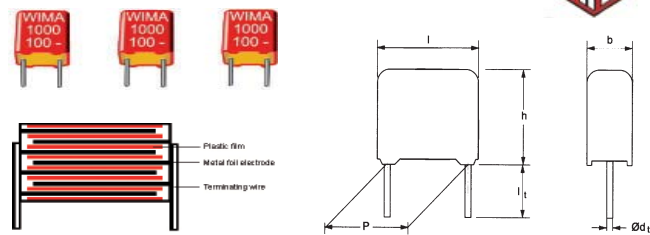
Part No.	Ord.No.	Description
0 SMD1812/2220/2824	70342	set 16x10 pcs
0 SMD4030/5040/6054	70343	set 15x5 + 2x3 pcs

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## Foil Ledged Capacitors

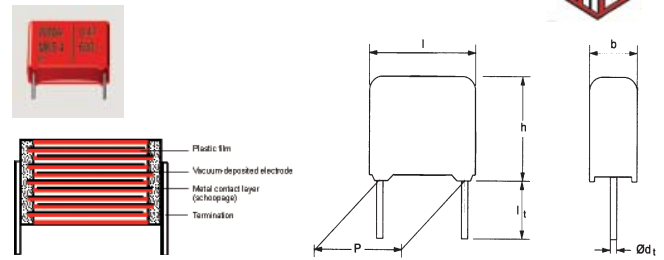
### FKS Series



Technical parameters	FKS2	FKS3
Dielectric	polyester	
Capacitance	1000 pF up to 0,015 µF	
Pitch	5mm	10mm
Max. operating voltage	100V <sub>dc</sub> / 63V <sub>ac</sub> , 400V <sub>dc</sub> / 200V <sub>ac</sub>	400V <sub>dc</sub> / 250V <sub>ac</sub>
Tolerance	± 20%	
Operating temp. range	-55...+100°C	
Test voltage	2Ur, 2s	
Operational life	> 300 000 hours	
Features	Construction resistant to pulse loads	
Applications	DC-applications - coupling, decoupling	
Packaging	1000 pcs	
Ordering code	FKS2 100pF/100V	

Capacitance	Dimensions	Ord.No.
<b>FKS2: 100V</b>		
b x h x l		
S 1000pF	2,5x6,5x7,2mm	14324
S 1500pF	2,5x6,5x7,2mm	14325
S 2200pF	2,5x6,5x7,2mm	14326
S 3300pF	2,5x6,5x7,2mm	14327
S 4700pF	2,5x6,5x7,2mm	14328
S 6800pF	3,0x7,5x7,2mm	14329
<b>FKS2: 400V</b>		
S 1000pF	2,5x6,5x7,2mm	27052
S 1500pF	2,5x6,5x7,2mm	27053
S 2200pF	2,5x6,5x7,2mm	27054
S 3300pF	2,5x6,5x7,2mm	27055
S 4700pF	2,5x6,5x7,2mm	27056
S 6800pF	3,0x7,5x7,2mm	27057
<b>FKS3: 400V</b>		
S 6800pF	3,0x9,0x13mm	14682

### MKS4 Series



Technical parameters	MKS4
Dielectric	
Capacitance	1000 pF up to 220 µF
Rated voltage	63V <sub>dc</sub> , 250V <sub>dc</sub> , 400V <sub>dc</sub> , 1000V <sub>dc</sub>
Tolerance	± 10%
Operating temp. range	-55...+100°C
Test voltage	1,6Ur, 2s
Operational life	> 300 000 hours
Features	self-healing
Applications	By-pass, blocking coupling and decoupling, timing
Packaging	500 pcs
Ordering code	MKS4 2,2µF/250V

Capacitance	P	Dimensions	Ord.No.
<b>63V</b>			
b x h x l			
S 0,47µF	7,5	4x9x10mm	18632
S 1µF	10	4x9x13mm	14361
S 2,2µF	15	6x12,5x18mm	14364
S 4,7µF	15	7x14x18mm	41044
S 10µF	20,5	11x21x31,5mm	20398
<b>250V</b>			
S 0,01µF	7,5	2,5x7x10mm	25399
S 0,022µF	7,5	2,5x7x10mm	25401
S 0,047µF	7,5	3x8,5x10mm	25403
S 0,1µF	7,5	4x9x10mm	25405
S 0,22µF	7,5	5x10,5x10,3mm	14472
S 2,2µF	27,5	9x19x31,5mm	14491
S 3,3µF	27,5	11x21x31,5mm	14495
<b>400V</b>			
S 0,022µF	10	4x9x13mm	65366
<b>630V</b>			
S 0,01µF	7,5	3x8,5x10mm	14565
S 0,022µF	7,5	3x8,5x10mm	14572
S 0,047µF	7,5	5,7x12,5x10,3mm	14578
S 0,1µF	15	6x12,5x18mm	40576
S 0,22µF	15	8x15x18mm	63111
S 0,47µF	22,5	10,5x19x26,5mm	40579
S 1µF	27,5	11x21x31,5mm	63112
<b>1000V</b>			
S 0,1µF	22,5	7x16x26,5mm	14606

### MKS2 Set-WIMA

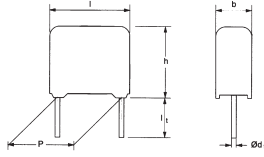


Wima set of foil capacitors MKS02, MKS2 and MKS2-XL in PCM 2,5mm and 5mm. Capacitance range from 1000pF to 22µF

Part No.	Ord.No.	Description
O WIMA MKS02/MKS2/MKS2XL	70344	set of 131 pcs

## Foil Ledged Capacitors for Pulse Applications

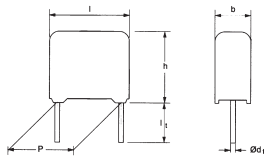
### MKP Series



Technical parameters	MKP10
<b>Dielectric</b>	polypropylene (PP) film
<b>Capacitance</b>	1000 pF up to 15 uF
<b>Rated voltage</b>	400V <sub>dc</sub> , 630V <sub>dc</sub> , 1600V <sub>dc</sub>
<b>Tolerance</b>	± 10%
<b>Operating temp. range</b>	-55...+100°C
<b>Test voltage</b>	1,6Ur, 2s
<b>Operational life</b>	> 300 000 hours
<b>Features</b>	Pulse duty construction, self-healing, very low dissipation factor, negative capacitance change versus temperature
<b>Applications</b>	pulse applications e.g. switch mode power supplies, TV and monitor sets, lighting, Audio/video equipment
<b>Packaging</b>	300 pcs
<b>Ordering code</b>	MKP101600V, 0,01u RM 15

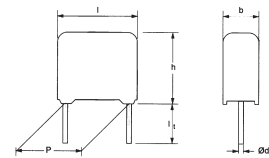
Capacitance P	Dimensions	Ord.No.
<b>400V</b>		
S 0,01uF 7,5	4x9x10mm	55017
S 0,022uF 10	4x9x13mm	14796
S 0,1uF 15	7x14x18mm	14808
S 0,22uF 22,5	7x16,5x26,5mm	14821
S 1uF 27,5	13x24x31,5mm	14832
<b>630V</b>		
S 0,01uF 10	4x9x13mm	51908
S 0,1uF 22,5	7x16,5x26,5mm	50333
S 0,22uF 22,5	8,5x18,5x26,5mm	14860
S 0,47uF 27,5	11x21x31,5mm	63106
S 1uF 27,5	17x29x31,5mm	62644
S 2,2uF 37,5	20x39,5x41,5mm	63105
<b>1600V</b>		
S 1000pF 10	4x9x13mm	63101
S 2200pF 10	4x9x13mm	27121
S 3300pF 10	4x9x13mm	63102
S 0,01uF 15	5x11x18mm	63099
S 0,1uF 22,5	11x21x26mm	54748
S 0,22uF 27,5	15x26x31,5mm	27129
S 1uF 37,5	24x45,5x41,5mm	26410

### FKM Series



Technical parameters	FKM
<b>Dielectric</b>	Mixed film (polyester - polypropylene)
<b>Capacitance</b>	1000 pF up to 6800pF
<b>Rated voltage</b>	63V <sub>dc</sub> , 100V <sub>dc</sub> , 250V <sub>dc</sub> , 400V <sub>dc</sub>
<b>Tolerance</b>	±20%, ±10%, ±5%
<b>Pitch</b>	FKM02 = 2,5mm, FKM2 = 5mm, FKM3=7,5 up to 15mm
<b>Operating temp. range</b>	-55...+100°C
<b>Test voltage</b>	2Ur, 2s
<b>Operational life</b>	> 300 000 hours
<b>Features</b>	Pulse duty construction, PCM 2,5 mm, constant capacitance value versus temperature (similar to the obsolete Polycarbonate), low dissipation factor
<b>Applications</b>	DC-applications requiring a high capacitance stability versus temperature e.g. automotive electronics, lighting

### FKP Series



Technical parameters	FKP1
<b>Dielectric</b>	polypropylene (PP) film
<b>Capacitance</b>	100 pF up to 0.22 uF
<b>Rated voltage</b>	1250V <sub>dc</sub> , 1600V <sub>dc</sub> , 2000V <sub>dc</sub>
<b>Tolerance</b>	±5%
<b>Operating temp. range</b>	-55...+100°C
<b>Test voltage</b>	2Ur, 2s
<b>Operational life</b>	> 300 000 hours
<b>Features</b>	extremely high pulse duty, self-healing, internal series connection, very low dissipation factor, negative capacitance change versus temperature
<b>Applications</b>	For high pulse and high frequency applications e.g. switch mode power supplies, converter in drives and power electronics, deflection systems in monitors and TV-sets, electronic ballasts
<b>Packaging</b>	200 pcs
<b>Ordering code</b>	FKP1 1250V 0,01uF

Capacitance P	Dimensions	Ord.No.
<b>1250V</b>		
S 4700pF 15	7x14x18	15030
S 0,01uF 22,5	7x16,5x26,5	15037
S 0,022uF 22,5	10,5x20,5x26,5	15042
S 0,047uF 27,5	13x24x31,5	15048
S 0,1uF 37,5	15x26x41,5	15061
S 0,22uF 37,5	19x32x41,5	15072
<b>1600V</b>		
S 220pF 15	5x11x18	25466
S 470pF 15	5x11x18	18285
S 1000pF 15	6x12,5x18	26720
S 2200pF 22,5	5x14x26,5	15083
S 4700pF 22,5	7x16,5x26,5	15090
S 0,01uF 22,5	10,5x20,5x26,5	15096
S 0,022uF 27,5	11x21x31,5	15110
S 0,047uF 37,5	13x24x41,5	25470
S 0,1uF 37,5	17x29x41,5	25472
<b>2000V</b>		
S 100pF 15	5x11x18	25473
S 220pF 15	5x11x18	25475
S 470pF 15	6x12,5x18	25477
S 1000pF 15	7x14x18	63098
S 2200pF 22,5	7x16,5x26,5	15120
S 4700pF 22,5	8,5x18,5x26,5	26766
S 0,01uF 27,5	11x21x31,5	15137
S 0,022uF 27,5	15x26x31,5	25480
S 0,047uF 37,5	17x29x41,5	25482

### FKP Set- WIMA

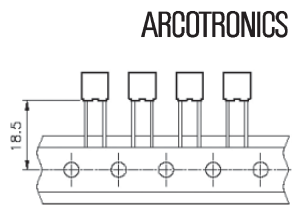
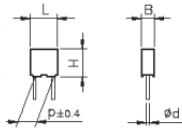
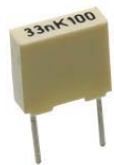


Wima set of foil capacitors FKP02 and FKP2 in PCM 2,5mm and 5mm. Capacitance range from 100pF to 0,033uF

Part No.	Ord.No.	Description
○ WIMA FKP2/FKP02L	70345	set 115 pcs

## Foil Ledged Capacitors

### R82 Series

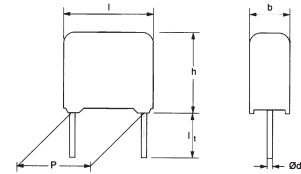


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Technical parameters	R82
Dielectric	polyester film
Tolerance	5%
Pitch	5 mm
Rated voltage	63V <sub>dc</sub> /40V <sub>ac</sub> , 100V <sub>dc</sub> /63V <sub>ac</sub> , 250V <sub>dc</sub> /160V <sub>ac</sub> , 400V <sub>dc</sub> /200V <sub>ac</sub>
Test voltage	1,4 x Un
Operating temp. range	-55...+105°C
Dissipation Factor	<0,008 (1kHz)
Insulation Resistance	15GΩ
Features	low self inductance
Packaging	ammopack: A:3500 pcs C:1900 pcs B:2500 pcs.....D:1700 pcs E:1400 pcs
Ordering code	R82 1uF 100V

Capacitance	BxHxL [mm]	Ord.No.
<b>63V</b>		
S 100nF	2,5x6,5x7,2 A	49353
S 150nF	2,5x6,5x7,2 A	49354
S 220nF	2,5x6,5x7,2 A	49355
S 330nF	3,5x7,5x7,2 B	49356
S 470nF	3,5x7,5x7,2 B	49357
S 680nF	4,5x9,5x7,2 C	49358
S 1uF	5x10x7,5 D	49359
<b>100V</b>		
S 1nF	2,5x6,5x7,2 A	49331
S 1,5nF	2,5x6,5x7,2 A	49334
S 2,2nF	2,5x6,5x7,2 A	49335
S 3,3nF	2,5x6,5x7,2 A	49336
S 4,7nF	2,5x6,5x7,2 A	49337
S 6,8nF	2,5x6,5x7,2 A	49339
S 10nF	2,5x6,5x7,2 A	49340
S 15nF	2,5x6,5x7,2 A	49341
S 22nF	2,5x6,5x7,2 A	49342
S 33nF	2,5x6,5x7,2 A	49343
S 47nF	2,5x6,5x7,2 A	49344
S 68nF	2,5x6,5x7,2 A	49345
S 100nF	2,5x6,5x7,2 A	49346
S 150nF	3,5x7,5x7,2 B	49347
S 220nF	3,5x7,5x7,2 B	49348
S 330nF	4,5x9,5x7,2 C	49349
S 470nF	4,5x9,5x7,2 C	49350
S 1uF	6x11x7,2 E	49351
<b>250V</b>		
S 10nF	2,5x6,5x7,2 A	50345
S 15nF	2,5x6,5x7,2 A	49360
S 33nF	3,5x6,5x7,2 B	49361
S 100nF	6x11x7,2 E	49363
<b>400V</b>		
S 1nF	2,5x6,5x7,2 A	49364
S 1,5nF	2,5x6,5x7,2 A	49365
S 10nF	3,5x6,5x7,2 B	49366
S 15nF	4,5x9,5x7,2 C	49367
S 22nF	4,5x9,5x7,2 C	49368
S 33nF	5x10x7,2 D	49369

### MKT Series



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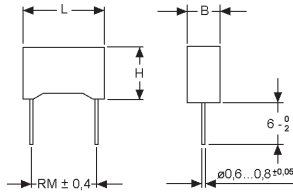
Technical parameters	MKT37x
Dielectric	polyester film
Tolerance	10%
Rated voltage	63V <sub>dc</sub> /40V <sub>ac</sub> , 100V <sub>dc</sub> /63V <sub>ac</sub> , 250V <sub>dc</sub> /160V <sub>ac</sub> , 400V <sub>dc</sub> /200V <sub>ac</sub>
Test voltage	1,6 x Un
Operating temp. range	-55...+100°C
Dissipation Factor	<0,01
Insulation Resistance	15GΩ
Features	low self inductance, self-healing
Pulse rise time:	
63V	18V/us
100V	36V/us
250V	70V/us
400V	190V/us
Ordering code	MKT 1uF 250V RM22,5

Capacitance P	Dimensions	Ord.No.
<b>63V</b>		
O 0,33uF	7,5 4x9x10	23723
<b>100V</b>		
S 0,1uF	5 3,5x8x7,2	40538
S 0,22uF	10 4x9x12,5	28639
S 0,47uF	15 5x11x17,5	28641
S 4,7uF	22,5 10x19,5x26	40545
<b>250V</b>		
S 0,01uF	7,5 2,5x6,5x10	23733
S 0,033uF	7,5 3x8x10	23736
S 0,33uF	15 6x12x17,5	28654
S 0,47uF	15 6x12x17,5	40547
S 0,68uF	15 7x13,5x17,5	40548
S 1uF	22,5 7x17x26	28657
<b>400V</b>		
S 0,01uF	10 4x9x12,5	28660
S 0,22uF	15 7x13,5x18	40552
S 0,47uF	22,5 9x18x26	28670

For the current prices visit  
[www.soselectronic.com](http://www.soselectronic.com)

## R60 Series

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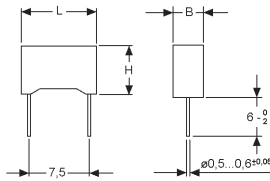


Technical parameters		R60
Dielectric		polyester film
Tolerance		10%
Rated voltage		100V <sub>dc</sub> /63V <sub>ac</sub> <sup>1</sup> , 250V <sub>dc</sub> /160V <sub>ac</sub> <sup>1</sup> , 400V <sub>dc</sub> /200V <sub>ac</sub>
Test voltage		1,6 x Un
Operating temp. range		-55...+105°C
Dissipation Factor		<0,01 (1kHz)
Insulation Resistance		>30GΩ
Features		self-healing
Ordering code		R60 1uF 100V

Capacitance P	Dimensions BxHxL	Ord.No.
<b>100V</b>		
S 1uF	15 5x11x18	49384
S 2,2uF	15 8,5x14,5x18	49383
S 10uF	27,5 11x20x32	47127
<b>250V</b>		
S 0,1uF	10 4x9x13	49388
S 1uF	15 8,5x14,5x18	49389
<b>400V</b>		
S 0,1uF	15 5x11x18	49390
S 1uF	27,5 9x17x32	49391

## R66 Series

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**7,5 mm**

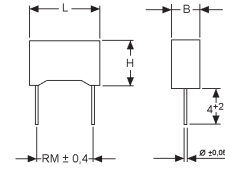
Technical parameters		R66
Dielectric		polyester film
Tolerance		10%
Rated voltage		63V <sub>dc</sub> /40V <sub>ac</sub> <sup>1</sup> , 100V <sub>dc</sub> /63V <sub>ac</sub> <sup>1</sup> , 250V <sub>dc</sub> /160V <sub>ac</sub>
Test voltage		1,6 x Un
Operating temp. range		-55...+105°C
Dissipation Factor		<0,01 (1kHz)
Insulation Resistance		>30GΩ
Features		self-healing
Ordering code		R66 1uF 100V

Capacitance P	Dimensions BxHxL	Ord.No.
<b>63V</b>		
S 1uF	7,5 6x12x10,5	49386
<b>100V</b>		
S 0,1uF	7,5 3,5x8,5x10,5	49385
<b>250V</b>		
S 0,022uF	7,5 2,5x7x10	49387

## Interference Suppression Capacitors

### R46 Series

ARCOTRONICS



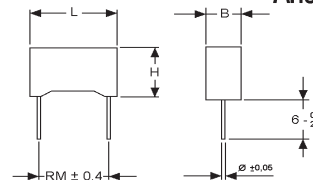
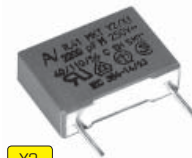
**X2**  
 Typical applications: interference suppression and «across-the-line» applications. Suitable for use in situations where failure of the capacitor would not lead to danger of electric shock. X1 sub-class is intended for high pulse application, X2 sub-class is for general purposes applications, with peak pulse in service ≤ 2,5kV.

Technical parameters		R46
Dielectric		polypropylene (PP) film
Capacitance		10nF-1uF
Rated voltage		275 V AC
Tolerance		±20%
Operating temp. range		-40°C ... +100°C
Sub-class		X2
Features		self-healing
Ordering code		R41 10nF RM15

Capacitance P	Dimensions BxHxL	Ord.No.
S 10nF	15 5x11x18	40840
S 15nF	15 5x11x18	40841
S 22nF	15 5x11x18	40842
S 33nF	15 5x11x18	40843
S 47nF	15 5x11x18	40844
S 68nF	15 5x11x18	40845
S 100nF	15 6x12x18	40846
S 150nF	22,5 6x15x26,5	40896
S 220nF	22,5 6x15x26,5	40847
S 330nF	22,5 7x16x26,5	40848
S 470nF	22,5 7x16x26,5	39807
S 680nF	27,5 9x17x32	40850
S 680nF	22,5 10x18,5x26,5	49376
S 1uF	27,5 13x22x32	40851
S 1uF	22,5 11x20x26,5	49377

### R41 Series

ARCOTRONICS



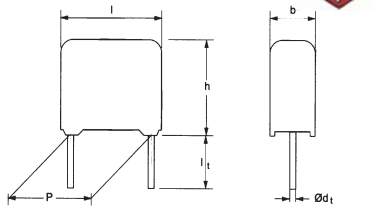
**Y2**  
 Typical applications: Interference suppression and «across-the-line» and «line to ground» applications. Suitable for use in situations where failure of the capacitor could lead to danger of electric shock.  
 Type of insulation bridged/Rat. voltage/Peak impulse before end test/Sub-class  
 • Double or reinforced insulation ≤500Vac/ 8 kV/ Y1  
 • Basic or supplementary insulation ≥150Vac; ≤300Vac/ 5 kV/ Y2  
 • Basic or supplementary insulation ≥150Vac; ≤250Vac/ None/ Y3  
 • Basic or supplementary insulation <150Vac/ 2.5kV/ Y4

Technical parameters		R41
Dielectric		polypropylene (PP) film
Capacitance		2,2-10 nF
Rated voltage		300 V AC
Tolerance		±20%
Operating temp. range		-40°C ... +100°C
Sub-class		Y2
Features		self-healing
Ordering code		R41 10nF RM15

Capacitance P	Dimensions BxHxL	Ord.No.
S 2,2nF	10 4x9x13	9334
S 3,3nF	10 5x11x13	49970
S 4,7nF	10 5x11x13	49971
S 10nF	15 5x11x18	49972

## Interference Suppression Capacitors

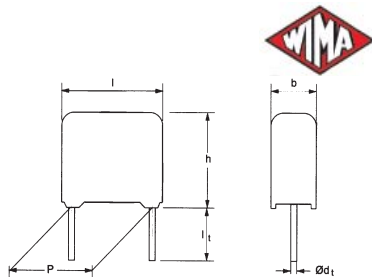
### MKP-X2 Series



Technical parameters		MKP-X2
Dielectric		polypropylene (PP) film
Capacitance		1000 pF up to 2,2 µF
Pitch		7,5-27,5mm
Rated voltages		275 VAC
Tolerance		± 20%
Operating temp. range		-55...+105°C
Operational life		> 300 000 hours
Features		reliable self-healing
Applications		Class X2 RFI applications to meet EMC regulations
Ordering code		MKP-X2 0,1µF

Capacitance P	Dimensions bxhxl	Ord.No.
0 1nF	7,5 4x9x10	70261
0 2,2nF	7,5 4x9x10	68896
0 3,3nF	7,5 4x9x10	68897
0 4,7nF	7,5 4x9x10	68898
0 0,022µF	10 5x11x13	68891
0 0,1µF	15 6x12,5x18	68892
0 0,15µF	15 7x14x18	68893
0 0,68µF	22,5 11x21x26,5	68894
0 1µF	27,5 13x24x31,5	68895

### MP3-X2 Series

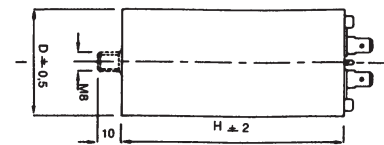


Technical parameters		MP3-X2
Dielectric		metallized paper
Capacitance		1000 pF up to 1,0 µF
Pitch		10-27,5mm
Rated voltages		250VAC, 275 VAC
Tolerance		± 20%
Operating temp. range		-40...+110°C
Operational life		> 300 000 hours
Features		excellent self-healing and high voltage strength, high reliability against active/passive flammability
Applications		class X2 RFI applications to meet EMC regulations
Ordering code		MP3-X2 0,1µF

Capacitance P	Dimensions bxhxl	Ord.No.
0 1nF	10 4x8,5x13,5	68910
0 2,2nF	10 4x8,5x13,5	68911
0 3,3nF	10 4x8,5x13,5	68912
0 4,7nF	10 5x10x13,5	68913
0 0,01µF	15 5x13x19	68899
0 0,022µF	15 5x13x19	68900
0 0,033µF	15 6x14x19	68901
0 0,047µF	15 7x15x19	68902
0 0,1µF	15 10x18x19	68903
0 0,15µF	22,5 8x20x28	68904

0,22µF	22,5	10x22x28	68905
0,33µF	22,5	12x24x28	68906
0,47µF	27,5	13x25x33	68907
0,68µF	27,5	15x26x33	68908
1µF	27,5	20x32x33	68909

## Motor Run Capacitors



The dielectric is polypropylene film, the electrodes consist of an extremely thin metal coating obtained by vacuum evaporation. Case and cover are made with self-extinguishing plastic material, the capacitive element is sealed with polyurethane resin. M8 stud.

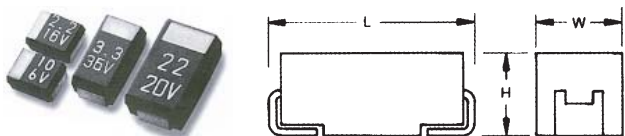
The main characteristics of these capacitors are:

- Low losses non-inductive winding
- Self-healing property avoiding short circuits
- Small size and limited weight
- No leakage risk.
- Class of safety protection: P0

Technical parameters		CMOT
Dielectric		polypropylene (PP) film
Capacitance		1µF-50µF
Rated voltage		450V AC
Tolerance		±5%
Operating temp. range		-25°C ... +70°C
Terminals		4xFASTON 6,3mm, (2+2)
Applications		electric motors
Ordering code		CMOT 1µF

Capacitance M	Dimensions	Ord.No.
S 1µF	M8 D30x56mm	64535
S 2,5µF	M8 D30x56mm	64547
S 3µF	M8 D30x56mm	64545
S 3,5µF	M8 D30x56mm	64549
S 6µF	M8 D30x56mm	64282
S 8µF	M8 D36x65mm	64544
S 10µF	M8 D36x65mm	64281
S 11µF	M8 D36x65mm	64548
S 12µF	M8 D40x75mm	64280
S 14µF	M8 D40x75mm	64279
S 16µF	M8 D40x75mm	64541
S 18µF	M8 D40x75mm	63369
S 20µF	M8 D40x83mm	64542
S 25µF	M8 D40x83mm	64543
S 30µF	M8 D40x92mm	64278
S 40µF	M8 D45x104mm	64277
S 50µF	M8 D50x104mm	64276

## Tantalum Chip Capacitors

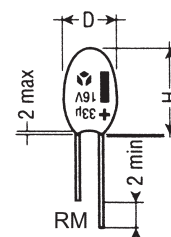


Dimensions	EIA code S	L[mm]	W[mm]	H[mm]
A	3216	3,2	1,6	1,6
B	3528	3,5	2,8	1,9
C	6032	6,0	3,2	2,6
D	7343	7,3	4,3	2,9

Technical parameters	CTS
Rated voltage (DC)	10/16/20/25/35V
Tolerance	±20%
Operating temp. range	-55...+125°C
Packaging	A, B: 2000 pcs C, D: 500 pcs
Ordering code	CTS 10uF 35V

Capacitance	Dimensions	Ord.No.
<b>10V</b>	<b>LxWxH</b>	
S 10uF	3,2x1,6x1,6	A 8377
S 100uF	7,3x4,3x2,9	D 41302
<b>16V</b>		
S 2,2uF	3,2x1,6x1,6	A 41262
S 3,3uF	3,2x1,6x1,6	A 41292
S 4,7uF	3,2x1,6x1,6	A 41060
S 6,8uF	3,2x1,6x1,6	A 41061
S 10uF	3,5x2,8x1,9	B 41293
S 22uF	3,5x2,8x1,9	B 41338
S 47uF	7,3x4,3x2,9	D 41275
<b>20V</b>		
S 22uF	7,3x4,3x2,9	D 41274
S 33uF	7,3x4,3x2,9	D 41304
<b>25V</b>		
S 1uF	3,2x1,6x1,6	A 41278
S 2,2uF	3,5x2,8x1,9	B 41264
S 4,7uF	6,0x3,2x2,6	C 41265
S 10uF	6,0x3,2x2,6	C 41270
<b>35V</b>		
S 1uF	3,5x2,8x1,9	B 41263
O 2,2uF	6,0x3,2x2,6	C 41267
S 3,3uF	6,0x3,2x2,6	C 41268
S 4,7uF	6,0x3,2x2,6	C 41269
S 10uF	7,3x4,3x2,9	D 41272
<b>50V</b>		
S 1uF	6,0x3,2x2,6	C 62370

## Tantalum Leaded Capacitors



Technical parameters	CT
Rated voltage (DC)	6,3/10/16/25/35V
Tolerance	±20%
Operating temp. range	-55...+125°C
Terminals	radial, Ø 0,5mm
Packaging	1000 pcs
Ordering code	CT 10uF 10V

Capacitance	Dimensions	RM	Ord.No.
<b>6,3V</b>	<b>DxH</b>		
S 10uF	5x8,5	2,5	15784
S 22uF	5x9	2,5	15785
S 47uF	6x10	2,5	15786
<b>10V</b>			
S 10uF	5x8,5	2,5	15789
S 33uF	6,5x11	2,5	15792
<b>16V</b>			
S 2,2uF	4,5x7	2,5	15796
S 3,3uF	4,5x7	2,5	15797
S 4,7uF	5x8,5	2,5	15798
S 6,8uF	5x8,5	2,5	15799
S 10uF	5x9	2,5	15800
S 22uF	6x10	2,5	15802
S 47uF	7,5x10,5	2,5	15804
O 100uF	8,5x14	5	15807
<b>25V</b>			
S 2,2uF	4,5x7	2,5	15809
S 4,7uF	5x8,5	2,5	15811
S 10uF	6x10	2,5	15813
S 15uF	6x10	2,5	63988
S 22uF	7,5x10	2,5	15815
<b>35V</b>			
S 0,1uF	4,5x7	2,5	15818
S 0,22uF	4,5x7	2,5	15820
S 0,33uF	4,5x7	2,5	15821
S 0,47uF	4,5x7	2,5	15822
S 1uF	4,5x7	2,5	15824
S 1,5uF	5x8,5	2,5	15825
S 2,2uF	5,5x9	2,5	15826
S 4,7uF	5,5x9	2,5	15828
O 10uF	6x10	2,5	15830
O 22uF	8,5x13	2,5	69284
O 47uF	9,5x16,5	5	15834

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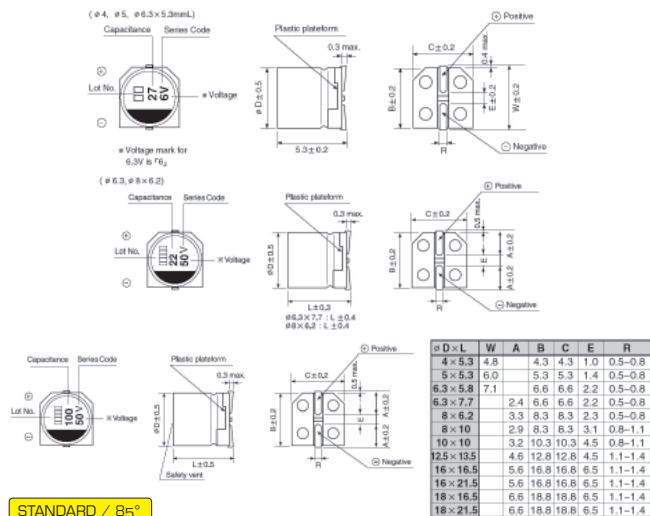
## Electrolytic SMD Capacitors



Chip type aluminium electrolytic capacitors in vertical housing. Designed for surface mounting on high density PC board. Complied to the RoHS directive.



## ES-SC Series

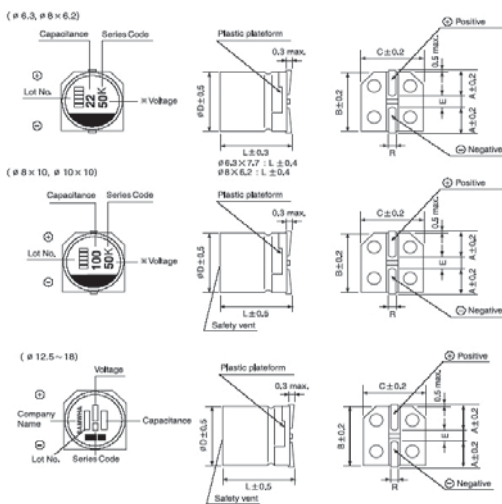


STANDARD / 85°C

Technical parameters	ES - SC
Capacitance	4,7uF-1000uF
Rated voltage	10-63V DC
Tolerance	±20% at 120Hz, 20°C
Operating temp. range	-40°C ... +85°C
Operational life	1000 hours/85°C
Ordering code	ES 10uF 35V SC

Capacitance	Dimensions	Ord.No.
<b>10V</b>		
S 330uF	6,3x7,7mm	69610
S 1000uF	10x10mm	69611
<b>16V</b>		
S 10uF	4x5,3mm	69612
S 22uF	4x5,3mm	69613
S 47uF	5x5,3mm	69614
S 100uF	6,3x5,3mm	69615
S 220uF	6,3x7,7mm	69616
S 330uF	8x10mm	69617
S 470uF	8x10mm	69618
<b>25V</b>		
S 10uF	4x5,3mm	69619
S 22uF	5x5,3mm	69620
S 47uF	6,3x5,8mm	69621
S 100uF	6,3x7,7mm	69622
S 220uF	8x10mm	69623
S 330uF	8x10mm	69624
S 470uF	10x10mm	69625
<b>35V</b>		
S 10uF	4x5,3mm	69626
S 22uF	5x5,3mm	69627
S 47uF	6,3x5,8mm	69628
S 100uF	6,3x7,7mm	69629
S 220uF	8x10mm	69630
S 330uF	10x10mm	69631
<b>50V</b>		
S 10uF	5x5,3mm	69632
S 22uF	6,3x5,3mm	69633
S 47uF	6,3x7,7mm	69634
S 100uF	8x10mm	69635
S 220uF	10x10mm	69636
<b>63V</b>		
S 4,7uF	6,3x5,8mm	69637
S 10uF	6,3x5,3mm	69638
S 22uF	6,3x7,7mm	69639
S 47uF	8x10mm	69640
S 100uF	10x10mm	69641

## ESR - CK Series



D x L	W	A	B	C	E	R
6.3 x 5.8	7.1	6.6	6.6	2.2	0.5-0.8	
6.3 x 7.7		2.4	6.6	6.6	2.2	0.5-0.8
8 x 6.2	3.3	8.3	8.3	2.3	0.5-0.8	
8 x 10	2.9	8.3	8.3	3.1	0.8-1.1	
10 x 10	3.2	10.3	10.3	4.5	0.8-1.1	
12.5 x 13.5	4.6	12.8	12.8	4.5	1.1-1.4	

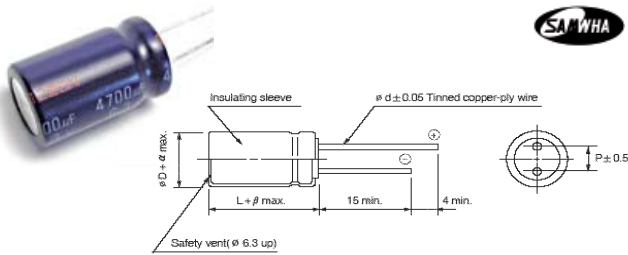
LOW IMPEDANCE / 10<sup>5</sup>

Technical parameters	ESR - CK
Capacitance	4,7uF-1000uF
Rated voltage	6,3-50V DC
Tolerance	±20% at 120Hz, 20°C
Operating temp. range	-55°C ... +105°C
Operational life	1000 hours/105°C
Ordering code	ESR 10uF 35V CK

Capacit.	Dimensions	Ord.No.	Z [Ω]
<b>6,3V</b>			
S 22uF	4x5,3mm	69948	1,8
S 47uF	5x5,3mm	69949	0,9
S 220uF	6,3x5,8mm	69950	0,44
S 470uF	8x10mm	69951	0,17
S 1000uF	10x10mm	69952	0,09
<b>10V</b>			
S 100uF	6,3x5,8mm	69953	0,44
S 220uF	6,3x7,7mm	69954	0,34
S 1000uF	10x10mm	69955	0,09
<b>16V</b>			
S 47uF	5x5,3mm	69956	0,9
S 100uF	6,3x5,8mm	69957	0,44
S 220uF	6,3x7,7mm	69958	0,34
S 470uF	8x10mm	69959	0,17
<b>25V</b>			
S 22uF	5x5,3mm	69960	0,9
S 47uF	6,3x5,8mm	69961	0,44
S 100uF	6,3x7,7mm	69962	0,34
S 220uF	8x10mm	69963	0,17
S 470uF	10x10mm	69964	0,09
<b>35V</b>			
S 4,7uF	4x5,3mm	69965	1,8
S 10uF	4x5,3mm	69966	1,8
S 22uF	6,3x5,3mm	69967	0,76
S 47uF	6,3x5,8mm	69968	0,44
S 100uF	8x10mm	69969	0,17
S 220uF	10x10mm	69970	0,09
S 330uF	10x10mm	69971	0,09
<b>50V</b>			
S 1uF	4x5,3mm	69972	8,0
S 2,2uF	4x5,3mm	69973	8,0
S 4,7uF	6,3x5,8mm	69974	0,88
S 10uF	6,3x5,8mm	69975	0,88
S 22uF	6,3x5,8mm	69976	0,88
S 47uF	6,3x7,7mm	69977	0,68
S 100uF	8x10mm	69978	0,34

Z - impedance at 20°C and 100KHz

## Radial Electrolytic Capacitors



Miniature aluminium electrolytic capacitors for general purposes.  
 ELRA - SD - standard series  
 E105 - RD - wide temperature range series: 105°C

### ELRA-SD Series

STANDARD / 85°

Technical parameters	ELRA-SD
Capacitance	1uF-4700uF
Rated voltage	10-100V DC
Tolerance	±20% at 120Hz, 20°C
Operating temp. range	-40°C ... +85°C
Operational life	2000 hours/85°C
Ordering code	ELRA 10uF 35V SD

Capacitance	Ord.No.	P[mm]	DxL [mm]
<b>10V</b>			
S 470 uF	64408	2,5	6,3x11
<b>16V</b>			
S 330 uF	64889	2,5	6,3x11
S 470 uF	64521	3,5	8x11,5
S 1000 uF	64410	5	10x12,5
S 2200 uF	64411	5	10x20
S 4700 uF	64412	7,5	12,5x25
<b>25V</b>			
S 100 uF	64413	2	5x11
S 220 uF	64409	2,5	6,3x11
S 1000 uF	65281	5	10x16
S 2200 uF	65285	5	12,5x20
S 4700 uF	64414	7,5	16x25
<b>35V</b>			
S 47 uF	64415	2	5x11
S 100 uF	71075	2,5	6,3x11
S 220 uF	65267	3,5	8x11
S 1000 uF	64416	5	12,5x20
S 2200 uF	64417	7,5	16x27
S 3300 uF	64418	7,5	16x31,5
S 4700 uF	64419	7,5	16x35,5
<b>50V</b>			
S 33 uF	64420	2	5x11
S 4700 uF	64893	7,5	18x40
<b>63V</b>			
S 22 uF	64421	2	5x11
S 47 uF	64422	2,5	6,3x11
S 100 uF	64423	3,5	8x11
S 220 uF	64424	5	10x16
S 330 uF	64890	5	10x20
S 470 uF	64425	5	12,5x20
S 1000 uF	64426	7,5	16x25
S 2200 uF	64891	7,5	18x31,5
S 3300 uF	64892	7,5	18x40
<b>100V</b>			
S 1 uF	64884	2	5x11
S 2,2 uF	64885	2	5x11
S 3,3 uF	64886	2	5x11
S 4,7 uF	64887	2	5x11
S 10 uF	64427	2	5x11
S 22 uF	64428	2,5	6,3x11
S 33 uF	64888	3,5	8x11,5
S 47 uF	64429	3,5	8x11,5

## E105-RD Series



STANDARD / 105°

Technical parameters	E105-RD
Capacitance	2,2uF-4700uF
Rated voltage	10-450V DC
Tolerance	±20% at 120Hz, 20°C
Operating temp. range	-55°C ... +105°C
Operational life	2000 hours/105°C
Ordering code	E105 47uF 35V RD

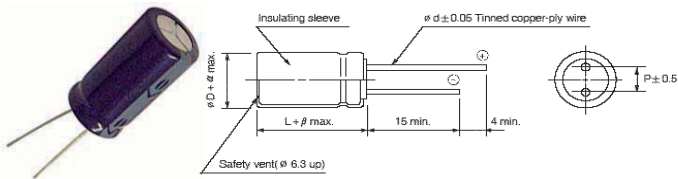
Capacitance	Ord.No.	P[mm]	DxL [mm]
<b>10V</b>			
S 4700 uF	64373	5	12,5x25
<b>16V</b>			
S 220 uF	64877	2,5	6,3x11
S 470 uF	64374	3,5	8x11,5
S 1000 uF	64375	5	10x16
S 2200 uF	64376	5	12,5x20
S 3300 uF	64881	5	12,5x25
S 4700 uF	64377	7,5	16x25
<b>25V</b>			
S 330 uF	64879	3,5	8x11,5
S 470 uF	64378	5	10x12,5
S 1000 uF	64379	5	10x20
S 2200 uF	64380	5	12,5x25
S 3300 uF	64381	7,5	16x25
<b>35V</b>			
S 100 uF	64382	2,5	6,3x11
S 220 uF	64383	3,5	8x11,5
S 470 uF	64384	5	10x16
S 1000 uF	64385	5	12,5x20
S 2200 uF	64386	7,5	16x25
S 4700 uF	64883	7,5	16x35,5
<b>50V</b>			
S 220 uF	64387	5	10x12,5
S 470 uF	64388	5	10x20
S 1000 uF	64389	5	12,5x25
S 2200 uF	64390	7,5	16x31,5
S 3300 uF	64882	7,5	16x35,5
<b>63V</b>			
S 22 uF	64391	2	5x11
S 47 uF	64392	2,5	6,3x11
S 100 uF	64393	3,5	8x11,5
S 220 uF	64394	5	10x16
S 330 uF	64395	5	10x20
S 470 uF	64396	5	12,5x20
S 1000 uF	64397	7,5	16x25
<b>100V</b>			
S 2,2 uF	64871	2	5x11
S 4,7 uF	64872	2	5x11
S 10 uF	64398	2	5x11
S 22 uF	64399	2,5	6,3x11
S 47 uF	64400	5	10x12,5
S 100 uF	64001	5	10x20
S 220 uF	64402	5	12,5x25
S 470 uF	64880	7,5	16x25
<b>250V</b>			
S 10 uF	64403	5	10x12,5
S 22 uF	64873	5	10x20
S 47 uF	64875	5	12,5x25
S 100 uF	64876	7,5	16x31,5
S 220 uF	64878	7,5	18x40
<b>450V</b>			
S 2,2 uF	64404	5	10x12,5
S 4,7 uF	64405	5	10x16
S 10 uF	64406	5	12,5x20
S 22 uF	64874	7,5	16x25
S 47 uF	64407	7,5	16x35



## Radial Electrolytic Capacitors

(continued)

### ER-RZ Series



LOW IMPEDANCE / 10<sup>5</sup>

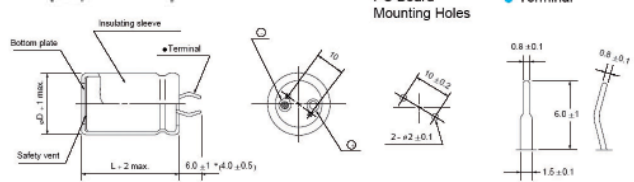
Miniature aluminium electrolytic capacitors - extremely low impedance series at high frequency. High reliability withstanding 5000 hours load life at 105°C (2000/3000 hours for smaller case sizes). Ideally suited for use in switching power supplies. Complied to the RoHS directive.

Technical parameters	ER-RZ
Capacitance	10uF-4700uF
Rated voltage	16-63V DC
Tolerance	±20% at 120Hz, 20°C
Operating temp. range	-55°C ... +105°C
Operational life	at 105°: 5000 hours (Ø8: 3000 hours, Ø5, 6.3: 2000 hours)
Ordering code	ER 470uF 165V RZ

Capacit.	Ord.No.	DxLxP [mm]	I [Ohm]
<b>16V</b>			
S 22uF	70006	5x11x2	
S 220uF	70007	8x11,5x3,5	0,16
S 470uF	70008	10x12,5x5	0,09
S 1000uF	70009	10x20x5	0,047
S 2200uF	70010	10x25x5	0,033
S 4700uF	70011	16x31,5x7,5	0,02
<b>25V</b>			
S 10uF	70012	5x11x2	
S 47uF	70013	5x11x2	0,55
S 100uF	70014	6,3x11x2,5	0,24
S 220uF	70015	10x12,5x5	0,13
S 470uF	70016	10x16x5	0,065
S 1000uF	70017	12x25x5	0,036
S 2200uF	70018	16x25x7,5	0,028
S 3300uF	70019	16x31,5x7,5	0,02
<b>35V</b>			
S 100uF	70020	8x11,5x3,5	0,16
S 220uF	70021	10x12,5x5	0,09
S 470uF	70022	10x16x5	0,046
S 1000uF	70023	16x20x7,5	0,034
S 2200uF	70024	16x31,5x7,5	0,02
<b>50V</b>			
S 1uF	70025	5x11x2	4
S 22uF	70026	5x11x2	0,65
S 220uF	70027	10x20x5	0,075
S 470uF	70028	12x20x5	0,044
S 1000uF	70029	16x25x7,5	0,03
<b>63V</b>			
S 47uF	70030	8x11,5x3,5	0,25
S 100uF	70031	10x12,5x5	0,12
S 220uF	70032	12x20x5	0,065
S 470uF	70033	12x25x5	0,042
S 1000uF	70034	16x31,5x7,5	0,029

For the current prices visit  
[www.soselectronic.com](http://www.soselectronic.com)

## ESI-HC Series



SNAP-IN/B5°

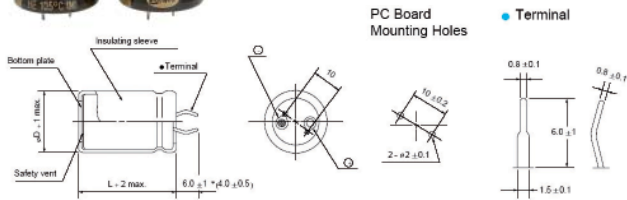
Standard snap-in terminal type large aluminium electrolytic capacitors. Including height 20mm products, low profile sized (Voltage range of 160 ~ 450V). Complied to the RoHS directive

Technical parameters	ESI-HC
Capacitance	100uF-4700uF
Rated voltage	16-450V DC
Tolerance	±20% at 120Hz, 20°C
Operating temp. range	-40°C ... +85°C
Operational life	2000 hours/85°C
Ordering code	ESI 470uF 350V HC

Capacitance	Ord.No.	DxL [mm]
<b>16V</b>		
S 4700uF	70038	22x20mm
<b>25V</b>		
S 3300uF	70039	22x25mm
S 4700uF	70040	22x25mm
<b>35V</b>		
S 3300uF	70041	22x30mm
S 4700uF	70042	22x25mm
<b>50V</b>		
S 2200uF	70043	22x25mm
S 3300uF	70044	22x30mm
S 4700uF	70045	30x25mm
<b>63V</b>		
S 2200uF	70046	25,4x25mm
S 3300uF	70047	25,4x25mm
S 4700uF	70048	30x30mm
<b>80V</b>		
S 4700uF	70049	35x30mm
S 6800uF	70050	35x40mm
S 10000uF	70051	35x50mm
<b>250V</b>		
S 100uF	70052	22x25mm
S 220uF	70053	22x25mm
S 330uF	70054	22x30mm
S 470uF	70055	25,4x30mm
S 1000uF	70056	35x40mm
<b>350V</b>		
S 100uF	70057	22x25mm
S 220uF	70058	30x30mm
S 330uF	70059	35x30mm
S 470uF	70060	35x40mm
<b>450V</b>		
S 47uF	70061	22x25mm
S 100uF	70062	22x25mm
S 220uF	70063	35x25mm
S 330uF	70064	35x30mm
S 470uF	70065	35x40mm

Overview of capacitors from other manufacturers -  
see pages A45 - A47.

## E105SI-HE Series



### SNAP-IN/105°

Standard snap-in terminal type large aluminium electrolytic capacitors. Wide temperature range of -40(-25) ~ +105°C. Including height 20mm products, low profile sized (Voltage range of 160 ~ 500V). Complied to the RoHS directive.

Technical parameters	E105SI-HE
Capacitance	22uF-4700uF
Rated voltage	16-450V DC
Tolerance	±20% at 120Hz, 20°C
Operating temp. range	-40°C ... +105°C
Operational life	2000 hours/105°C
Ordering code	E105 SI 470uF 350V HC

Capacitance	Ord.No.	DxL [mm]
<b>16V</b>		
S 3300uF	70068	22x20mm
S 4700uF	70069	22x25mm
<b>25V</b>		
S 2200uF	70070	22x25mm
S 3300uF	70071	22x25mm
S 4700uF	70072	22x25mm
<b>35V</b>		
S 2200uF	70073	22x25mm
S 3300uF	70074	22x25mm
S 4700uF	70075	22x30mm
<b>50V</b>		
S 2200uF	70076	22x25mm
S 3300uF	70077	25,4x25mm
S 4700uF	70078	25,4x30mm
<b>63V</b>		
S 1000uF	70079	22x25mm
S 2200uF	70080	22x35mm
S 3300uF	70081	30x30mm
S 4700uF	70082	35x25mm
<b>250V</b>		
S 100uF	70083	22x20mm
S 220uF	70084	30x20mm
S 330uF	70085	30x25mm
S 470uF	70086	30x25mm
S 1000uF	70087	35x35mm
<b>350V</b>		
S 100uF	70088	22x25mm
S 220uF	70089	35x25mm
S 330uF	70090	35x35mm
S 470uF	70091	35x40mm
<b>450V</b>		
S 22uF	70092	22x20mm
S 47uF	70093	22x20mm
S 100uF	70094	25,4x30mm
S 220uF	70095	35x25mm
S 330uF	70096	35x35mm
S 470uF	70097	35x40mm

SOS electronic official distributor of branded capacitors



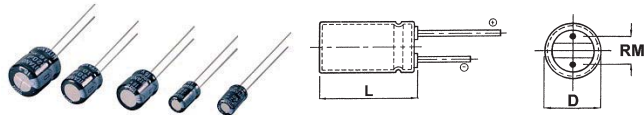
- aluminium electrolytic capacitors
- electric double layer capacitors



Overview of capacitors from other manufacturers - see pages A44 - A46.

## Radial Electrolytic Capacitors (continued)

### ELRA-SK Series



STANDARD / 85°

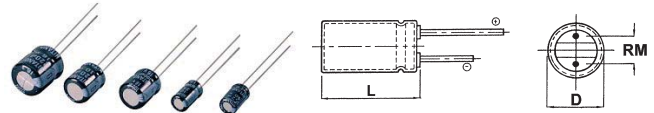
Miniature aluminium electrolytic capacitors with radial leads for general purposes.

Technical parameters	ELRA-SK
Capacitance	0.47uF-4700uF
Rated voltage	16-450V DC
Operating temp. range	-40°C ... +85°C
Operational life	2000 hours/85°C
Manufacturer's marking	SKR
Ordering code	ELRA 10uF 35V SK

Capacitance	Ord.No.	P[mm]	DxL [mm]
<b>16V</b>			
S 220 uF	49257	2,5	6,3x11
S 330 uF	15742	3,5	8x11
S 470 uF	15743	3,5	8x11
S 2200 uF	15745	5,1	13x26
S 3300 uF	15746	5	13x26
S 4700 uF	22974	7,5	16x25
<b>25V</b>			
S 47 uF	49479	2	5x11
S 100 uF	39820	2,5	6,3x11
S 220 uF	15748	3,5	8x11
S 470 uF	15749	5	10x13
S 1000 uF	15750	5	10x21
S 2200 uF	21941	5	13x26
S 4700 uF	36204	7,5	18x35
<b>35V</b>			
S 33 uF	15754	2	5x11
S 100 uF	15756	2,5	6,3x11
S 220 uF	49259	3,5	8x11
S 330 uF	15758	5	10x13
S 470 uF	15759	5	10x16
S 1000 uF	15762	5	13x21
S 2200 uF	15764	7,5	16x25
S 3300 uF	15766	7,5	16x35
S 4700 uF	22975	7,5	18x35
<b>50V</b>			
S 100 uF	26212	3,5	8x11
S 220 uF	26213	5	10x13
S 470 uF	26214	5	13x21
S 1000 uF	26215	5	13x26
S 2200 uF	36217	7,5	18x35
<b>63V</b>			
S 10 uF	15773	2	5x11
S 22 uF	15774	2	5x11
S 47 uF	15776	2,5	6,3x11
S 100 uF	15777	5	10x13
S 220 uF	15778	5	10x16
S 470 uF	15780	5	13x21
S 1000 uF	20335	7,5	16x25
<b>100V</b>			
S 0,47 uF	15781	2	5x11
S 1 uF	15782	2	5x11
S 2,2 uF	26216	2	5x11
S 4,7 uF	26217	2	5x11
S 10 uF	26218	2,5	6,3x11
S 22 uF	26219	2,5	6,3x11
S 47 uF	26220	5	10x17
S 100 uF	26221	5	13x21
<b>200V</b>			
S 10 uF	25227	5	10x16

Capacitance	Ord.No.	P[mm]	DxL [mm]
<b>400V</b>			
4,7 uF	25230	5	10x20
10 uF	25231	5	12,5x20
<b>450V</b>			
4,7 uF	40280	5	10x18
10 uF	40281	5	13x21
22 uF	40722	7,5	16x25

### E105-TK Series



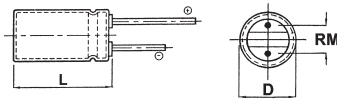
STANDARD / 105°

Miniature aluminium electrolytic capacitors with radial leads for general purposes. Wide temperature range.

Technical parameters	E105-TK
Capacitance	1uF-4700uF
Rated voltage	16-450V DC
Operating temp. range	-40°C ... +105°C
Operational life	2000 hours/85°C
Manufacturer's marking	TKR (bulk), TKP (reel)
Ordering code	E105 47uF 25V TK

Capacitance	Ord.No.	P[mm]	DxL [mm]
<b>16V</b>			
S 1000 uF	60813	5	10x16
S 4700 uF	49508	3,5	8x12
<b>25V</b>			
S 47 uF	48590	2	5x11
S 100 uF	39708	2,5	6x12
S 1000 uF	49701	5	10x20
<b>50V</b>			
S 22 uF	49702	2	5x11
S 47uF	39729	5	6,3x11
S 100 uF	49500	3,5	8x12
S 220 uF	39731	5	10x16
S 470 uF	39733	5	10x20
S 1000 uF	39734	5	12,5x25
S 2200 uF	53371	7,5	16x35,5
<b>63V</b>			
S 4,7uF	39744	5	5x11
S 10 uF	49497	2	5x11
S 22 uF	39746	5	6x11
S 1000 uF	39753	7,5	16x25
<b>100V</b>			
S 1 uF	39741	2	5x11
S 2,2 uF	39742	2	5x11
S 220 uF	48635	5	12,5x25
S 470 uF	39769	7,5	16x25
<b>450V</b>			
S 1uF	53179	5	10x12,5
S 2,2 uF	53180	5	10x20
S 4,7uF	53181	5	12,2x20

## ELMIN Series



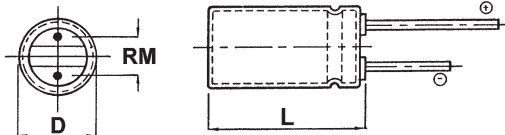
**JAMICON®**

SUBMINIATURE / 85° 7 mm

Technical parameters		ELMIN
Capacitance		0,1uF-100uF
Rated voltage		10-63V DC
Operating temp. range		-40°C ... +85°C
Manufacturer's marking		SSR
Ordering code		ELMIN 16V 22uF

Capacitance	Ord.No.	RM[mm]	DxL [mm]
<b>10V</b>			
S 22 uF	19457	1,5	4x7
S 33 uF	60376	1,5	4x7
S 47 uF	40743	2	5x7
<b>16V</b>			
S 6,8 uF	19459	1,5	4x7
S 22 uF	40744	1,5	4x7
S 47uF	40745	2,5	6,3x7
S 100 uF	40746	2,5	6,3x7
<b>25V</b>			
S 10 uF	40747	1,5	4x7
S 22 uF	60380	2	5x7
S 33 uF	44975	2,5	6,3x7
<b>35V</b>			
S 10 uF	40748	2	5x7
S 22 uF	60382	2,5	6,3x7
<b>50V</b>			
S 2,2 uF	19461	1,5	4x7
S 3,3 uF	19462	1,5	4x7
S 4,7 uF	19463	1,5	4x7
S 10 uF	40749	2,5	6,3x7
<b>63V</b>			
S 0,1uF	19464	1,5	4x7
S 0,22 uF	19466	1,5	4x7
S 0,33 uF	19467	1,5	4x7
S 0,47 uF	19468	1,5	4x7
S 1 uF	19470	1,5	4x7
S 2,2 uF	60384	1,5	4x7
S 3,3 uF	60386	2	5x7
S 4,7 uF	60388	2,5	6,3x7

## ELLOW -RVI Series



**VISHAY**

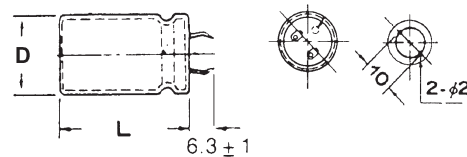
LOW IMPEDANCE / 105°

Features: very long operational life 4000 to 10000 hours at 105°C, very high reliability, low impedance (ESR), excellent ripple current capability.  
Applications: power supplies (SMPS, DC/DC converters) for general industrial, EDP, audio-video, automotive and telecommunications. Smoothing, filtering, buffering.

Technical parameters		ELLOW
Capacitance		47uF-2200uF
Rated voltage		10-63V DC
Operating temp. range		-55°C ... +105°C
Manufacturer's marking		RVI
Ordering code		ELLOW 220uF 35V

Capacitance	Ord.No.	l[mΩ]	DxL [mm]
<b>10V</b>			
O 1000uF	40049	62	10x20 x5
S 2200uF	40050	34	12,5x25x5
<b>16V</b>			
S 470uF	40051	84	10x16x5
<b>25V</b>			
S 470uF	40053	76	10x20x5
S 1000uF	40054	34	12,5x25x5
<b>35V</b>			
S 220uF	40056	84	10x16x5
O 2200uF	40057	22	16x35x5
<b>50V</b>			
S 470uF	40058	44	12,5x25x5
S 1000uF	40059	30	16x31x5
<b>63V</b>			
S 47uF	40060	300	10x12x5
S 100uF	40061	190	10x16x5
S 220uF	40062	110	12,5x20x5

## ELPW -LP Series



**JAMICON®**

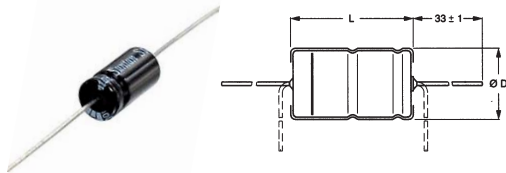
SNAP-IN/ 85°

Technical parameters		ELPW
Capacitance		47uF-10000uF
Rated voltage		50-450V DC
Operating temp. range		-40°C ... +85°C
Operational life		2000 hours/85°C
Manufacturer's marking		TKR
Ordering code		ELPW 4700uF 63V TK

Capacitance	Ord.No.	DxL [mm]
<b>50V</b>		
S 4700uF	40988	35x25x10
S 10000uF	40989	35x35x10
<b>63V</b>		
S 2200uF	21931	30x25x10
S 1000uF	40990	22x25x10
S 4700uF	40992	35x30x10
S 3300uF	40208	35x25x10
<b>80V</b>		
S 10000uF	2616	35x50x10
<b>100V</b>		
S 1000uF	40993	30x25x10
S 3300uF	40996	35x35x10
S 4700uF	40997	35x45x10
<b>200V</b>		
S 1000uF	36297	35x40x10
<b>250V</b>		
S 330uF	40218	30x25x10
S 220uF	41001	25x25x10
S 470uF	41002	30x35x10
<b>400V</b>		
S 150uF	40224	30x25x10
S 100uF	41003	22x30x10
S 220uF	41004	25x40x10
S 470uF	41005	35x45x10
S 47uF	41006	22x25x10
<b>450V</b>		
S 330uF	41007	35x45x10
S 47uF	40228	22x25x10

## Axial Electrolytic Capacitors

### ELAX - B41 Series



Technical parameters	ELAX
Capacitance	1uF-1000uF
Rated voltage	16-35V DC
Operating temp. range	-40°C ... +85°C
Manufacturer's marking	B41
Ordering code	ELAX 16V 470uF

Capacitance	Ord.No.	DxL [mm]
<b>16V</b>		
S 470uF	15642	8x18
S 1000uF	15643	10x25
<b>25V</b>		
S 22uF	15651	4,5x10
S 100uF	21934	6x17
S 220uF	21935	6,5x18
<b>40V</b>		
S 22uF	15684	4,5x10
S 47uF	18126	6x10
S 220uF	15692	10x18
<b>63V</b>		
S 1uF	15707	4,5x10
S 2,2uF	18129	4,5x10
S 4,7uF	15709	4,5x10
S 10uF	15710	4,5x10
S 47uF	15712	6,5x18
S 100uF	15713	8x18
S 220uF	15714	10x25
S 470uF	15715	12,5x30
<b>100V</b>		
S 4,7uF	15723	4,5x10
S 47uF	15726	8x18
S 220uF	15727	12,5x30
<b>350V</b>		
S 4,7uF	15731	12,5x30

## BIP Series



**BIPOLAR**

Features: polarized, switch proofed, welded axial leads, high reliability, high ripple current, all contacts welded

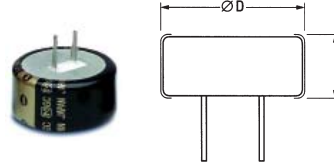
Applications: standard- and switch mode power supplies, computer, telecommunications, general industrial, consumer - electronic.

Technical parameters	BIP
Capacitance	1uF-68uF
Rated voltage	100V DC
Operating temp. range	-40°C ... +85°C
Operational life	5000h/40°C, 2500h/85°C
Manufacturer's marking	ATBI
Ordering code	BIP 4,7uF/100V

Capacitance	Ord.No.	DxL [mm]
S 1uF	4879	10x30
S 2,2uF	4880	10x30
S 3,3uF	15584	10x30
S 4,7uF	4881	10x30
S 6,8uF	4626	10x30
S 10uF	15621	10x30
S 15uF	4670	10x30
S 22uF	4632	12x30
S 33uF	15627	12x30
S 47uF	4882	14x37
S 68uF	4883	16x39

## Electric Double Layer Capacitors

### GOLDCAP



Features: endurance at 70°C 1000 hours, RoHS directive compliant.  
Recommended applications: memory back-up for video and audio equipment, cameras, telephones, printers, data terminals, rice cookers and intelligent remote controls.

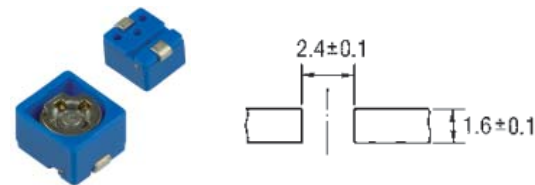
Technical parameters	GOLDCAP
Capacitance	0,1F-1F
Rated voltage	5,5V
Operating temp. range	-25°C ... +70°C
Ordering code	GOLDCAP 5,5V 0,1F

Capacitance	Ord.No.	DxL [mm]
S 0,1 F	31803	13x7
S 0,22 F	31804	13x7
S 0,47 F	31806	21x7,5
S 1 F	31807	21x7,5

## SMD Trimming Capacitors

*muRata*

### TZB4 Series



MURATA TZB4 series of SMD trimming capacitors. Color coded case facilitates identification of capacitance range. Designed for automatic placement in surface mount applications.

Applications: car audio systems, cordless telephones, hybrid ICs, pagers, remote keyless entry systems, tuner packs, surveillance cameras, DVD, burglarproof devices.

Operating temperature range: -25°C to +85°C.

Miniature rectangular shape: (LxWxH) 4,5 x 4,0 x 3,0mm.

Part No.	Capacitance	Temp. coeff.	Q <sub>min</sub> @1MHz	Voltage	Colour
TZB4Z060	2-6pF	200ppm/K	500	100V	blue
TZB4Z100	3-10pF	300ppm/K	500	100V	white
TZB4Z250	4-25pF	300ppm/K	300	50V	black

Capacitance	Ord.No.
S 2-6pF	4242
S 3-10pF	11806
S 4-25pF	11807

## Foil Trimming Capacitors



Technical parameters	808-1
Test voltage	500V <sub>DC</sub> /1min
Minimum insulation resistance	10 000 MOhm
Operating temp. range	-40°C ... +70°C
Diameter	7,5 mm
RM	3,5/7,1 mm

Part No./Capacitance	Colour	Ord.No.
S 808-1 1,4-5,5pF	grey	20211
S 808-1 2-15pF	blue	20213
S 808-1 2,5-22pF	green	20214
S 808-1 2,5-27pF	red	20215
S 808-1 3-50pF	black	24916



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technik@soselectronic.com



SMD • JXG Series			
	Type	Frequency range	Size
	<b>JXG32P4</b> 4 Pad Version	13.0 ~ 50.0 MHz	3.2 x 2.5 x 1.0 mm
	<b>JXG53P4</b> 4 Pad Version	8.0 ~ 60.0 MHz	5.0 x 3.2 x 1.5 mm
	<b>JXG53P2</b> 2 Pad Version preferred type	8.0 ~ 60.0 MHz	5.0 x 3.2 x 1.5 mm
	<b>JXG75P4</b> 4 Pad Version	5.0 ~ 70.0 MHz	7.0 x 5.0 x 1.8 mm
	<b>JXG75P2</b> 2 Pad Version preferred type	5.0 ~ 70.0 MHz	7.0 x 5.0 x 1.8 mm
	<b>JXG84P2</b> 2 Pad Version	6.0 ~ 60.0 MHz	8.0 x 4.5 x 1.4 mm

SMD • JXS Series			
	Type	Frequency range	Size
	<b>NEW</b> <b>JXS21</b>	26.0 ~ 50.0 MHz	2.0 x 1.6 x 0.5 mm
	<b>JXS22</b>	16.0 ~ 50.0 MHz	2.5 x 2.0 x 0.5 mm
	<b>JXS32</b>	13.0 ~ 50.0 MHz	3.2 x 2.5 x 0.7 mm
	<b>JXS53</b>	10.0 ~ 55.0 MHz	5.0 x 3.2 x 0.8 mm
	<b>JXS75</b>	5.53 ~ 170.0 MHz	7.5 x 5.0 x 1.0 mm


SMD • JXE Series			
	Type	Frequency range	Size
	<b>JXE32</b> 4 Pad Version	16.0 ~ 50.0 MHz	3.2 x 2.5 x 0.7 mm <i>NRFND</i>
	<b>JXE42</b> 4 Pad Version	13.0 ~ 50.0 MHz	4.0 x 2.5 x 0.8 mm <i>NRFND</i>
	<b>JXE53</b> 2 Pad Version	12.0 ~ 67.0 MHz	5.0 x 3.2 x 1.0 mm <i>NRFND</i>
	<b>JXE63</b> 2 Pad Version	10.0 ~ 67.0 MHz	6.0 x 3.5 x 1.2 mm <i>NRFND</i>
	<b>JXE75</b> 2 Pad Version und 4 Pad Version	6.0 ~ 170.0 MHz	7.0 x 5.0 x 1.3 mm <i>NRFND</i>
	<b>JXE115</b> 4 Pad Version	3.579 ~ 5.999 MHz	11.8 x 5.5 x 2.1 mm <i>NRFND</i>


SMD • SMU Series			
	Type	Frequency range	Size
	<b>SMU2</b> 2 Pad Version	4.194 ~ 60.0 MHz	11.5 x 4.8 x 3.0 mm
	<b>SMU3</b> 2 Pad Version	3.277 ~ 60.0 MHz	11.5 x 4.8 x 4.0 mm
	<b>SMU4</b> 2 Pad Version	3.277 ~ 60.0 MHz	11.5 x 4.8 x 4.0 mm
	<b>SMU5</b> 4 Pad Version	3.579 ~ 60.0 MHz	13.1 x 5.0 x 5.0 mm

*NRFND* - Not recommended for new design




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SMD • Tuning Fork Crystal			
	Type	Frequency range	Size
	<b>NEW</b> <b>JTX310</b>	32.768 kHz	3.2 x 1.5 x 0.9 mm
	<b>JTX410</b>	32.786 kHz	4.1 x 1.5 x 0.8 mm
	<b>JTX520</b>	32.768 kHz	4.8 x 1.9 x 0.8 mm <i>NRFND</i>
	<b>SMQ32SL</b>	32.768 kHz	8.0 x 3.8 x 2.4 mm
	<b>SMQ32S</b>	32.768 kHz	9.0 x 3.4 x 3.0 mm <i>NRFND</i>
	<b>SMQ32</b>	32.768 kHz	13.2 x 4.9 x 4.5 mm <i>NRFND</i>
	<b>SM26F</b>	32.768 kHz	6.0 x 2.0 x 2.0 mm

SMD • MG3A			
	Type	Frequency range	Size
	<b>MG3A</b> 4 Pad Version	3.571 ~ 91.175 MHz	13.1 x 5.0 x 5.0 mm

SMD • Special types			
	Type	Frequency range	Size
	<b>JXS42</b>	12.0 ~ 12.99 MHz	4.0 x 2.5 x 0.8 mm

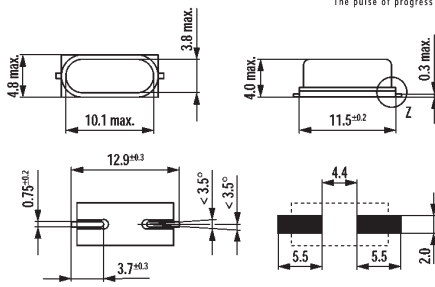
Pin Type • Metal Package			
	Type	Frequency range	Size
	<b>SS2</b>	8.0 ~ 70.0 MHz	11.3 x 4.7 x 2.5 mm
	<b>SS3</b>	3.276 ~ 70.0 MHz	11.3 x 4.7 x 3.6 mm
	<b>SS4</b>	3.276 ~ 64.0 MHz	11.3 x 4.7 x 3.6 mm
	<b>HC49/U</b>	0.921 ~ 250.0 MHz	10.8 x 4.5 x 13.0 mm
	<b>HC49/U SMC</b> SMD Version	0.921 ~ 250.0 MHz	17.5 x 10.8 x 5.3 mm
	<b>MO1 (UM-1)</b>	0.921 ~ 250.0 MHz	7.9 x 3.3 x 8.0 mm
	<b>MO1 SMC</b> SMD Version	0.921 ~ 250.0 MHz	11.7 x 7.8 x 3.4 mm
	<b>MO5 (UM-5)</b>	10.0 ~ 250.0 MHz	7.7 x 3.1 x 5.8 mm
	<b>MO5 SMC</b> SMD Version	10.0 ~ 250.0 MHz	9.7 x 7.7 x 3.4 mm
	<b>MTF38</b>	3.579 ~ 91.0 MHz	3.0 x 3.0 x 8.9 mm

Tuning Fork Crystal			
	Type	Frequency range	Size
	<b>MMTF32</b>	32.768 kHz	2.0 x 2.0 x 6.0 mm
	<b>MTF32</b>	32.768 kHz	3.0 x 3.0 x 8.0 mm <i>NRFND</i>

*NRFND* - Not recommended for new design

## SMD Quartz Crystals

### SMU4 Series

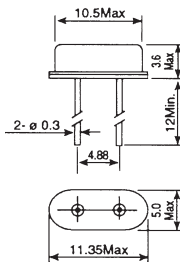


Technical parameters	SMU4
Frequency at 25 °C	±30ppm
Temperature coefficient	±50ppm
Temperature range	-20°C up to +70°C
Load capacitance	30pF
Dimensions	11,5x4,8x4mm

Part No.	Ord.No.
S Q 3,579545-SMU4-30-30/50	8056
S Q 3,6864-SMU4-30-30/50	8831
O Q 4,0-SMU4-30-30/50	8057
S Q 6,0-SMU4-30-30/50	9410
S Q 7,68-SMU4-30-30/50	43797
S Q 10,0-SMU4-30-30/30	9227
S Q 11,05920-SMU4-30-30/30	8058
S Q 12,0-SMU4-30-30/30	8055
S Q 18,432-SMU4-30-30/30	43974

## Pin Type Crystals - low-profile types

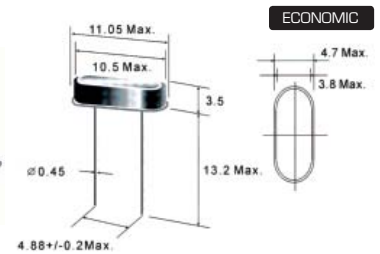
### SS4 Series



Technical parameters	SS4
Temperature coefficient	±30ppm/±50ppm
Temperature range	-20°C up to +70°C
Frequency at 25 °C	±30ppm
Load capacitance	30pF

Part No.	Ord. No.
S Q 24,576-SS4-30-30/30	3229
S Q-24-SS4-30-30/50	8272
S Q 3,6864-SS4-30-30/50	8921
S Q-22.1184-SS4-30-30/30	9270
S Q-3.57954-SS4-30-30/50	28530
S Q-4-SS4-30-30/50	28531
S Q 4,194304-SS4-30-30/50	28533
S Q 4,332-SS4-30-30/50	28534
S Q 4,433619-SS4-30-30/50	28535
S Q-4.9152-SS4-30-30/50	28536
S Q-6-SS4-30-30/50	28540
S Q 7,3728-SS4-30-30/50	28543
S Q-8-SS4-30-30/50	28544
S Q-9.216-SS4-30-30/50	28547
S Q-10,0-SS4-30-30/50	28549
S Q-11.0592-SS4-30-30/30	28550
S Q-12-SS4-30-30/50	28551
S Q-16-SS4-30-30/30	28556
S Q-20-SS4-30-30/30	28559
S Q 7,68-SS4-30-30/50	39931
S Q-14,7456-SS4-30-30/50	39933
S Q-18.432-SS4-30-30/50	39936
S Q-25-SS4-30-30/30	45169

## 6B Series



ECONOMIC

Technical parameters	6B
Temperature coefficient	±50ppm
Temperature range	-20°C up to +70°C
Frequency at 25 °C	±30ppm
Load capacitance	30pF

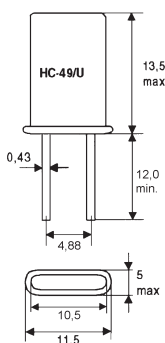
Part No.	Ord.No.
S Q 4,0 MHz U-4/6B	56231
S Q 6,0 MHz U-4/6B	56232
S Q 10,0 MHz U-4/6B	56233
S Q 11,0592 MHz U-4/6B	56234
S Q 12,0 MHz U-4/6B	56235
S Q 16,0 MHz U-4/6B	56236
S Q 20,0 MHz U-4/6B	56237
S Q 22,1184 MHz U-4/6B	56238

Wide range of different frequencies are available on offer. Samples and technical support from the manufacturer for announced projects.

As the official distributor of Jauch we are able to supply also other series of SMD quartz crystals, shown on page A48.

## Pin Type Crystals - high types

### HC49/U Series

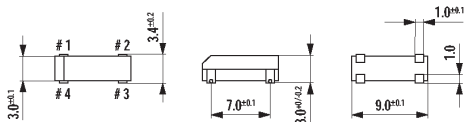


Technical parameters	HC49/U
Temperature coefficient	±30ppm
Temperature range	-20°C up to +70°C
Frequency at 25°C	±50ppm (to 3MHz), ±30ppm (above 3MHz)
Load capacitance	30pF

Part No.	Ord.No.
S Q 2,0 MHz HC-49/U	13723
S Q 3,2768 MHz HC-49/U	13726
S Q-3.579545-S-30-30/30	13733
S Q-4-S-30-30/30	13736
S Q 4,433619 MHz HC-49/U	13739
S Q 4,9152 MHz HC-49/U	13740
S Q-6-S-30-30/30	13747
S Q-8-S-30-30/30	13755
S Q-10-S-30-30/30	13759
S Q-16-S-30-30/30	13766
S Q-18.432-S-30-30/30	13772
S Q-20-S-30-30/30	13775
S Q-22.1184-S-30-30/30	13777
S Q-12-S-30-30/30	17929
S Q-7.3728-S-30-30/30	18284
S Q-2.4576-S-30-30/30	18286
S Q-3.6864-S-30-30/30	18454
S Q-1.8432-S-30-30/30	24804
S Q-11.0592-S-30-30/30	24809
S Q-24-S-30-30/30	24812
S Q 1,0 MHz HC-49/U	28529
S Q-14.7456-S-30-30/30	39920

## SMD Tuning Fork Crystals

### SMQ32S Series

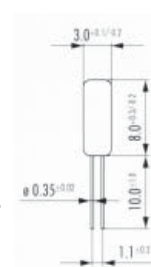


Technical parameters	SMQ32S
Temperature range	-20°C up to +70°C
Frequency at 25°C	±30ppm
Load capacitance	12,5pF

Part No.	Ord.No.
S Q-0.032768-SMQ32S-12.5-30	50926

## Tuning Fork Crystals

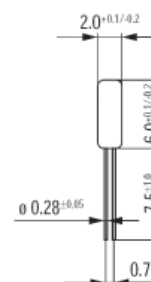
### MTF32 Series



Technical parameters	MTF32
Temperature range	-20°C up to +70°C
Frequency at 25°C	±20ppm
Load capacitance	12,5pF standard

Part No.	Ord.No.
S Q-0.032768-MTF32-12.5-20	13719

### MMTF32 Series



Technical parameters	MMTF32
Temperature range	-20°C up to +70°C
Frequency at 25°C	±20ppm
Load capacitance	12,5pF standard

Part No.	Ord.No.
S Q-0.032768-MMTF32-12.5-20	6344

Wide range of different frequencies are available on offer.

Samples and technical support from the manufacturer for announced projects.

As the official distributor of Jauch we are able to supply also other series of SMD quartz crystals, shown on page A48.

## Accessories

### Insulator



RM=4,9mm

Technical parameters	ISQ 04
Foil	MYLAR
Thickness	0,127mm
Dimensions	11,8x5,6mm
Heat resistance	250°C
Dielectric strength	9kV

Part No.	Ord.No.
S ISQ 04	4488

VX3 Series • XO			
	Type	Frequency range	Size
	VX3 (5.0 V) Tristate Function	0.5 ~ 107.0 MHz	7.0 x 5.0 x 1.6 mm
	VX3 (3.3 V) Tristate Function	0.5 ~ 70.0 MHz	7.0 x 5.0 x 1.6 mm
	VX3 (3.3 V) Stop Function	0.5 ~ 165.0 MHz	7.0 x 5.0 x 1.6 mm
	<b>NEW</b> VX3 (2.8 V) Stop Function	0.5 ~ 165.0 MHz	7.0 x 5.0 x 1.6 mm
	<b>NEW</b> VX3 (2.5 V) Stop Function	0.5 ~ 125.0 MHz	7.0 x 5.0 x 1.6 mm
	<b>NEW</b> VX3 (1.8 V) Stop Function	0.5 ~ 50.0 MHz	7.0 x 5.0 x 1.6 mm

JO75 Series • XO			
	Type	Frequency range	Size
	JO75 (5.0 V)	0.5 ~ 107.0 MHz	7.0 x 5.0 x 1.8 mm
	<b>NEW</b> JO75H (5.0 V)	1.8 ~ 50.0 MHz	7.0 x 5.0 x 1.4 mm
	JO75 (3.3 V)	0.5 ~ 170.0 MHz	7.0 x 5.0 x 1.8 mm
	<b>NEW</b> JO75H (3.3 V)	1.8 ~ 50.0 MHz	7.0 x 5.0 x 1.4 mm
	JO75 (3.3 V)	0.012 ~ 1.85 MHz	7.0 x 5.0 x 1.8 mm
	JO75 (2.8 V)	0.5 ~ 165.0 MHz	7.0 x 5.0 x 1.8 mm
	JO75 (2.5 V)	0.5 ~ 160.0 MHz	7.0 x 5.0 x 1.8 mm
	<b>NEW</b> JO75 (1.8 V)	0.5 ~ 160.0 MHz	7.0 x 5.0 x 1.8 mm

JO53 Series • XO			
	Type	Frequency range	Size
	JO53 (5.0 V)	0.5 ~ 110.0 MHz	5.0 x 3.2 x 1.4 mm
	JO53 (3.3 V)	0.5 ~ 125.0 MHz	5.0 x 3.2 x 1.4 mm
	<b>NEW</b> JO53H (3.3 V)	4.0 ~ 54.0 MHz	5.0 x 3.2 x 1.1 mm
	JO53 (3.0 V)	0.5 ~ 125.0 MHz	5.0 x 3.2 x 1.4 mm
	JO53 (2.8 V)	0.5 ~ 80.0 MHz	5.0 x 3.2 x 1.4 mm
	JO53 (2.5 V)	0.5 ~ 80.0 MHz	5.0 x 3.2 x 1.4 mm
	<b>NEW</b> JO53H (2.5 V)	4.0 ~ 54.0 MHz	5.0 x 3.2 x 1.1 mm
	<b>NEW</b> JO53 (1.8 V)	0.5 ~ 40.0 MHz	5.0 x 3.2 x 1.4 mm

JO32 Series • XO			
	Type	Frequency range	Size
	JO32 (3.3 V)	0.75 ~ 80.0 MHz	3.2 x 2.5 x 1.1 mm
	<b>NEW</b> JO32H (3.3 V)	4.0 ~ 54.0 MHz	3.2 x 2.5 x 0.9 mm
	JO32 (3.0 V)	0.75 ~ 80.0 MHz	3.2 x 2.5 x 1.1 mm
	JO32 (2.8 V)	0.75 ~ 80.0 MHz	3.2 x 2.5 x 1.1 mm
	JO32 (2.5 V)	0.75 ~ 80.0 MHz	3.2 x 2.5 x 1.1 mm
	<b>NEW</b> JO32H (2.5 V)	4.0 ~ 54.0 MHz	3.2 x 2.5 x 0.9 mm
	JO32 (1.8 V)	0.75 ~ 40.0 MHz	3.2 x 2.5 x 1.1 mm

JO22 Series • XO			
	Type	Frequency range	Size
	JO22 (3.3 V)	0.75 ~ 50.0 MHz	2.5 x 2.0 x 0.8 mm
	JO22 (3.0 V)	0.75 ~ 50.0 MHz	2.5 x 2.0 x 0.8 mm
	JO22 (2.8 V)	0.75 ~ 50.0 MHz	2.5 x 2.0 x 0.8 mm
	JO22 (2.5 V)	0.75 ~ 50.0 MHz	2.5 x 2.0 x 0.8 mm
	<b>NEW</b> JO22 (1.8 V)	0.75 ~ 50.0 MHz	2.5 x 2.0 x 0.8 mm

VX7 • XO programmed			
	Type	Frequency range	Size
	VX7 programmed	1.0 ~ 200.0 MHz	7.0 x 5.0 x 1.6 mm

JPO75 • XO programmed			
	Type	Frequency range	Size
	<b>NEW</b> JPO75 (3.3 V)	3.0 ~ 200.0 MHz	7.0 x 5.0 x 1.9 mm
	<b>NEW</b> JPO75 (2.5 V)	3.0 ~ 130.0 MHz	7.0 x 5.0 x 1.9 mm

JPO53 • XO programmed			
	Type	Frequency range	Size
	<b>NEW</b> JPO53 (3.3 V)	3.0 ~ 200.0 MHz	5.0 x 3.2 x 1.3 mm
	<b>NEW</b> JPO53 (2.5 V)	3.0 ~ 130.0 MHz	5.0 x 3.2 x 1.3 mm

JPO32 • XO programmed			
	Type	Frequency range	Size
	<b>NEW</b> JPO32 (3.3 V)	3.9 ~ 200.0 MHz	3.2 x 2.5 x 1.2 mm
	<b>NEW</b> JPO32 (2.5 V)	3.9 ~ 130.0 MHz	3.2 x 2.5 x 1.2 mm
	<b>NEW</b> JPO32 (1.8 V)	3.9 ~ 100.0 MHz	3.2 x 2.5 x 1.2 mm



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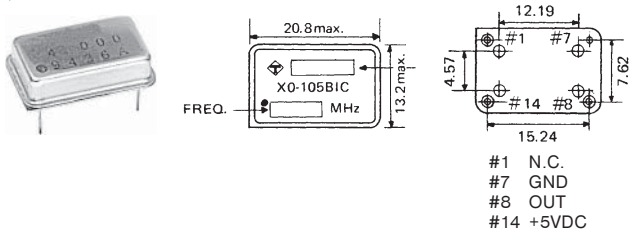
JPO22 • XO programmed			
	Type	Frequency range	Size
	<b>NEW</b> JPO22 (3.3V)	3.9 ~ 200.0 MHz	2.5 x 2.0 x 0.9 mm
	<b>NEW</b> JPO22 (2.5V)	3.9 ~ 130.0 MHz	2.5 x 2.0 x 0.9 mm
	<b>NEW</b> JPO22 (1.8V)	3.9 ~ 100.0 MHz	2.5 x 2.0 x 0.9 mm
JV75 Series • VCXO			
	Type	Frequency range	Size
	<b>NEW</b> JV75 (5.0 V)	1.0 ~ 80.0 MHz	7.5 x 5.0 x 1.8 mm
	<b>NEW</b> JV75 (3.3 V)	1.0 ~ 125.0 MHz	7.5 x 5.0 x 1.8 mm
JV53 Series • VCXO			
	Type	Frequency range	Size
	<b>NEW</b> JV53 (5.0 V)	2.0 ~ 54.0 MHz	5.0 x 3.2 x 1.0 mm
	<b>NEW</b> JV53 (3.3 V)	2.0 ~ 54.0 MHz	5.0 x 3.2 x 1.0 mm
JT75 • (VC)TCXO			
	Type	Frequency range	Size
	JT75(V)	10.0 ~ 26.0 MHz	7.0 x 5.0 x 1.6 mm
JT53 • (VC)TCXO			
	Type	Frequency range	Size
	JT53L(V)	5.0 ~ 45.0 MHz	5.0 x 3.2 x 1.1 mm
JT75 • (VC)TCXO			
	Type	Frequency range	Size
	JT75(V)	10.0 ~ 26.0 MHz	7.0 x 5.0 x 1.6 mm
JT53 • (VC)TCXO			
	Type	Frequency range	Size
	JT53L(V)	5.0 ~ 45.0 MHz	5.0 x 3.2 x 1.1 mm
JT32 • (VC)TCXO			
	Type	Frequency range	Size
	JT32(V)	8.0 ~ 45.0 MHz	3.2 x 2.5 x 1.1 mm
JOE75 • PECL			
	Type	Frequency range	Size
	<b>NEW</b> JOE75 (3.3 V)	50.0 ~ 170.0 MHz	7.5 x 5.2 x 1.6 mm
	<b>NEW</b> JOE75 (2.5 V)	62.5 ~ 165.0 MHz	7.5 x 5.2 x 1.6 mm
SMD • VCXO • PECL			
	Type	Frequency range	Size
	<b>NEW</b> JVE75A (3.3V)	50.0 ~ 700.0 MHz	7.5 x 5.0 x 2.0 mm
	<b>NEW</b> JVE75B (3.3V)	12.0 ~ 800.0 MHz	7.5 x 5.0 x 2.0 mm


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JOD75 • LVDS			
	Type	Frequency range	Size
	<b>NEW</b> JOD75 (3.3 V or 2.5 V)	80.0 ~ 170.0 MHz	7.5 x 5.2 x 1.6 mm
JVD Serie • VCXO • LVDS			
	Type	Frequency range	Size
	<b>NEW</b> JVD75A (3.3V)	12.0 ~ 700.0 MHz	7.5 x 5.0 x 1.6 mm
	<b>NEW</b> JVD75B (3.3V)	12.0 ~ 800.0 MHz	7.5 x 5.0 x 1.6 mm
JSS53 • Spread Spectrum			
	Type	Frequency range	Size
	<b>NEW</b> JSS53 (3.3V)	12.0 ~ 168.0 MHz	5.0 x 3.2 x 1.1 mm
JCO8 / JCO14 • Pin Type			
	Type	Frequency range	Size
	JCO8 (5.0 V)	1.0 ~ 160.0 MHz	12.8 x 12.8 x 5.3 mm
	JCO14 (5.0 V)	1.0 ~ 160.0 MHz	20.4 x 12.8 x 5.3 mm
	JCO8 (3.3 V)	1.0 ~ 160.0 MHz	12.8 x 12.8 x 5.3 mm
	JCO14 (3.3 V)	1.0 ~ 160.0 MHz	20.4 x 12.8 x 5.3 mm
JCO9xx Series • VCXO			
	Type	Frequency range	Size
	JCO925 (5.0 V)	1.843 ~ 40.0 MHz	12.8 x 12.8 x 5.3 mm
	JCO923 (5.0 V)	1.843 ~ 125.0 MHz	20.4 x 12.8 x 5.3 mm
	JCO926 (3.3 V)	1.843 ~ 40.0 MHz	12.8 x 12.8 x 5.3 mm
	JCO924 (3.3 V)	1.843 ~ 125.0 MHz	20.4 x 12.8 x 5.3 mm
SMD • JO42 Serie 32.768kHz			
	Type	Frequency range	Size
	<b>NEW</b> JO42 (3.3V)	32.768 kHz	4.0 x 2.5 x 0.9 mm
	<b>NEW</b> JO42 (2.8V)	32.768 kHz	4.0 x 2.5 x 0.9 mm
	<b>NEW</b> JO42 (2.5V)	32.768 kHz	4.0 x 2.5 x 0.9 mm
	<b>NEW</b> JO42 (1.8V)	32.768 kHz	4.0 x 2.5 x 0.9 mm
	<b>NEW</b> JO42 (1.5V)	32.768 kHz	4.0 x 2.5 x 0.9 mm

## Quartz Crystal Oscillators

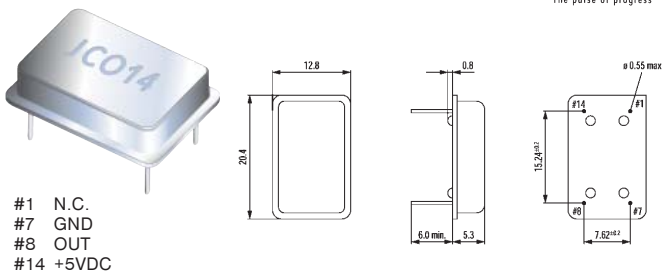
### QO105BIC Series



Technical parameters	QO 105 BIC
Frequency Stability Code	±50ppm
Temperature range	0°C up to +70°C
Power supply	5VDC
Output	CMOS/TTL
How to order	QO 105 BIC 40MHz

Part No.	Ord.No.
S QO 105 BIC 10MHz	19254
S QO 105 BIC 20MHz	19268
O QO 105 BIC 40MHz	24816
S QO 105 BIC 60MHz	24817
S QO 105 BIC 100MHz	39965

### JCO 14 Series

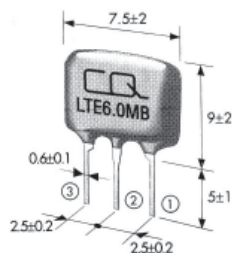


Technical parameters	JCO14
Frequency Stability Code	±50ppm
Temperature range	-10°C up to +70°C
Power supply	5VDC
Output	HCMOS - 3 phases
How to order	QO 33,0-JCO14-3-B

Part No.	Ord.No.
S O 33,0-JCO14-3-B	8060

As the official distributor of JAUCH we are able to supply also other quartz crystal oscillators series, shown on pages A51-A52.

## Ceramic Filters (band-pass filters)



Part No.	Description
KF 6,5MHz	6,5MHz, BW = 160kHz (3dB)
SFE 10,7 MA 5-A	10,7MHz, BW = 280kHz (3dB)

Part No.	Ord.No.
S KF 6,5 MHz	28890
S SFE 10,7 MA 5-A	39530

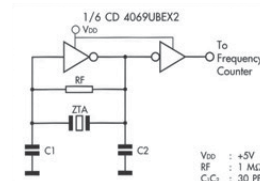
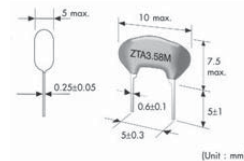
## Ceramic Resonators

### ZTA Series

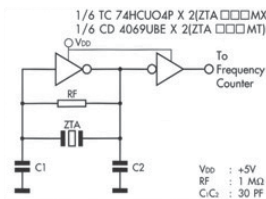
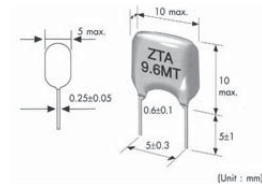


MG: 10x7,5x5  
MT: 10x10x5

#### ZTA 2...6MHz



#### ZTA 8...12MHz



Technical parameters	ZTA
Frequency tolerance	±0,5%
Temperature range	-20°C up to +80°C
Voltage sustaining capability	100VDC
How to order	ZTA 2,00 MG

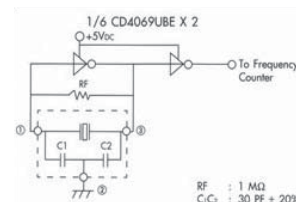
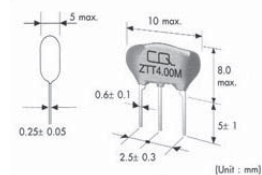
Part No.	Ord.No.
O ZTA2,00MG 2,00MHz	68796
O ZTA3,58MG 3,58MHz	60576
S ZTA4,00MG 4MHz	9005
O ZTA6,00MG 6MHz	68797
O ZTA8,00MT 8MHz	57465
O ZTA10,00MT 10MHz	68798
O ZTA12,00MT 12MHz	68799

### ZTT Series

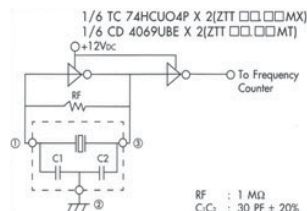
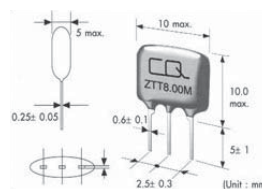


MG: 10x8x5  
MT: 10x10x5

#### ZTT 2...6MHz



#### ZTT 8...12MHz

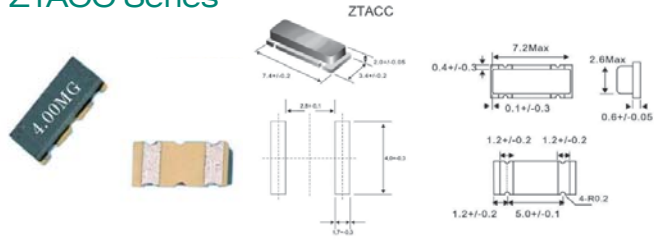


Technical parameters	ZTT
Frequency tolerance	±0,5%
Temperature range	-20°C up to +80°C
Voltage sustaining capability	100VDC
How to order	ZTT 2,00 MG

Part No.	Ord.No.
O ZTT2,00MG 2MHz	68808
O ZTT4,00MG 4MHz	62713
O ZTT6,00MG 6MHz	58409
O ZTT8,00MT 8MHz	72421
O ZTT12,00MT 12MHz	68885

## SMD Ceramic Resonators

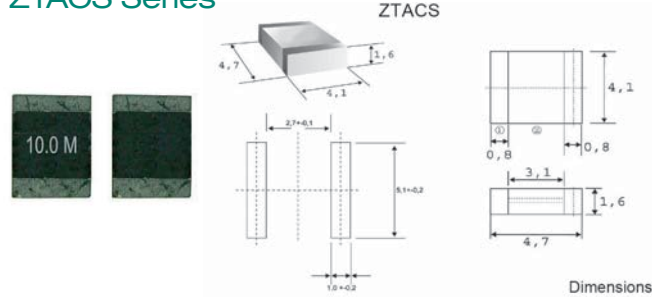
### ZTACC Series



Technical parameters	ZTACC
Frequency tolerance	±0,5%
Temperature range	-20°C up to +80°C
Voltage sustaining capability	30pF
How to order	ZTACC 2,00 MG

Part No.	Ord.No.
ZTACC2,00MG 2MHz	68770
ZTACC3,58MG 3,58MHz	68771
ZTACC4,00MG 4MHz	51980
ZTACC6,00MG 6MHz	68800

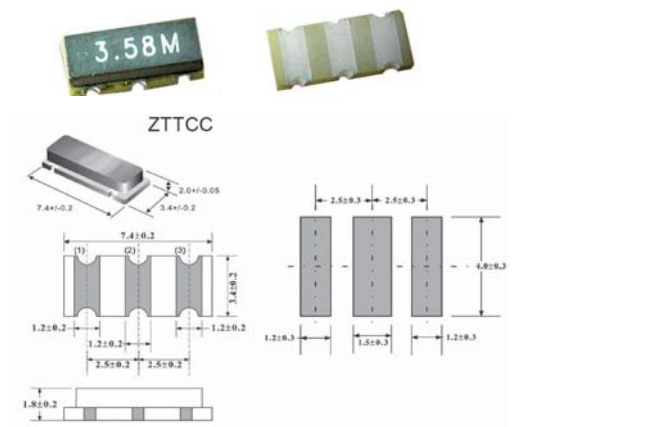
### ZTACS Series



Technical parameters	ZTACS
Frequency tolerance	±0,5%
Temperature range	-20°C up to +80°C
How to order	ZTACS 12,00 MT

Part No.	Ord.No.
ZTACS8,00MT 8MHz	68801
ZTACS10,00MT 10MHz	68802
ZTACS12,00MT 12MHz	68803

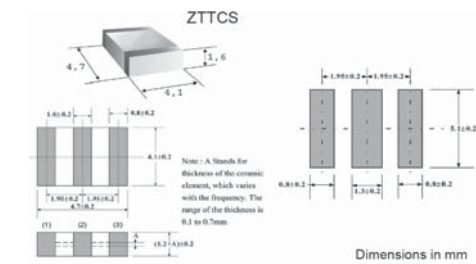
### ZTCC Series



Technical parameters	ZTCC
Frequency tolerance	±0,5%
Temperature range	-20°C up to +80°C
Load capacitance	22pF
How to order	ZTCC 2,00 MG

Part No.	Ord.No.
ZTCC2,00MG 2MHz	68772
ZTCC3,58MG 3,58MHz	68773
ZTCC4,00MG 4MHz	68774
ZTCC6,00MG 6MHz	68804

## ZTTCS Series



Technical parameters	ZTTCS
Frequency tolerance	±0,5%
Temperature range	-20°C up to +80°C
How to order	ZTTCS 12,00 MT

Part No.	Ord.No.
ZTTCS8,00MT 8MHz	68805
ZTTCS10,00MT 10MHz	68806
ZTTCS12,00MT 12MHz	68807

## KR Series



Technical parameters	KR
Frequency tolerance	±0,3%
Temperature range	-20°C up to +80°C
How to order	KR 429 kHz

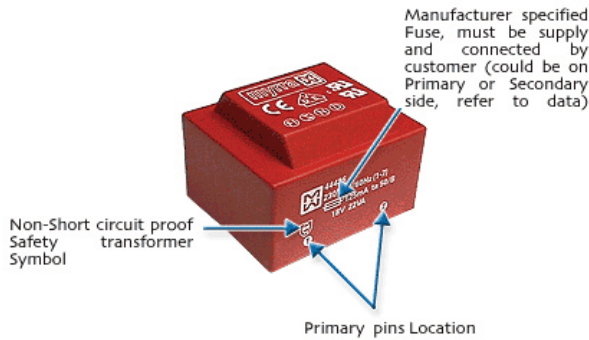
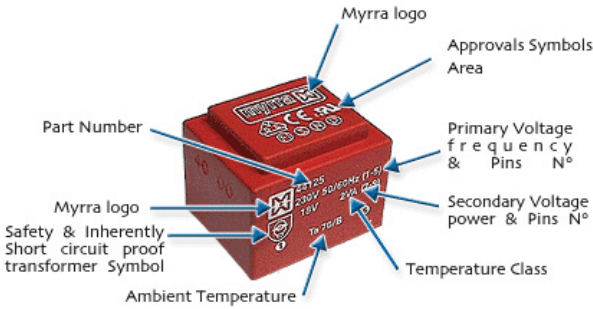
Part No.	Ord.No.
SR KR 429 KHZ (CSB429P)	30181
SR KR 455 KHZ (CSB455)	30182
SR KR 485 KHZ (CSB485)	30183
OR KR 500 KHZ (RS500KHZ)	30184

# More information needed?



SOSElectronic  
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www.soselectronic.com

## SOS electronic - the official distributor of Myrra transformers



### RATED PRIMARY VOLTAGE (V)

This is the supply voltage assigned to the transformer by the manufacturer.

### RATED SECONDARY VOLTAGE (V)

This is the secondary output voltage assigned to the transformer when supplied with the rated primary voltage, frequency range, rated secondary current, all assigned by the manufacturer for the specified operating conditions of the transformer.

### RATED POWER (VA)

The specified power levels in this catalogue are the secondary power levels, in other words, those available when the transformer is loaded. It is the product of the RMS rated secondary voltage by the RMS rated current. If the transformer has more than one output winding, the rated power denotes the maximum sum of the products of RMS rated secondary voltage by the RMS rated secondary current, respectively. This rated power is defined for rated ambient temperature conditions.

**example** :  $P = 3,2 \text{ VA T70/B}$

The transformer can deliver 3.2VA at maximum ambient (70°C), the load consisting of a resistor load defined by  $R(\text{load}) = U(\text{sec})_{\text{P}} / I(\text{sec})_{\text{P}}$  (assigned U sec & P values), heating does not exceed the relevant limit for Class B components used in this construction.

**NOTE** : When the transformer is intended to supply DC voltage and current in conjunction with rectifiers and smoothing capacitors, the VA power required from the transformer is far higher than the  $U(\text{DC})$  and  $I(\text{DC})$  product. To help you to determine the true transformer power, our Technical Department is at your disposal.

### AMBIENT TEMPERATURE ( $t_a$ )

The maximum temperature at which the transformer may be operated continuously under nominal conditions of use. It is the air temperature measured close to the transformer after thermal stabilization when operating at rated conditions.

### HEATING

The increase of the winding temperature when operating at rated conditions and maximum ambient temperature. The heating must be determined by the resistance method.

### TEMPERATURE CLASS

The international classification of temperature classes is as follows :

A	105°C	H	180°C
E	120°C	200	200°C
B	130°C	220	220°C
F	155°C	250	250°C

It defines the maximum temperature the transformer components must withstand in continuous operation, in compliance with the N° 85 IEC publication classification. There insulating materials are therefore certificated for the thermal index corresponding to the declared class in accordance with N° 216 IEC standard.

### PARTICULAR POINTS OF EN 61558-2-6 STANDARD FOR SAFETY TRANSFORMERS

On-load secondary voltage tolerance.

This should not differ from the rated value by more than :

10% for transformers with build-in resistance to short-circuits (a supplement of 5% is granted on the 2<sup>nd</sup> secondary for transformers with 2 secondaries).

Off-load secondary voltage.

**NOTE** : For safety transformers, this should never exceed 50 V rms. In the case of a transformer with several secondaries, the sum of the secondary voltages should be less than 50 V rms.

## Moulded Transformer for PCB

### 44000 Series



- Vacuum filling
- Two compartments bobbins
- Self-extinguishing plastics UL 94 V0
- Degree of protection IP 00
- 40 grams weight
- Resin class B CEI 85 (20 000 h testing to CEI 126)
- Inherently short-circuits proof
- Insulation voltage 4 KV (6 KV MYRRA test)
- 100% tested production
- Certification: CCA procedure on request

### 0,35VA

Please, find this serie of transformers on page A59.

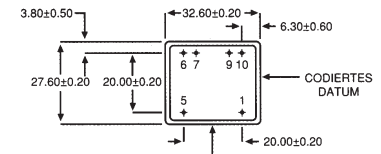
### 0,6VA - EI 30-5



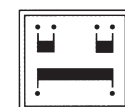
1x secondary winding



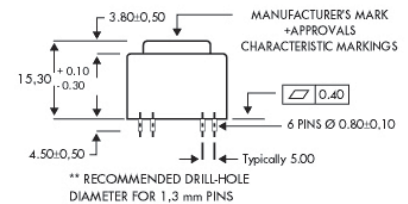
1x primary winding



2x secondary windings



1x primary winding



Original mark.	$U_{\text{sek}} [V]$	$I_{\text{sek}} [mA]$	$U_{\text{no-load}} [V]$	Amb.temp.	Protection
M44013	6	100	9,94	T 70 B	
M44014	9	66	14,95	T 70 B	
M44015	12	50	19,9	T 70 B	
M44019	2 x 6	2 x 50	2 x 9,94	T 70 B	short-circuit proof
M44020	2 x 9	2 x 33	2 x 14,95	T 70 B	
M44021	2 x 12	2 x 25	2 x 19,90	T 70 B	

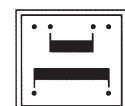
**Weight** 40g  
**Packaging** 25pcs

Part No.	Ord.No.
S 1X6V 0,6VA 230V	11600
S 1X9V 0,6VA 230V	11602
S 1X12V 0,6VA 230V	11603
O 2X6V 0,6VA 230V	11606
S 2X9V 0,6VA 230V	11607
S 2X12V 0,6VA 230V	48924

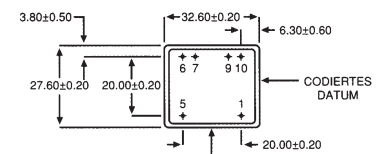
### 1VA - EI30-10,5



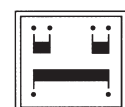
1secondary winding



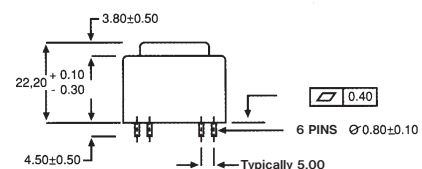
1x primary winding



2 secondary windings



1x primary winding



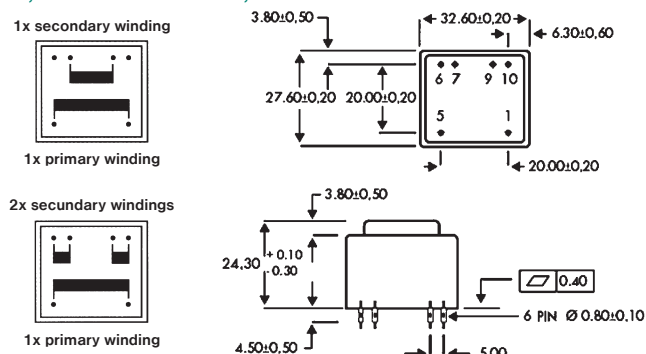


Original mark.	U <sub>sec</sub> [V]	I <sub>sec</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb.tem.	Protection
M44049	6	167	8,6	T 70 B	short-circuit proof
M44050	9	111	12,9	T 70 B	
M44051	12	83	17,2	T 70 B	
M44052	15	67	21,6	T 70 B	
M44055	2 x 6	2 x 83	2 x 8,6	T 70 B	
M44056	2 x 9	2 x 56	2 x 12,9	T 70 B	
M44057	2 x 12	2 x 42	2 x 19	T 70 B	
M44058	2x15	2 x 33	2 x 23,6	T 70 B	
M44060	2x24	2 x 21	2 x 37,9	T 70 B	

**Weight** 70g  
**Packaging** 25pcs

Part No.	Ord.No.
S 1x6V 1VA 230V	12848
S 1x9V 1VA 230V	12849
S 1x12V 1VA 230V	12850
S 1x15V 1VA 230V	12851
S 2x6V 1VA 230V	12852
S 2x9V 1VA 230V	12853
S 2x12V 1VA 230V	12854
S 2x15V 1VA 230V	12855
O 2x24V 1VA 230V	54676

## 1,5VA - EI 30-12,5

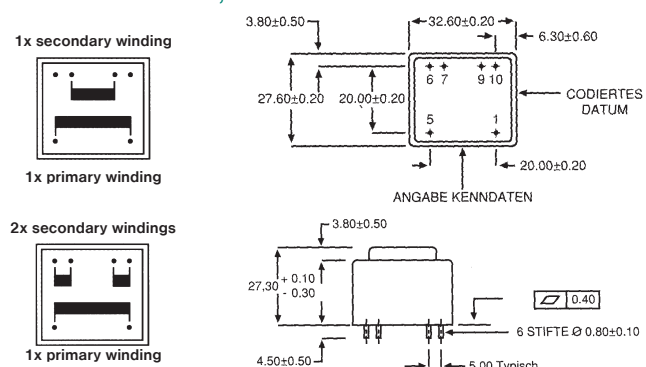


Original mark.	U <sub>sec</sub> [V]	I <sub>sec</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb. temp.	Protection
M44085	6	250	10,1	ta 70/B	short-circuit proof
M44087	12	125	20,2	ta 70/B	
M44089	18	83	29,8	ta 70/B	

**Weight** 80g  
**Packaging** 25pcs

Part No.	Ord.No.
S 1X6V 1,5VA 230V	12856
S 1X12V 1,5VA 230V	12857
S 1X18V 1,5VA 230V	53041

## 2VA - EI 30-15,5

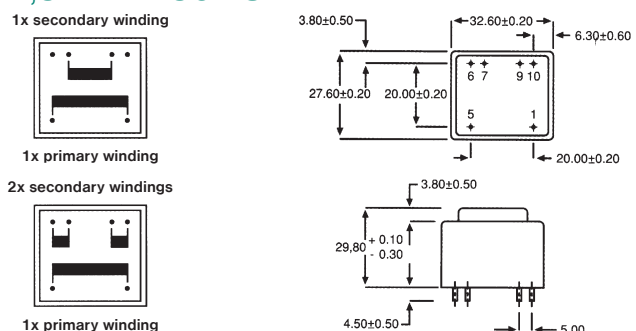


Original mark.	U <sub>sec</sub> [V]	I <sub>sec</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb.tem.	Protection
M44121	6	333	10,4	T 70 B	short-circuit proof
M44122	9	222	15,5	T 70 B	
M44123	12	167	20,7	T 70 B	
M44124	15	133	25,8	T 70 B	
M44125	18	111	30,8	T 70 B	
M44126	24	83	41,4	T 70 B	
M44127	2 x 6	2 x 167	2 x 10,4	T 70 B	
M44128	2 x 9	2 x 111	2 x 15,4	T 70 B	
M44129	2 x 12	2 x 83	2 x 20,7	T 70 B	
M44130	2 x 15	2 x 67	2 x 25,8	T 70 B	
M44131	2 x 18	2 x 56	2 x 30,8	T 70 B	
M44132	2 x 24	2 x 42	2 x 41,4	T 70 B	

**Weight** 100g  
**Packaging** 25pcs

Part No.	Ord.No.
S 1X6V 2VA 230V	12858
S 1X9V 2VA 230V	12859
S 1x12V 2VA 230V	12860
S 1X15V 2VA 230V	12861
S 1X18V 2VA 230V	12862
S 1x24V 2VA 230V	12863
S 2X6V 2VA 230V	12864
S 2X9V 2VA 230V	12865
S 2X12V 2VA 230V	12866
S 2X15V 2VA 230V	12867
S 2X18V 2VA 230V	12868
S 2X24V 2VA 230V	12869

## 2,3 VA - EI30-18



Original mark.	U <sub>sec</sub> [V]	I <sub>sec</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb.tem.	Protection
M44157	6	383	10,5	T 70 B	short-circuit proof
M44158	9	256	15,7	T 70 B	
M44159	12	192	21	T 70 B	
M44160	15	153	25,9	T 70 B	
M44162	24	96	41,9	T 70 B	
M44163	2 x 6	2 x 192	2 x 10,5	T 70 B	
M44164	2 x 9	2 x 128	2 x 15,7	T 70 B	
M44165	2 x 12	2 x 96	2 x 21	T 70 B	
M44166	2 x 15	2 x 77	2 x 25,9	T 70 B	

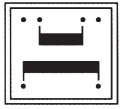
**Weight** 125g  
**Packaging** 25pcs

Part No.	Ord.No.
S 1X6V 2,3VA 230V	12870
S 1X9V 2,3VA 230V	12871
S 1x12V 2,3VA 230V	12872
S 1X15V 2,3VA 230V	12873
S 1X24V 2,3VA 230V	54824
O 2X6V 2,3VA 230V	12874
O 2X9V 2,3VA 230V	12875
S 2X12V 2,3VA 230V	12876
S 2X15V 2,3VA 230V	12877

## 3,2 VA - EI 38-13,6

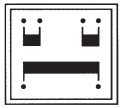


1x secondary winding

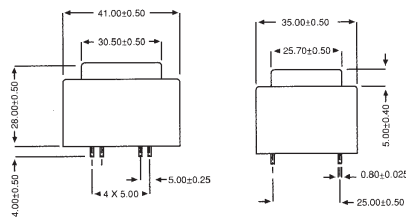


1x primary winding

2x secondary windings



1x primary winding



Original mark.	U <sub>sek</sub> [V]	I <sub>sek</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb.temp.	Sec. fuse
M44193	6	533	8	T 70 B	630 mA
M44194	9	356	12	T 70 B	400 mA
M44195	12	267	16	T 70 B	315 mA
M44196	15	213	20	T 70 B	250 mA
M44199	2 x 6	2 x 267	2 x 8	T 70 B	315 mA
M44200	2 x 9	2 x 178	2 x 12	T 70 B	200 mA
M44201	2 x 12	2 x 133	2 x 16	T 70 B	160 mA
M44202	2 x 15	2 x 107	2 x 20	T 70 B	125 mA
M44204	2 x 24	2 x 67	2 x 32,1	T 70 B	80 mA

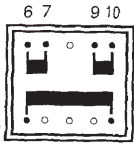
Weight 150g  
Packaging 25pcs

Part No.	Ord.No.
S 1X6V 3,2VA 230V	12878
S 1X9V 3,2VA 230V	12879
S 1X12V 3,2VA 230V	12880
S 1X15V 3,2VA 230V	12881
S 2X6V 3,2VA 230V	12882
S 2x9V 3,2VA 230V	12883
S 2X12V 3,2VA 230V	12884
S 2X15V 3,2VA 230V	12885
S 2X24V 3,2VA 230V	12887

## 5 VA - EI 42-14,8

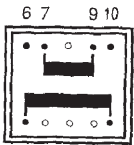


2x secondary windings

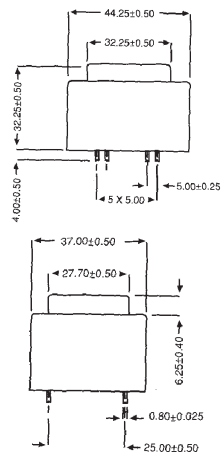


1x primary winding

1x secondary winding



1x primary winding



Original mark.	U <sub>sek</sub> [V]	I <sub>sek</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb.temp.	Sec. fuse
M44229	6	833	8,4	T 50 B	800mA
M44230	9	556	12,6	T 50 B	630mA
M44231	12	417	16,9	T 50 B	400mA
M44232	15	333	21	T 50 B	315mA
M44233	18	278	25,3	T 50 B	315mA
M44234	24	208	33,7	T 50 B	200mA
M44235	2 x 6	2 x 417	2 x 8,4	T 50 B	400mA
M44236	2 x 9	2 x 278	2 x 12,6	T 50 B	315mA
M44237	2 x 12	2 x 208	2 x 16,9	T 50 B	200mA
M44238	2 x 15	2 x 167	2 x 21	T 50 B	160mA
M44239	2 x 18	2 x 139	2 x 25,3	T 50 B	160mA
M44240	2 x 24	2 x 104	2 x 33,7	T 50 B	100mA

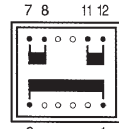
Weight 200g  
Packaging 20pcs

Part No.	Ord.No.
S 1X6V 5VA 230V	12889
S 1X9V 5VA 230V	12890
S 1x12V 5VA 230V	12891
S 1X15V 5VA 230V	12892
S 1X18V 5VA 230V	12893
S 1X24V 5VA 230V	12894
S 2X6V 5VA 230V	12895
S 2X9V 5VA 230V	12896
S 2X12V 5VA 230V	12897
S 2X15V 5VA 230V	12898
S 2X18V 5VA 230V	12899
S 2X24V 5VA 230V	12900

## 10 VA - EI 48-16,8

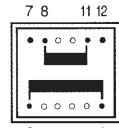


2x secondary windings

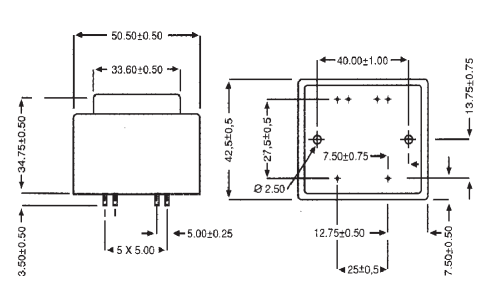


1x primary winding

1x secondary winding



1x primary winding



Original mark.	U <sub>sek</sub> [V]	I <sub>sek</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb.temp.	Prim. fuse
M44265	6	1667	7,2	T 50 B	63mA
M44266	9	1111	10,8	T 50 B	63mA
M44267	12	833	14,4	T 50 B	63mA
M44268	15	667	18,1	T 50 B	63mA
M44269	18	556	21,6	T 50 B	63mA
M44270	24	417	28,9	T 50 B	63mA
M44271	2 x 6	2 x 833	2 x 7,2	T 50 B	63mA
M44272	2 x 9	2 x 556	2 x 10,8	T 50 B	63mA
M44273	2 x 12	2 x 417	2 x 14,4	T 50 B	63mA
M44274	2 x 15	2 x 333	2 x 18,1	T 50 B	63mA
M44275	2 x 18	2 x 278	2 x 21,6	T 50 B	63mA
M44276	2 x 24	2 x 208	2 x 28,9	T 50 B	63mA

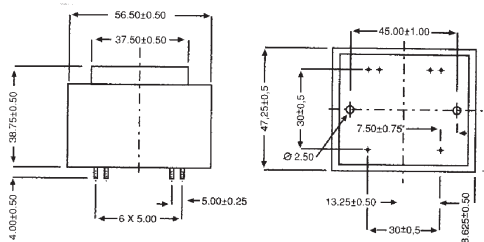
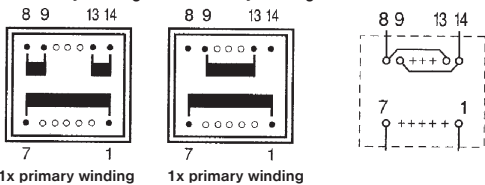
Weight 300g  
Packaging 20pcs

Part No.	Ord.No.
S 1X6V 10VA 230V	12901
S 1X9V 10VA 230V	12902
S 1X12V 10VA 230V	12903
S 1X15V 10VA 230V	12904
S 1X18V 10VA 230V	12905
S 1X24V 10VA 230V	12906
S 2X6V 10VA 230V	12907
S 2X9V 10VA 230V	12908
S 2X12V 10VA 230V	12909
S 2X15V 10VA 230V	12910
S 2X18V 10VA 230V	12911
S 2X24V 10VA 230V	12912

## 16 VA - EI 54-18,8



2x secondary windings 1x secondary winding



Original mark.	U <sub>sec</sub> [V]	I <sub>sec</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb.temp.	Sec. fuse
M44302	9	1778	11,1	T 50 B	2A
M44303	12	1333	14,7	T 50 B	1,25A
M44304	15	1067	18,4	T 50 B	1A
M44305	18	889	22,1	T 50 B	1A
M44306	24	667	29,3	T 50 B	0,63A
M44308	2 x 9	2 x 889	2 x 11,1	T 50 B	1A
M44309	2 x 12	2 x 667	2 x 14,7	T 50 B	0,63A
M44310	2 x 15	2 x 533	2 x 18,4	T 50 B	0,5A
M44311	2 x 18	2 x 444	2 x 22	T 50 B	0,5A
M44312	2 x 24	2 x 333	2 x 29,3	T 50 B	0,315A

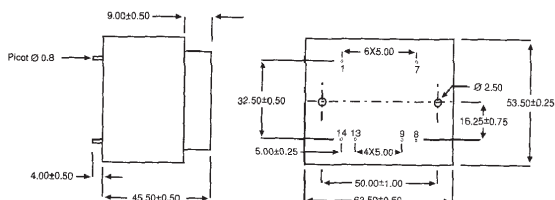
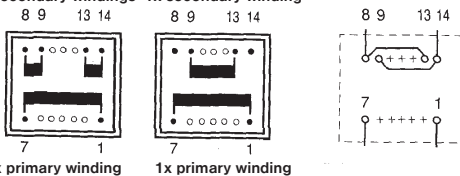
Weight 400g  
Packaging 10pcs

Part No.	Ord.No.
S 1X9V 16VA 230V	12913
S 1X12V 16VA 230V	12914
S 1X15V 16VA 230V	12915
S 1X18V 16VA 230V	12916
S 1X24V 16VA 230V	12917
S 2X9V 16VA 230V	12919
S 2X12V 16VA 230V	12920
S 2X15V 16VA 230V	12921
S 2X18V 16VA 230V	12922
O 2X24V 16VA 230V	12923

## 22 VA - EI 60-21



2x secondary windings 1x secondary winding



Original mark.	U <sub>sec</sub> [V]	I <sub>sec</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb.temp.	Prim. fuse
M44433	9	2444	10,3	T 50 B	125mA
M44434	12	1833	13,7	T 50 B	125mA
M44435	15	1467	17,1	T 50 B	125mA
M44436	18	1222	20,5	T 50 B	125mA
M44437	24	917	27,3	T 50 B	125mA
M44439	2 x 9	2 x 1222	2 x 10,3	T 50 B	125mA
M44440	2 x 12	2 x 917	2 x 13,7	T 50 B	125mA

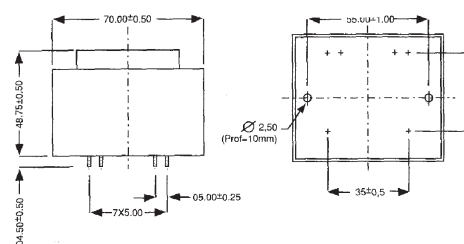
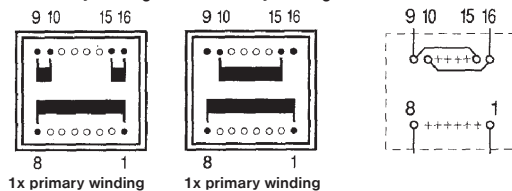
Weight 550g  
Packaging 10pcs

Part No.	Ord.No.
S 1X9V 22VA 230V	12932
S 1X12V 22VA 230V	12933
S 1X15V 22VA 230V	12934
S 1X18V 22VA 230V	12935
S 1X24V 22VA 230V	12936
S 2X9V 22VA 230V	12938
S 2X12V 22VA 230V	12939

## 30 VA - EI 66-23



2x secondary windings 1x secondary winding



Original mark.	U <sub>sec</sub> [V]	I <sub>sec</sub> [mA]	U <sub>no-load vol.</sub> [V]	Amb. temp.	Prim. fuse
M44375	12	2500	13,8	T 50 B	160mA
M44376	15	2000	17,2	T 50 B	160mA
M44378	24	1250	27,7	T 50 B	160mA
M44379	2 x 6	2 x 2500	2 x 6,9	T 50 B	160mA
M44380	2 x 9	2 x 1667	2 x 10,3	T 50 B	160mA
M44381	2 x 12	2 x 1250	2 x 13,8	T 50 B	160mA
M44382	2 x 15	2 x 1000	2 x 17,2	T 50 B	160mA
M44383	2 x 18	2 x 833	2 x 20,8	T 50 B	160mA
M44384	2 x 24	2 x 625	2 x 27,7	T 50 B	160mA

Weight 700g  
Packaging 5pcs

Part No.	Ord.No.
S 1X12V 30VA 230V	12924
S 1x15V 30VA 230V	12925
S 1X24V 30VA 230V	12926
S 2X6V 30VA 230V	59967
S 2X9V 30VA 230V	12927
S 2x12V 30VA 230V	12928
S 2X15V 30VA 230V	12929
S 2X18V 30VA 230V	12930
O 2x24V 30VA 230V	12931

Please, find more information at  
[www.soselectronic.com](http://www.soselectronic.com)

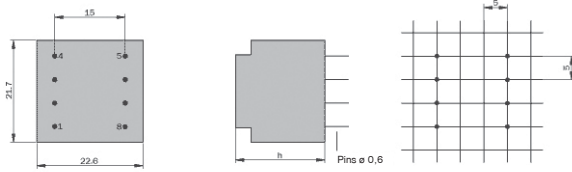
## BV201 Series



An extremely small low-voltage transformer for PCB installation. Vacuum cast. Its dimensions make it particularly suitable in applications where a low height is required. With double secondary windings which can be connected in series or in parallel. The transformer is short-circuit-proof.



## 0,35VA - EE20-6



Original mark.	$U_{sec}$ [V]	$I_{sec}$ [mA]	$U_{no-load vol.}$ [V]	Amb.tem.	Protection
BV2010128	6	58	10	ta 70/B	
BV2010136	9	39	36,8	ta 70/B	
BV2010145	12	29	20,8	ta 70/B	short-circuit proof
BV2010146	2x12	2x15	2x19,7	ta 70/B	short-circuit proof
<b>Weight</b>	25g				
<b>Packaging</b>	50pcs				

Part No.	Ord.No.
S BV2010128	3810
S BV2010136	42531
S BV2010145	12842
O BV2010146	49310

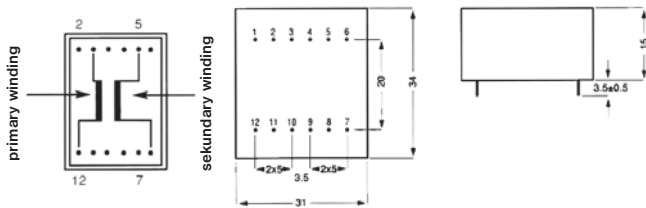
## Flat Core Transformers

### 45000 Series



- 115V-230V supply voltage by serie/parallel connection
- Vacuum filling
- One compartment housing
- Degree of protection IP 00
- 50 grams weight
- Resin UL 94 VO
- Design protection against short-circuits
- Insulation voltage 4 KV (6 KV MYRRA test)
- 100% tested production

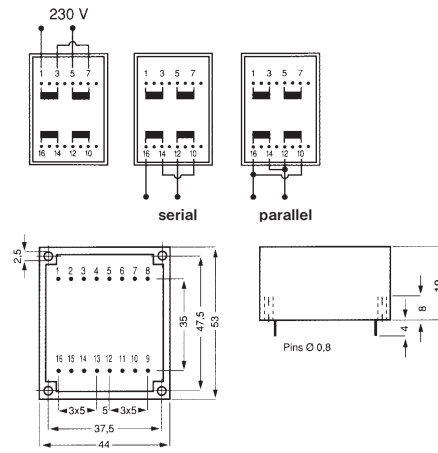
### 1VA - UI21



Original mark.	$U_{sec}$ [V]	$I_{sec}$ [mA]	$U_{no-load vol.}$ [V]	Amb.tem.	Protection
M45002	9	111	17	T70B	
M45003	12	83	22,8	T70B	
M45005	18	56	34,2	T70B	short-circuit proof
M45006	24	42	45,6	T70B	short-circuit proof
<b>Weight</b>	50g				
<b>Packaging</b>	9pcs				

Part No.	Ord.No.
S 1X9V 1VA 230V	54943
O 1x12V 1VA 230V	49720
S 1X18V 1VA 230V	12948
O 1x24V 1VA 230V	12949

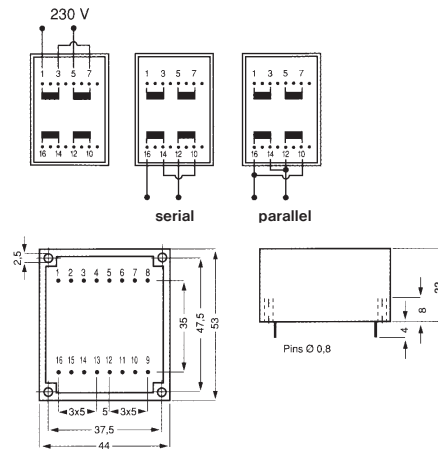
## 4VA - UI30x7,5



Original mark.	$U_{sec}$ [V]	$I_{sec}$ [mA]	$U_{no-load vol.}$ [V]	Amb.tem.	Sec. fuse
M45020	2x9	2x222	2x14	T70B	250mA
M45021	2x12	2x167	2x18,6	T70B	160mA
<b>Weight</b>	150g				
<b>Packaging</b>	9pcs				

Part No.	Ord.No.
S 2X9V 4VA 2x115V	12951
O 2X12V 4VA 2x115V	12952

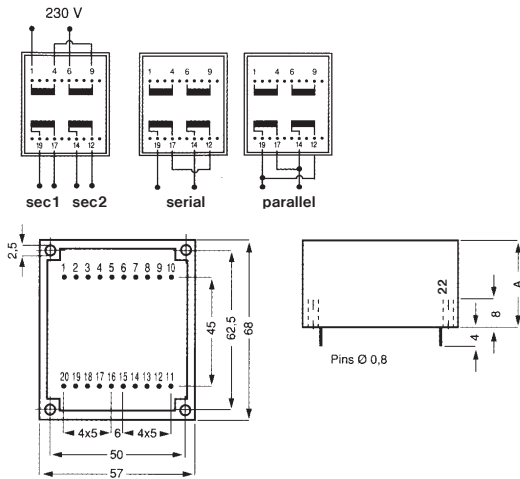
## 6VA - UI30x10,5



Original mark.	$U_{sec}$ [V]	$I_{sec}$ [mA]	$U_{no-load vol.}$ [V]	Amb.tem.	Sec. fuse
M45025	2x6	2x500	2x8,1	T70B	500mA
M45026	2x9	2x333	2x12,1	T70B	315mA
M45027	2x12	2x250	2x16,2	T70B	250mA
M45028	2x15	2x200	2x20,2	T70B	200mA
<b>Weight</b>	185g				
<b>Packaging</b>	9pcs				

Part No.	Ord.No.
O 2X6V 6VA 2x115V	12953
S 2X9V 6VA 2x115V	12954
S 2X12V 6VA 2x115V	12955
O 2X15V 6VA 2x115V	47090

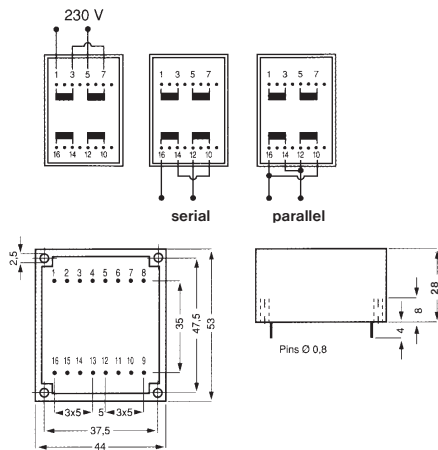
## 10VA - UI39x8



Original mark.	$U_{sec}$ [V]	$I_{sec}$ [mA]	$U_{no-load vol.}$ [V]	Amb.temp.	Prim. fuse
M45038	2x9V	2x555	2x12,7	T50B	63mA
M45039	2x12	2x416	2x16,9	T50B	63mA
<b>Weight</b>	285g				
<b>Packaging</b>	9pcs				

Part No.	Ord.No.
S 2X9V 10VA 2x115V	12958
S 2X12V 10VA 2x115V	12959

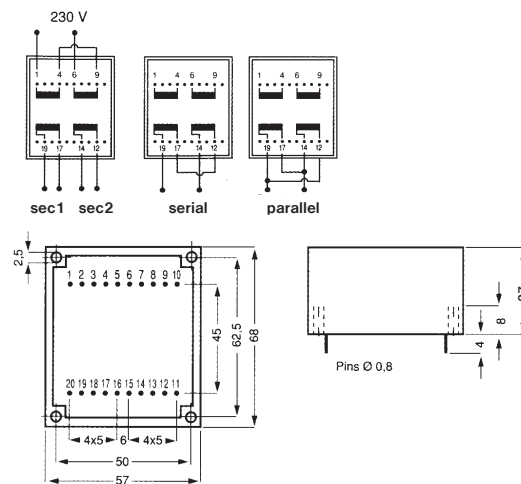
## 10VA - UI30x16,5



Original mark.	$U_{sec}$ [V]	$I_{sec}$ [mA]	$U_{no-load vol.}$ [V]	Amb.temp.	Prim. fuse
M45033	2x12	2x417	2x15,9	T50B	63mA
<b>Weight</b>	260g				
<b>Packaging</b>	9pcs				

Part No.	Ord.No.
S 2X12V 10VA 2x115V	12956

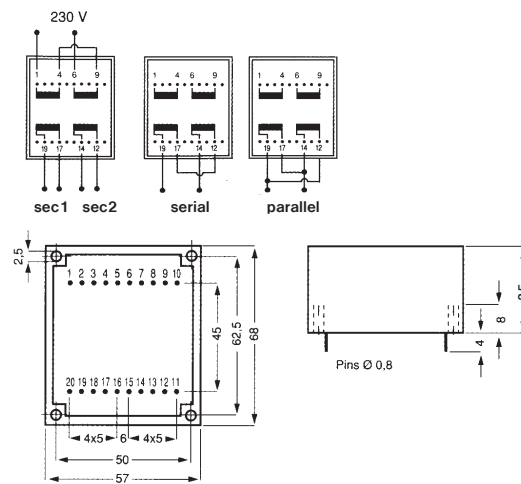
## 18VA - UI39x13,5



Original mark.	$U_{sec}$ [V]	$I_{sec}$ [mA]	$U_{no-load vol.}$ [V]	Amb.temp.	Prim. fuse
M45051	2x12	2x750	2x14,7	T50B	100mA
<b>Weight</b>	405g				
<b>Packaging</b>	9pcs				

Part No.	Ord.No.
S 2X12V 18VA 2X115V	12961

## 30VA - UI39x21



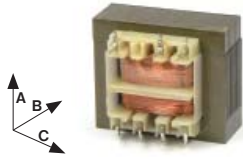
Original mark.	$U_{sec}$ [V]	$I_{sec}$ [mA]	$U_{no-load vol.}$ [V]	Amb.temp.	Prim. fuse
M45062	2x9	2x1667	2x10,15	T50B	160mA
M45063	2x12	2x1250	2x13,5	T50B	160mA
<b>Weight</b>	550g				
<b>Packaging</b>	9pcs				

Part No.	Ord.No.
S 2X9V 30VA 2x115V	12965
S 2X12V 30VA 2x115V	12966

## Low Power Mains Transformers

### TS - Series

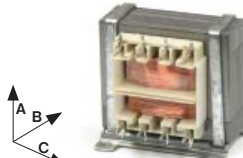
#### 2VA - EI 36/12,8



Core	A [mm]	B [mm]	C [mm]
EI 36/12,8	30	28,5	36

Solderable eyelets

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 2/15	1x10,1	1x0,22	78704
S TS 2/18	2x5,5	2x0,14	78705
S TS 2/012	2x8,5	2x0,1	78706

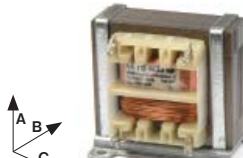


Core	A [mm]	B [mm]	C [mm]
EI 36/12,8	34	28,5	36

Solderable eyelets

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 2/035	1x12	1x0,17	78707
S TS 2/037	2x12	2x0,08	78708

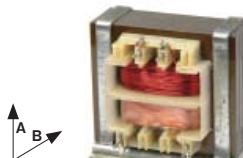
#### 4 - 5VA - EI 42/14



Core	A [mm]	B [mm]	C [mm]
EI 42/14	40	34	42

Solderable eyelets

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 4/33	1x9	1x0,3	78710
S TS 4/30	2x12	2x0,15	78709

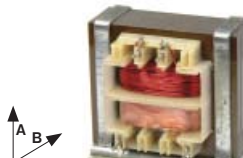


Core	A [mm]	B [mm]	C [mm]
EI 42/14	40	34	42

Solderable eyelets

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 4/023	1x12	1x0,33	78712
S TS 5/004	2x6	2x0,4	78713
S TS 4/011	2x9	2x0,25	78711

#### 6 - 8VA - EI 48/16

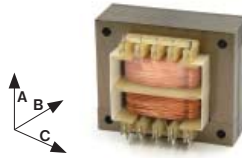


Core	A [mm]	B [mm]	C [mm]
EI 48/16	45,5	37	48

Solderable eyelets

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 6/34	1x10	1x0,5	78715
S TS 6/40	1x15,5	1x0,3	78786
S TS 8/022	2x6	2x0,65	78717
S TS 6/21	2x8,5	2x0,3	78714
S TS 8/018	2x12	2x0,33	78716

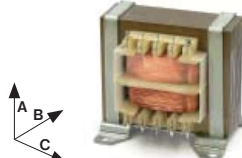
#### 12VA - EI 54/18



Core	A [mm]	B [mm]	C [mm]
EI 54/18	45	40,5	54

Solderable eyelets

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 12/006	2x9	2x0,65	78720
S TS 12/004	2x12	2x0,5	78718

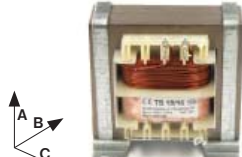


Core	A [mm]	B [mm]	C [mm]
EI 54/18	51,5	40,5	54

Solderable eyelets

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 12/013	1x9	1x1,3	78722
S TS 12/007	2x9	2x0,65	78721
S TS 12/005	2x12	2x0,5	78719

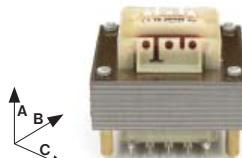
#### 12 - 20VA - EI60/20



Core	A [mm]	B [mm]	C [mm]
EI60/20	55	44	60

Solderable eyelets

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 18/16	1x12	1x1,4	78724
S TS 20/026	1x15,4	1x1,5	78727
S TS 18/12	2x6	2x1,3	78723
S TS 20/10	2x9	2x1	78725
S TS 20/023	2x12	2x0,8	78726



Core	A [mm]	B [mm]	C [mm]
EI60/20	44	50	60

PCB mount pins

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 20/036	1x12	1x1,7	78728

#### 25VA - EI 66/22



Core	A [mm]	B [mm]	C [mm]
EI 66/22	60	49	66

Solderable eyelets

Part No.	U <sub>sec</sub> [V]	I <sub>sec</sub> [A]	Ord.No.
S TS 25/010	1x12	1x2	78729
S TS 25/026	2x12	2x1,05	78730

#### 40VA - EI 66/33



Core	A [mm]	B [mm]	C [mm]
EI 66/33	60	60	66

Solderable eyelets

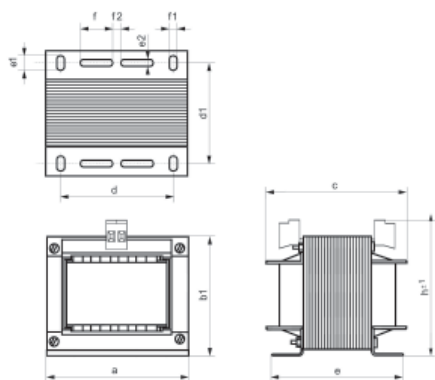
Part No.	$U_{sec}$ [V]	$I_{sec}$ [A]	Ord.No.
S TS 40/024	1x12	1x3,3	78734
S TS 40/030	1x16,3	1x2,5	78736
S TS 40/027	1x24	1x1,5	78735
S TS 40/016	2x6	2x3,3	78731
S TS 40/022	2x9	2x2,2	78733
S TS 40/018	2x12	2x1,65	78732
S TS 40/041	2x15	2x1,35	78737

## Mains Transformers with Mounting

### TMB Series



A series of mains transformers made on EI profile cores for panel mounting. Designed for DIN rail mounting in electronic devices, power equipment, and industrial installations. Manufactured in the power range of: 20 - 1000VA



Dimensions	a	b1	c	d	d1	e	e1	e2	f	f1	h
TMB 60	60	54	46	44	36	47	7	3,6	35	3,6	78
TMB 100	84	74	60	64	46	59	9	3,6	24	4,8	98
TMB 160	96	84	70	84	60	76	11	3,6	35	5,8	108
TMB 250	96	84	94	84	84	100	11	3,6	35	5,8	108

Part No.	Power [VA]	$U_{sec}$ [V]	$I_{sec}$ [A]	Core	Weight [Kg]
TMB 60/001M/1	60VA	1x12V	1x5A	EI78/27	1,2
TMB 60/002M/1	60VA	1x24V	1x2,5A	EI78/27	1,2
TMB 100/001M/1	100VA	1x12V	1x8,33A	EI84/29	1,3
TMB 100/002M/1	100VA	1x24V	1x4,17A	EI84/29	1,3
TMB 160/001M/1	160VA	1x12V	1x13,33A	EI96/36	2,0
TMB 160/002M/1	160VA	1x24V	1x6,67A	EI96/36	2,0
TMB 250/002M/1	250VA	1x24V	1x10,4A	EI96/60	3,2

Part No.	Ord.No.
S TMB 60/001M/1	80329
S TMB 60/002M/1	78738
S TMB 100/001M/1	78741
S TMB 100/002M/1	80144
S TMB 160/001M/1	78742
S TMB 160/002M/1	78739
S TMB 250/002M/1	78740

## Mains Transformers Sealed and Cased with Mounting



### TSZZM Series

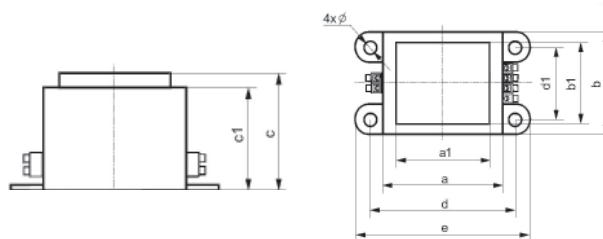
Series of mains transformers made on EI cores in enclosures. The housing fully protects transformer against humidity. These series of transformers are usually used as safety transformers. Cover the power output range: 0,6 - 100VA. Temperature class: T40B.



TSZZM 25



TSZZM 160



Dimensions	a	a1	b	b1	c	c1	d	d1	e	Ø
TSZZM 25	63,6	41,8	53,6	35,8	47,2	37,7	72,5	43,5	81,8	4,4
TSZZM 160	102	83	85	76	84	70	115	70	130	6,1

Part No.	Power [VA]	$U_{sec}$ [V]	$I_{sec}$ [A]	Core	Weight [Kg]
TSZZM 25/005M/1	25VA	1x12V	1x2,08A	EI60/21	0,60
TSZZM 25/013M/1	25VA	1x24V	1x1,04A	EI60/21	0,60
TSZZM 25/006M/1	25VA	2x12V	2x1,04A	EI60/21	0,60
TSZZM 160/007M	160VA	1x24V	1x6,7A	EI102/34	3,05

Part No.	Ord.No.
S TSZZM 25/005M/1	78743
S TSZZM 25/013M/1	80147
S TSZZM 25/006M/1	78744
S TSZZM 160/007M	78745

## Mains Transformers Sealed and Cased with DIN Rail Mounting

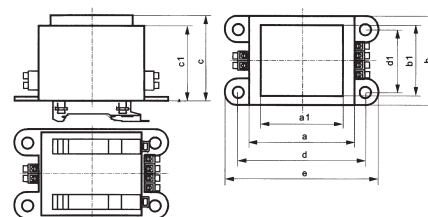


### TSZS Series



Series of mains transformers made on EI cores in enclosures. They are designed for DIN rail mounting. The housing fully protects transformer against humidity. These series of transformers are usually used as safety transformers. Cover the power output range: 16 up to 200VA.

Temperature class: T40B.



Dimensions	a	a1	b	b1	c	c1	d	d1	e	s
TSZS 016	58	39,6	49	42,7	43,2	33,4				18
TSZS 035	70	47,2	61,2	41,2	49,5	40	77,5	47,5	88	18
TSZS 070	80,6	55,7	67,5	48,3	60,5	50	90	57,50	100,00	18
TSZS 100	89,8	61,4	75,8	52	63	51,4	97,5	60,00	107,50	18

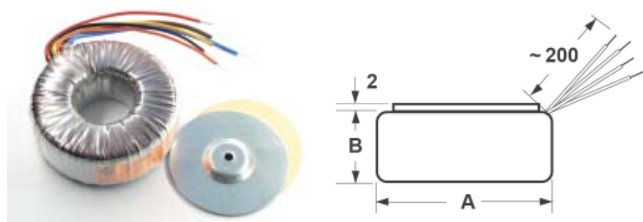
Part No.	Description	Core	$I_{sec}$ [A]	Weight
TSZS 016 / 005M	1X12V 16VA	EI54-18	1,33	0,5kg
TSZS 016 / 013M	1X24V 16VA	EI54-18	0,66	0,5kg
TSZS 030 / 005M	1X12V 30VA	EI60-25	2,5	0,75kg
TSZS 035 / 027M	1X24V 35VA	EI66-23	1,46	0,8kg
TSZS 070 / 003M	1X12V 70VA	EI78-27,5	5,83	1,2kg
TSZS 070 / 011M	1X24V 70VA	EI78-27,5	2,91	1,2kg
TSZS 100 / 002M	1X12V 100VA	EI84-29	8,33	1,3kg
TSZS 100 / 010M	1X24V 100VA	EI84-29	4,16	1,3kg

Part No.	Ord.No.
S TSZS 016 / 005M	68093
S TSZS 016 / 013M	68094
S TSZS 030 / 005M	68095
S TSZS 035 / 027M	70220
S TSZS 070 / 003M	68097
S TSZS 070 / 011M	68098
S TSZS 100 / 002M	68099
S TSZS 100 / 010M	68100

## Toroidal Transformers

### Standard Toroidal Transformers

Basic types suitable for industrial purposes and dry environments either. Transformer is snaped by thrust metal ring and two rubber rings. One of the rubber rings is used as the bearing under the transformer and ensures the separation from a surface mounted with transformer. The second rubber ring is inserted between thrust metal ring and transformer and is screwed altogether with a screw, which is not supplied in a delivery.



### 15 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 100-P1S2	15VA	2x12V	62	32	0,31
55 101-P1S2	15VA	2x15V	62	32	0,31
55 103-P1S2	15VA	2x25V	62	32	0,31

Part No.	Ord.No.
o 55 100-P1S2	75665
o 55 101-P1S2	75666
o 55 103-P1S2	75667

### 30 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 110-P1S2	30VA	2x12V	74	34	0,44
55 111-P1S2	30VA	2x15V	74	34	0,44
55 112-P1S2	30VA	2x18V	74	34	0,44
55 113-P1S2	30VA	2x25V	74	34	0,44

Part No.	Ord.No.
o 55 110-P1S2	75668
o 55 111-P1S2	75669
o 55 112-P1S2	75670
o 55 113-P1S2	75671

### 50 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 120-P1S2	50VA	2x12V	84	34	0,63
55 121-P1S2	50VA	2x15V	84	34	0,63
55 122-P1S2	50VA	2x18V	84	34	0,63
55 123-P1S2	50VA	2x25V	84	34	0,63
55 129-P1S2	50VA	2x55V	84	34	0,63

Part No.	Ord.No.
o 55 120-P1S2	75672
o 55 121-P1S2	75673
o 55 122-P1S2	75674
o 55 123-P1S2	75675
o 55 129-P1S2	75676

### 80 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 130-P1S2	80VA	2x12V	95	36	0,87
55 131-P1S2	80VA	2x15V	95	36	0,87
55 132-P1S2	80VA	2x18V	95	36	0,87
55 133-P1S2	80VA	2x25V	95	36	0,87
55 139-P1S2	80VA	2x55V	95	36	0,87

Part No.	Ord.No.
s 55 130-P1S2	75677
s 55 131-P1S2	75678
s 55 132-P1S2	75679
o 55 133-P1S2	75680
o 55 139-P1S2	75681

### 120 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 140-P1S2	120VA	2x12V	96	47	1,20
55 141-P1S2	120VA	2x15V	96	47	1,20
55 142-P1S2	120VA	2x18V	96	47	1,20
55 143-P1S2	120VA	2x25V	96	47	1,20
55 149-P1S2	120VA	2x55V	96	47	1,20

Part No.	Ord.No.
s 55 140-P1S2	75682
o 55 141-P1S2	75683
o 55 142-P1S2	75684
s 55 143-P1S2	75685
o 55 149-P1S2	75686

### 160 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 150-P1S2	160VA	2x12V	110	46	1,50
55 151-P1S2	160VA	2x15V	110	46	1,50
55 152-P1S2	160VA	2x18V	110	46	1,50
55 153-P1S2	160VA	2x25V	110	46	1,50
55 154-P1S2	160VA	2x30V	110	46	1,50
55 159-P1S2	160VA	2x55V	110	46	1,50

Part No.	Ord.No.
s 55 150-P1S2	75687
o 55 151-P1S2	75688
o 55 152-P1S2	75689
s 55 153-P1S2	75690
s 55 154-P1S2	75691
o 55 159-P1S2	75692

### 225 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 160-P1S2	225VA	2x12V	118	50	1,90
55 161-P1S2	225VA	2x15V	118	50	1,90
55 162-P1S2	225VA	2x18V	118	50	1,90
55 163-P1S2	225VA	2x25V	118	50	1,90
55 164-P1S2	225VA	2x30V	118	50	1,90
55 169-P1S2	225VA	2x55V	118	50	1,90

Part No.	Ord.No.
s 55 160-P1S2	75693
o 55 161-P1S2	75694
o 55 162-P1S2	75695
s 55 163-P1S2	75696
s 55 164-P1S2	75697
o 55 169-P1S2	75698

### 300 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 173-P1S2	300VA	2x25V	118	60	2,40
55 174-P1S2	300VA	2x30V	118	60	2,40
55 175-P1S2	300VA	2x35V	118	60	2,40
55 179-P1S2	300VA	2x55V	118	60	2,40

Part No.	Ord.No.
s 55 173-P1S2	75699
s 55 174-P1S2	75700
s 55 175-P1S2	75701
o 55 179-P1S2	75702



## 500 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 183-P1S2	500VA	2x25V	140	62	3,50
55 184-P1S2	500VA	2x30V	140	62	3,50
55 185-P1S2	500VA	2x35V	140	62	3,50
55 186-P1S2	500VA	2x40V	140	62	3,50
55 187-P1S2	500VA	2x45V	140	62	3,50
55 188-P1S2	500VA	2x50V	140	62	3,50
55 189-P1S2	500VA	2x55V	140	62	3,50

Part No.	Ord.No.
o 55 183-P1S2	75703
o 55 184-P1S2	75704
o 55 185-P1S2	75705
o 55 186-P1S2	75706
o 55 187-P1S2	75707
o 55 188-P1S2	75708
o 55 189-P1S2	75709

## 625 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 196-P1S2	625VA	2x40V	140	75	4,40
55 197-P1S2	625VA	2x45V	140	75	4,40
55 198-P1S2	625VA	2x50V	140	75	4,40
55 199-P1S2	625VA	2x55V	140	75	4,40

Part No.	Ord.No.
o 55 196-P1S2	75710
o 55 197-P1S2	75711
o 55 198-P1S2	75712
o 55 199-P1S2	75713

## 800 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 206-P1S2	800VA	2x40V	165	65	5,30
55 207-P1S2	800VA	2x45V	165	65	5,30
55 208-P1S2	800VA	2x50V	165	65	5,30
55 209-P1S2	800VA	2x55V	165	65	5,30

Part No.	Ord.No.
o 55 206-P1S2	75714
o 55 207-P1S2	75715
o 55 208-P1S2	75716
o 55 209-P1S2	75717

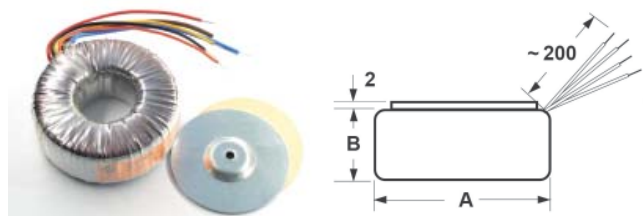
## 1000 VA

Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
55 216-P1S2	1000VA	2x40V	165	75	6,40
55 217-P1S2	1000VA	2x45V	165	75	6,40
55 218-P1S2	1000VA	2x50V	165	75	6,40
55 219-P1S2	1000VA	2x55V	165	75	6,40

Part No.	Ord.No.
o 55 216-P1S2	75718
o 55 217-P1S2	75719
o 55 218-P1S2	75720
o 55 219-P1S2	75721

## Toroidal Transformers for Halogen Lamps

Transformer is snapped by thrust metal ring and two rubber rings. One of the rubber rings is used as the bearing under the transformer and ensures the separation from a surface mounted with transformer. The second rubber ring is inserted between thrust metal ring and transformer and is screwed altogether with a screw, which is not supplied in a delivery.

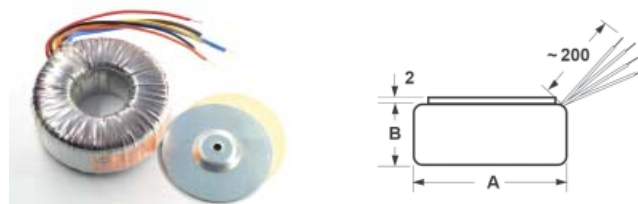


Part No.	Power [W]	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
56 021-P1S1	15VA	1x11,8V	62	32	0,31
56 022-P1S1	30VA	1x11,8V	74	34	0,44
56 001-P1S1	50VA	1x11,8V	84	34	0,63
56 002-P1S1	80VA	1x11,8V	95	36	0,87
56 003-P1S1	120VA	1x11,8V	96	47	1,20
56 004-P1S1	160VA	1x11,8V	110	46	1,50
56 005-P1S1	200VA	1x11,8V	116	48	1,90
56 006-P1S1	250VA	1x11,8V	118	55	2,20
56 007-P1S1	300VA	1x11,8V	118	60	2,40
56 008-P1S1	400VA	1x11,8V	140	55	3,10
56 009-P1S1	500VA	1x11,8V	140	62	3,50

Part No.	Ord.No.
o 56 021-P1S1	75731
o 56 022-P1S1	75732
o 56 001-P1S1	75733
o 56 002-P1S1	75734
o 56 003-P1S1	75735
o 56 004-P1S1	75736
o 56 005-P1S1	75737
o 56 006-P1S1	75738
o 56 007-P1S1	75739
o 56 008-P1S1	75740
o 56 009-P1S1	75741

## Safety Toroidal Transformers with Thermal Recoverable Protection 110°C

Transformer is snapped by thrust metal ring and two rubber rings. One of the rubber rings is used as the bearing under the transformer and ensures the separation from a surface mounted with transformer. The second rubber ring is inserted between thrust metal ring and transformer and is screwed altogether with a screw, which is not supplied in a delivery.



Part No.	Power	U <sub>sec</sub> [V]	A [mm]	B [mm]	Weight [kg]
56 031-P1S1	15VA	1x11,8V	62	32	0,31
56 032-P1S1	30VA	1x11,8V	74	34	0,44
56 011-P1S1	50VA	1x11,8V	84	34	0,63
56 012-P1S1	80VA	1x11,8V	95	36	0,87
56 012024-P1S2	100VA	1x12V 1x24V	96	40	1,00
56 013-P1S1	120VA	1x11,8V	96	47	1,20
56 014-P1S1	160VA	1x11,8V	110	46	1,50
56 015-P1S1	200VA	1x11,8V	116	48	1,90
56 016-P1S1	250VA	1x11,8V	118	55	2,20
56 017-P1S1	300VA	1x11,8V	118	60	2,40

Part No.	Ord.No.
o 56 031-P1S1	75722
o 56 032-P1S1	75723
o 56 011-P1S1	75724
o 56 012-P1S1	75725
o 56 012024-P1S2	75927
o 56 013-P1S1	75726
o 56 014-P1S1	75727
o 56 015-P1S1	75728
o 56 016-P1S1	75729
o 56 017-P1S1	75730

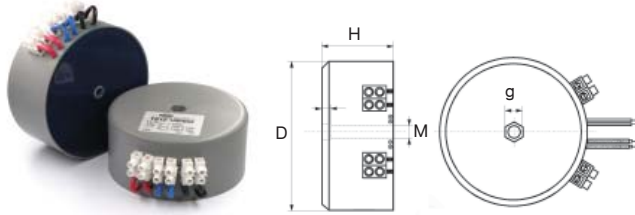
## Toroidal Mains Transformers Sealed and Cased



### TSTZ Series

A series of mains transformers made on toroidal cores, sealed and cases. Resistant to moisture and aggressive external factors. Commonly used in professional and amateur electronics. Designed for incorporation into supply systems of electronic devices and power equipment.

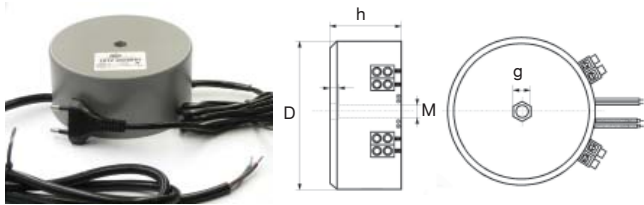
Manufactured in the power range of: 20 - 1000VA



Part No.	Power [VA]	U <sub>sec</sub> [V]	H [mm]	D [mm]	g/M [mm]	Weight [Kg]
TSTZ 50/001	50VA	1x12V	39	72	7/5,1	0,7
TSTZ 50/003	50VA	1x24V	39	72	7/5,1	0,7
TSTZ 50/002	50VA	2x12V	39	72	7/5,1	0,7
TSTZ 100/001	100VA	1x12V	44	95	10/6,1	1,4
TSTZ 100/003	100VA	1x24V	44	95	10/6,1	1,4
TSTZ 100/002	100VA	2x12V	44	95	10/6,1	1,4
TSTZ 150/001	150VA	1x12V	52	103	10/6,1	2,0
TSTZ 150/003	150VA	1x24V	52	103	10/6,1	2,0

Part No.	Ord.No.
S TSTZ 50/001	78746
S TSTZ 50/003	78752
S TSTZ 50/002	78747
S TSTZ 100/001	78748
S TSTZ 100/003	78753
S TSTZ 100/002	78749
S TSTZ 150/001	78750
S TSTZ 150/003	78751

### Toroidal Transformers for Halogen Lamps



Part No.	Power [VA]	U <sub>sec</sub> [V]	H [mm]	D [mm]	g/M [mm]	Weight [Kg]
TSTZ 100/001H	100VA	1x11,5V	44	95	10/6,1	1,4
TSTZ 200/001H	200VA	1x11,5V	75	103	10/6,1	3,0

Part No.	Ord.No.
S TSTZ 100/001H	78746
S TSTZ 200/001H	78752

### Electronic Transformers for Halogen Lamps



A series of electronic transformers designed for supplying low voltage halogen bulbs with rated voltage of 12V. Commonly used for total enclosed halogen bulb sockets. Through to their modern design, especially low weight and size, other technical advantages, they create special possibilities of designing modern and power saving illumination systems.



Dimensions	A [mm]	B [mm]	C [mm]
	71,5	35	23,4

Part No.	Power [VA]	U <sub>out</sub> [V]	I <sub>in</sub> [A]	Core	Weight [g]
YT 50	0-50VA	11,5V	0,22A	EI78/27	75
YT 60	0-60VA	11,5V	0,27A	EI78/27	75

Part No.	Ord.No.
S YT 50	78755
S YT 60	78756



Dimensions	A [mm]	B [mm]	C [mm]
	173	54	38

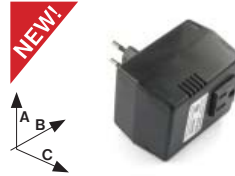
Part No.	Power [VA]	U <sub>out</sub> [V]	I <sub>in</sub> [A]	Weight [g]
YT 70	0-70VA	11,5V	0,33A	115
YT 105	0-105VA	11,5V	0,46A	120
YT 150	0-150VA	11,5V	0,65A	235
YT 210	0-210VA	11,5V	0,93A	285
YT 250	0-250VA	11,5V	1,10A	285

Part No.	Ord.No.
S YT 70	78757
S YT 105	78758
S YT 150	80136
S YT 210	80138
S YT 250	80139

### Autotransformers 230ac/110Vac



A series of mains autotransformers with fixed taps made on toroidal and EI profile cores in complete casings with sockets and connections to the mains. Designed for supplying electronic devices and power supplying American or Canadian equipment in Europe. Manufactured in the power range of: 25-3500VA



Dimensions	A [mm]	B [mm]	C [mm]
ATS25	64	82	73

Part No.	Ord.No.
S ATS25-230V/115V	78759



Dimensions	A [mm]	B [mm]	C [mm]
ATST0100	47	110	90

Part No.	Ord.No.
S ATST0100-230V/115V	78760



Dimensions	A [mm]	B [mm]	C [mm]
ATST0200	50	120	149

Part No.	Ord.No.
S ATST0200-230V/115V	78761

**NEW!**



Dimensions	A [mm]	B[mm]	C[mm]
ATST400	59	138	159
ATST600	90	178	149

Part No.	Ord.No.
S ATST0400-230V/115V	78762

**NEW!**

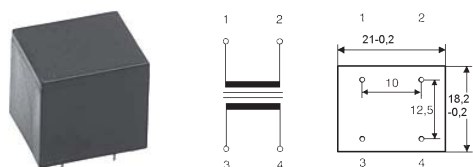


Dimensions	A [mm]	B[mm]	C[mm]
ATST1000	80	195	160
ATST1500	80	195	160

Part No.	Ord.No.
S ATST1000-230V/115V	78764
S ATST1500-230V/115V	80143

## Safety Transformers

### SV Series



Part No.	Ratio	R <sub>prim./Rsec.</sub> [Ω]
SV1500	1:1	4,6 / 4,6
SV1503	1:4	4,6 / 115
SV1505	1:10	4,6 / 340

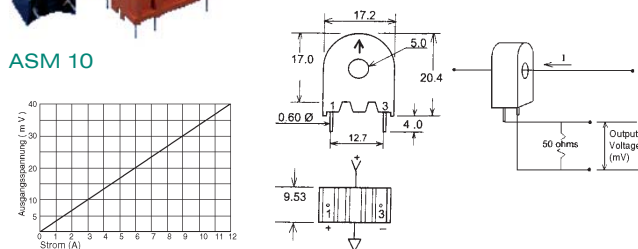
Part No.	Ord.No.
S SV1500	6955
S SV1503	6956
S SV1505	6957

## Current Transformers

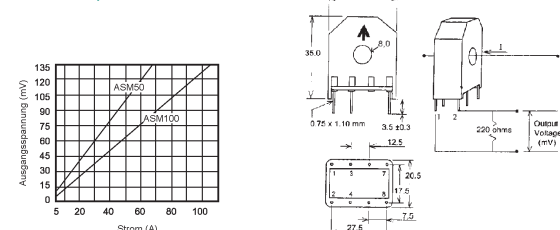
### ASM Series



- Fully encapsulated for optimal PC board mounting
- Mains frequency of 50/60 Hz
- Primary current ratings from 1 to 100 Amps
- Primary to secondary isolated to 2500 VAC
- Allowance: 10%



### ASM 50, 100

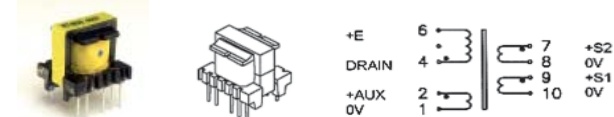


Part No.	Ord.No.
S ASM 10	7705
S ASM 50	9337
S ASM 100	9181

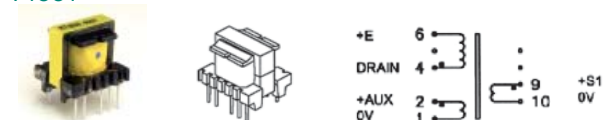
## Transformers for Power Switching Supplies



### 74000



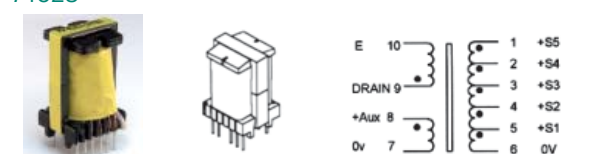
### 74001



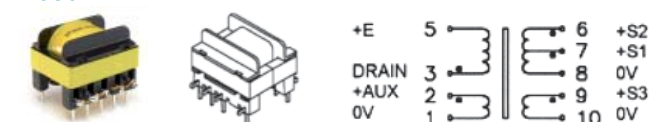
### 74010



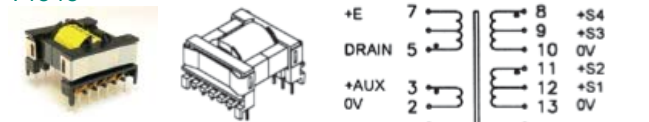
### 74023



### 74030



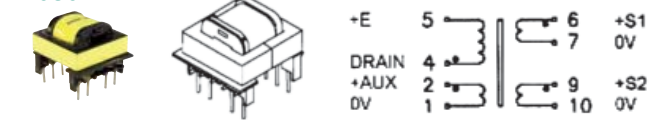
### 74040



### 74050



### 74080



Part No.	Core	Max. power	Rated output voltage V <sub>DC</sub>			Control IC P/N	
74000	E16	5W	5V	12V		VIPer20	
74001	E16	6W	5V			TDA16831	
74010	E16	12W	5V	12V		TDA16831	
74023	EL19	16W	3.3V	5V	12V	30V	TOP243P
74030	E25	30W	5V	12V	12V		TDA16832
74040	ETD29	60W	5V	12V	5V	12V	TDA16834
74050	ETD34	90W	5V	12V	5V	12V	TDA16834
74080	EF20	24W	12V	12V			TOP243P

Part No.	Ord.No.
S 74000	48842
S 74001	48844
S 74010	48847
S 74023	48852
S 74030	48853
S 74040	48855
S 74050	48857
S 74080	48860

## SMD Coils

### LQH32MN Series

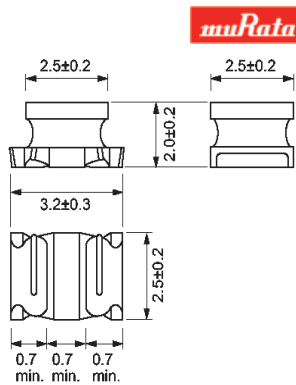


LQH 3 N series of SMD chip coils in case size - 1210 have special ferrite core and are characterized by high value of Q at high frequencies and by low value of DC resistance. They are suitable for audio, video and communication equipments.

Packaging: 2000 pcs

Part No.	L [uH]	I <sub>n</sub> [mA]	Q[ <i>min</i> ]	F <sub>rez</sub> [MHz]	RDC [Ohm]
LQH32MN3R3K23L	3,3	300	20	38	1
LQH32MN4R7K23L	4,7	270	20	31	1,2

Part No.	Ord.No.
S LQH32MN3R3K23L	32679
O LQH32MN4R7K23L	32681



### LQH32CN Series

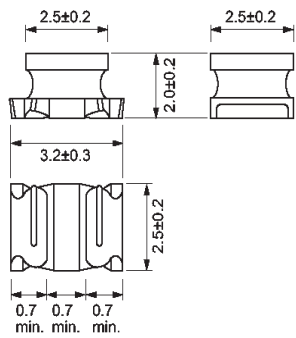


LQH 3 C series of SMD coils in compact 1210 case size are typical by low DC resistance and high current capacity. They are ideal as power supply inductors.

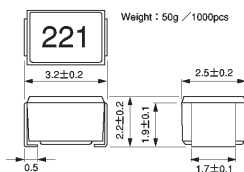
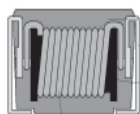
Packaging: 2000 pcs

Part No.	L [uH]	I <sub>n</sub> [mA]	F <sub>rez</sub> [MHz]	RDC [Ohm]
LQH32CN1R0M23L	1	800	96	0,09
LQH32CN2R2M23L	2,2	600	64	0,13
LQH32CN4R7M23L	4,7	450	43	0,20
LQH32CN100K23L	10	300	26	0,44
LQH32CN220K23L	22	250	19	0,71
LQH32CN470K23L	47	170	15	1,3
LQH32CN101K23L	100	100	10	3,5
LQH32CN221K23L	220	70	6,8	8,4

Part No.	Ord.No.
S LQH32CN1R0M23L 1 uH	32657
S LQH32CN2R2M23L 2,2 uH	32658
S LQH32CN4R7M23L 4,7 uH	32659
S LQH32CN100K23L 10 uH	32660
S LQH32CN220K23L 22 uH	32661
S LQH32CN470K23L 47 uH	32662
S LQH32CN101K23L 100 uH	32663
S LQH32CN221K23L 220 uH	32664



### LFC 32 Series

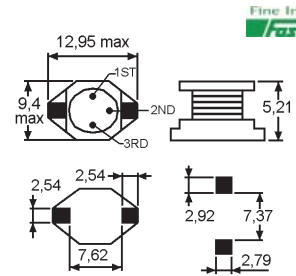


LFC32 series of SMD coils from KOA manufacturer in compact 1210 case size reach high values of Q because of wounded wire. They are high thermal and mechanical resistant.

Part No.	L [uH]	I <sub>n</sub> [mA]	Quality Factor	F <sub>rez</sub> [MHz]	RDC [Ohm]
LFC 32 TTE 1,0 uH	1	400	30	120	0,70

Part No.	Ord.No.
S LFC 32 TTE 1,0 uH	47974

## PISM Series



FASTRON power inductors can withstand a wide temperature range. The inductance values range from 1.0 uH to 10000 uH and they are suitable for high rated currents. They have a high reliability and can be assembled by surface mount technology. Their low DC resistance keeps power losses to a minimum.

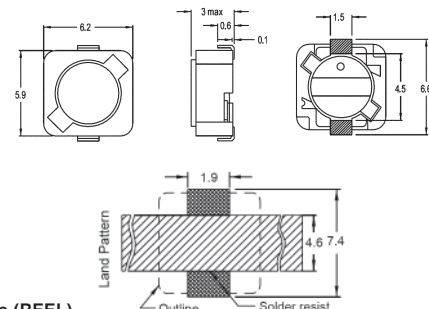
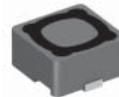
They are suitable for Filtering of supply voltages, Coupling, Decoupling, Automotive electronics and Network switching systems. These components are widely used in power supplies for VTR, LCD TV, notebooks, PC and DC/DC converters.

Packaging: 1000 pcs (REEL)

Part No.	L [uH]	D <sub>CRmax</sub> [W]	I <sub>n</sub> [A]
PISM-100M-04	10	0,036	3,9
PISM-150M-04	15	0,05	3,2
PISM-220M-04	22	0,06	2,7
PISM-330M-04	33	0,1	2,1
PISM-470M-04	47	0,14	1,7
PISM-101M-04	100	1,28	1,2

Part No.	Ord.No.
S PISM-100M-04	50981
S PISM-150M-04	53036
S PISM-220M-04	50982
S PISM-330M-04	50983
S PISM-470M-04	50984
S PISM-101M-04	50985

## PIS 2408 Series



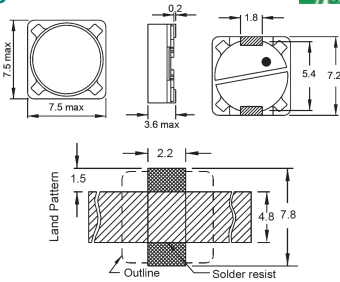
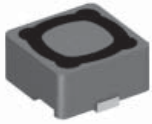
SHIELDED

Packaging: 1200 pcs (REEL)

Part No.	L [uH]	D <sub>CRmax</sub> [W]	I <sub>n</sub> [A]
PIS2408-100M-04	10	0,15	1,1
PIS2408-150M-04	15	0,23	0,9
PIS2408-220M-04	22	0,34	0,74
PIS2408-270M-04	27	0,38	0,66
PIS2408-470M-04	47	0,69	0,5
PIS2408-680M-04	68	1,07	0,42
PIS2408-101M-04	100	1,39	0,34
PIS2408-151M-04	150	2,18	0,28
PIS2408-221M-04	220	3,12	0,23
PIS2408-271M-04	270	4,38	0,22
PIS2408-331M-04	330	4,94	0,19

Part No.	Ord.No.
S PIS2408-100M-04	61750
O PIS2408-150M-04	61752
S PIS2408-220M-04	61753
O PIS2408-270M-04	61754
S PIS2408-470M-04	61755
O PIS2408-680M-04	61757
S PIS2408-101M-04	61759
O PIS2408-151M-04	61761
S PIS2408-221M-04	61762
O PIS2408-271M-04	61763
O PIS2408-331M-04	61764

## PIS 2812 Series



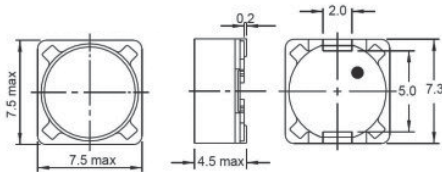
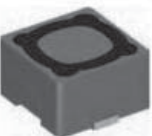
**SHIELDED**

Packing: 1200 pcs (REEL)

Part No.	L [uH]	D <sub>CRmax</sub> [mW]	I <sub>n</sub> [A]
PIS2812-100M-04	10	72	1,68
PIS2812-150M-04	15	130	1,33
PIS2812-220M-04	22	190	1,07
PIS2812-270M-04	27	210	0,96
PIS2812-330M-04	33	240	0,91
PIS2812-470M-04	47	360	0,76
PIS2812-680M-04	68	520	0,61
PIS2812-101M-04	100	790	0,5
PIS2812-151M-04	150	1270	0,43
PIS2812-221M-04	220	1650	0,35
PIS2812-271M-04	270	2310	0,32
PIS2812-331M-04	330	2620	0,28
PIS2812-471M-04	470	4180	0,24
PIS2812-681M-04	680	5730	0,19
PIS2812-102M-04	1000	9440	0,16

Part No.	Ord.No.
S PIS2812-100M-04	61681
O PIS2812-150M-04	61683
S PIS2812-220M-04	61685
O PIS2812-270M-04	61686
O PIS2812-330M-04	61687
S PIS2812-470M-04	61692
O PIS2812-680M-04	61701
S PIS2812-101M-04	61703
O PIS2812-151M-04	61705
S PIS2812-221M-04	61707
O PIS2812-271M-04	61708
O PIS2812-331M-04	61709
S PIS2812-471M-04	61712
O PIS2812-681M-04	61714
O PIS2812-102M-04	61716

## PIS 2816 Series



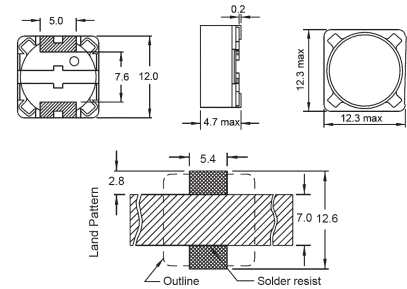
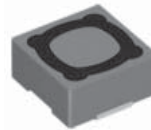
**SHIELDED**

Packing: 1000 pcs (REEL)

Part No.	L [uH]	D <sub>CRmax</sub> [mW]	I <sub>n</sub> [A]
PIS2816-100M-04	10	49	1,84
PIS2816-150M-04	15	81	1,47
PIS2816-220M-04	22	110	1,23
PIS2816-270M-04	27	150	1,12
PIS2816-330M-04	33	170	0,96
PIS2816-470M-04	47	260	0,88
PIS2816-680M-04	68	380	0,69
PIS2816-101M-04	100	610	0,6
PIS2816-151M-04	150	880	0,46
PIS2816-221M-04	220	1170	0,36
PIS2816-271M-04	270	1640	0,34
PIS2816-331M-04	330	1860	0,32
PIS2816-471M-04	470	3010	0,26
PIS2816-681M-04	680	4630	0,22
PIS2816-102M-04	1000	6000	0,18

Part No.	Ord.No.
O PIS2816-100M-04	62172
O PIS2816-150M-04	62944
O PIS2816-220M-04	62945
O PIS2816-270M-04	62946
O PIS2816-330M-04	61048
O PIS2816-470M-04	62947
O PIS2816-680M-04	62951
O PIS2816-101M-04	62940
O PIS2816-151M-04	62942
O PIS2816-221M-04	62943
O PIS2816-271M-04	62952
O PIS2816-331M-04	62941
O PIS2816-471M-04	62948
O PIS2816-681M-04	62949
O PIS2816-102M-04	62950

## PIS 4716 Series



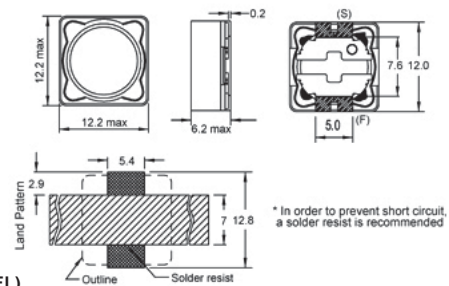
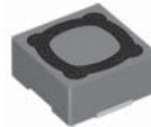
**SHIELDED**

Packing: 700 pcs (REEL)

Part No.	L [uH]	D <sub>CRmax</sub> [mW]	I <sub>n</sub> [A]
PIS4716-100M-04	10	28	4,5
PIS4716-220M-04	22	66	2,9
PIS4716-470M-04	47	150	1,9
PIS4716-101M-04	100	308	1,2
PIS4716-221M-04	220	700	0,8

Part No.	Ord.No.
S PIS4716-100M-04	61656
S PIS4716-220M-04	61660
S PIS4716-470M-04	61664
S PIS4716-101M-04	61668
S PIS4716-221M-04	61672

## PIS 4720 Series



**SHIELDED**

Packing: 500 pcs (REEL)

Part No.	L [uH]	D <sub>CRmax</sub> [mW]	I <sub>n</sub> [A]
PIS4720-100M-04	10	25	4
PIS4720-150M-04	15	30	3,3
PIS4720-220M-04	22	36	2,8
PIS4720-270M-04	27	51	2,3
PIS4720-330M-04	33	57	2,1
PIS4720-470M-04	47	75	1,8
PIS4720-680M-04	68	120	1,5
PIS4720-101M-04	100	160	1,3
PIS4720-151M-04	150	230	1
PIS4720-221M-04	220	400	0,8
PIS4720-271M-04	270	460	0,75
PIS4720-331M-04	330	510	0,68
PIS4720-471M-04	470	770	0,58
PIS4720-681M-04	680	1200	0,48

## PIS 4720 Series (continued)

Part No.	Ord.No.
○ PIS4720-100M-04	62955
○ PIS4720-150M-04	62956
○ PIS4720-220M-04	62957
○ PIS4720-270M-04	62958
○ PIS4720-330M-04	61049
○ PIS4720-470M-04	62959
○ PIS4720-680M-04	62960
○ PIS4720-101M-04	62961
○ PIS4720-151M-04	62962
○ PIS4720-221M-04	62963
○ PIS4720-271M-04	62965
○ PIS4720-331M-04	62953
○ PIS4720-471M-04	62954
○ PIS4720-681M-04	62964

## SMD L1210 SET

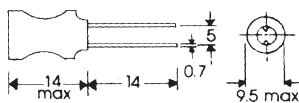


Set of SMD coils 1210 LQH 32 CN size.  
Range from 2,2uH to 220uH values (20pc from each - 140pcs altogether)

Part No.	Ord.No.
S SET SMD L1210	51684

## Coils - Leaded, Radial

### 09P Series (ferrite core)



Part No.	L [uH]	I <sub>n</sub> [mA]	Q[min]	F <sub>rez</sub> [MHz]	Toler. [%]
09 P-470 K-50	47	1100	30	7,0	10
09 P-331 K-50	330	490	35	2,7	10
09 P-471 K-50	470	420	35	2,3	10
09 P-681 K-50	680	350	35	1,9	10
09 P-102 J-50	1000	280	70	1,6	5
09 P-152 J-50	1500	220	70	1,2	5
09 P-332 J-50	3300	150	70	0,8	5
09 P-472 J-50	4700	130	70	0,65	5
09 P-103 J-50	10000	90	70	0,41	5
09 P-333 J-50	33000	50	70	0,26	5

L=rated inductance, Q=quality factor, frez=self-resonance frequency.

Part No.	Ord.No.
S 09 P-470 K-50	44885
S 09 P-331 K-50	28755
S 09 P-471 K-50	28757
S 09 P-681 K-50	28759
S 09 P-102 J-50	28761
S 09 P-152 J-50	28763
S 09 P-332 J-50	28767
S 09 P-472 J-50	28769
S 09 P-103 J-50	28773
S 09 P-333 J-50	28779

## Coils - Leaded, Axial

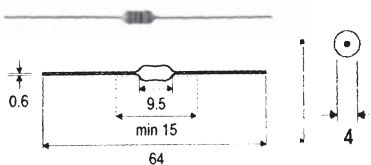
### SMCC Series



FASTRON SMCC (Small Choke Coil) leaded inductors come with high Q values. They are available in ammpack packing.

These components are suitable for decoupling and interference suppression.

**Packing:**  
1200pcs ammpack



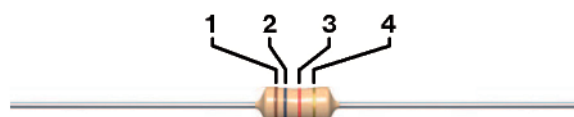
Part No.	L[uH]	Q[min.]	F <sub>rez</sub> [MHz]	In[mA]	Toler.[%]
SMCC-R10 M-02	0,1	45	380	1600	20
SMCC-R22 M-02	0,22	45	300	1450	20
SMCC-R47 M-02	0,47	45	220	1280	20
SMCC-1R0 K-02	1	45	205	1200	10
SMCC-1R5 K-02	1,5	50	165	1100	10
SMCC-2R2 K-02	2,2	55	140	1000	10
SMCC-4R7 K-02	4,7	60	95	820	10
SMCC-100 K-02	10	65	35	680	10
SMCC-220 K-02	22	50	13	560	10
SMCC-330 K-02	33	55	9	500	10
SMCC-390 K-02	39	55	8	470	10
SMCC-470 J-02	47	40	7,5	450	5
SMCC-101 J-02	100	30	5	370	5
SMCC-151 J-02	150	50	4,2	280	5
SMCC-221 J-02	220	50	3,7	250	5
SMCC-331 J-02	330	65	2,7	190	5
SMCC-471 J-02	470	55	2,2	170	5
SMCC-102 J-02	1000	50	1,6	130	5
SMCC-152 J-02	1500	40	1,25	100	5
SMCC-222 J-02	2200	40	1,1	80	5
SMCC-392 K-02	3900	40	0,8	59	10

Part No.	Ord.No.
S SMCC-R10M-02	28726
S SMCC-R22M-02	28728
S SMCC-R47M-02	28730
S SMCC-1R0K-02	28732
S SMCC-1R5K-02	28733
S SMCC-2R2K-02	28734
S SMCC-4R7K-02	28736
S SMCC-100K-02	28738
S SMCC-220K-02	28740
S SMCC-330K-02	28741
S SMCC-390K-02	53343
S SMCC-470J-02	28742
S SMCC-101J-02	28744
S SMCC-151J-02	28745
S SMCC-221J-02	28746
S SMCC-331J-02	28747
S SMCC-471J-02	28748
S SMCC-102J-02	28750
S SMCC-152J-02	28751
S SMCC-222J-02	28752
S SMCC-392K-02	28754

## COLOUR CODING

Colour	1.band	2.band	3.band	4.band= Tolerance
Clear	-	-	-	±20%
Silver	-	-	x 0,01	±10%
Gold	-	-	x 0,1	±5%
Black	-	0	x 1,0	-
Brown	1	1	x 10	-
Red	2	2	x 100	-
Orange	3	3	x 1000	-
Yellow	4	4	-	-
Green	5	5	-	-
Blue	6	6	-	-
Violet	7	7	-	-
Grey	8	8	-	-
White	9	9	-	-

Example: brown, black, red, gold band = 1000 μH ±5%.



## Suppression Coils

### 77A Series



Suppression coils 77A series are axial with ferrite core. They come with high rated currents and low DC resistance characteristics. Inductance tolerance is 20%.

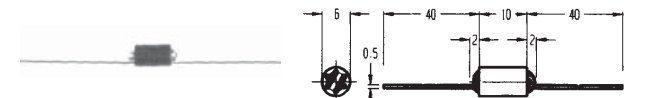
Applications: in communication: RF blocking, filtering and decoupling, and others: entertainment electronics and interference suppression

Part No.	L [uH]	I <sub>max</sub> [A]	R <sub>dc</sub> [Ohm]	Dimensions DxL
77 A-680 M	68	3	0,1	10x26mm
77 A-101 M	100	2,5	0,15	11x26mm
77 A-151 M	150	1,8	0,3	11x26mm
77 A-331 M	330	1,4	0,5	11x26mm

L=inductance, I<sub>max</sub>=rated DC current, R<sub>dc</sub>=direct resistance

Part No.	Ord.No.
S 77A-680M-00	28837
S 77A-101M-00	28838
S 77A-151M-00	28839
S 77A-331M-01	28840

### 06H Series



FASTRON wide band chokes are ferrite beads wound with a thin copper wire. These 6 hole beads provide a constant current. They are commonly use in burner and signal filtering applications and protect against radio frequency interface s of components on PCB's

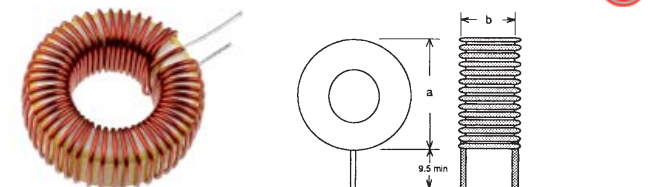
Applications: to filter external EMI; reduction of radiated interference and TV receivers; voltage supply for high load currents

Part No.	Turns	I <sub>max</sub> [A]	Z <sub>10</sub> [Ohm]	Z <sub>50</sub> [Ohm]
06 H-851	2 1/2	1	320	800

I<sub>max</sub>=rated DC current, Z<sub>10</sub>=impedance at 10MHz, Z<sub>50</sub>=impedance at 50MHz

Part No.	Ord.No.
S 06H-851	28848

### DPU Series



This series of chokes is made with a toroid core in iron powder (IP). Used in EMI filtering and energy storage, these compact, low radiation inductors are extremely effective in controlling AC output ripple of Switch Mode Power Supplies. Designed for suppression up to 200kHz.

Part No.	L [uH]	I <sub>max</sub> [A]	R <sub>dc</sub> [Ω]	Dimensions AxB [mm]
DPU 100 A1	100	1	0,097	15 x 8
DPU 150 A1	150	1	0,123	15 x 9
DPU 220 A1	220	1	0,196	15 x 9
DPU 330 A1	330	1	0,193	20 x 9
DPU 1000 A1	1000	1	0,426	26 x 13
DPU 100 A3	100	3	0,066	25 x 12
DPU 330 A3	330	3	0,142	30 x 14
DPU 100 A5	100	5	0,059	30 x 13

L=inductance, I<sub>max</sub>=rated DC current, R<sub>dc</sub>=direct resistance

Part No.	Ord.No.
S DPU 100 A1	7519
S DPU 150 A1	5897
S DPU 220 A1	5578
S DPU 330 A1	8207
S DPU 1000 A1	8630
S DPU 100 A3	5581
S DPU 330 A3	44898
S DPU 100 A5	8302

### SFT Series



These suppression chokes are made with a toroid core and are designed for suppression of interfering frequencies up to 10MHz.

Part No.	L [uH]	I <sub>max</sub> [A]	R <sub>dc</sub> [Ω]	Dimensions DxH [mm]
SFT 850 D	125	2	0,1	17x12,5
SFT 1030	40	3	0,04	22x12,5
SFT 1240	64	5	0,04	26x12,5

L=inductance, I<sub>max</sub>=rated DC current, R<sub>dc</sub>=direct resistance

Part No.	Ord.No.
S SFT 850 D	6189
S SFT 1030	8206
S SFT 1240	7424

### DTP Series



DTP chokes, used as a EMI suppression and energy storage chokes, are wound on toroidal iron powder cores. Energy storage chokes are based on iron powder cores, whose individual powder particles are insulated from one another, allowing the cores to have inherently distributed air gaps for energy storage in an inductor. Distributed air gap property ensures that the energy are stored evenly through the core. This makes the core have a better temperature stability.

Part No.	L [uH]	I <sub>max</sub> [A]	R <sub>dc</sub> [Ω]	Dimensions AxB
DTP16/0,33/2,0	0,33	2,0	0,171	4x19mm
DTP20,2/0,068/7,8	0,068	7,8	0,013	8x23mm
DTP20/1,00/1,9	1,00	1,9		
DTP27/0,47/6,3	0,47	6,3	0,076	9,5x30mm

Part No.	Ord.No.
S DTP16/0,33/2,0	78780
S DTP20,2/0,068/7,8	78781
S DTP20/1,00/1,9	78782
S DTP27/0,47/6,3	78783

### DSZ Series



Bobbin chokes on Ni Zn ferrite cores.

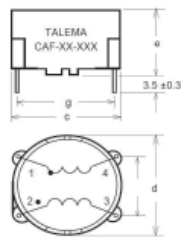
Part No.	L [uH]	I <sub>max</sub> [A]	R <sub>dc</sub> [Ω]	Dimensions AxB [mm]
DSZ-6/22/1,5	22	1,5	0,051	6x8
DSZ-6/33/1,2	33	1,2	0,081	6x8
DSZ-8/47/1,2	47	1,2	0,1	8x10
DSZ-9/15/5,0	15	5,0	0,013	9x12
DSZ-9/170/1,9	170	1,9		9x12

Part No.	Ord.No.
S DSZ-6/22/1,5	78775
S DSZ-6/33/1,2	78774
S DSZ-8/47/1,2	78776
S DSZ-9/15/5,0	78777
S DSZ-9/170/1,9	78778

## Current Compensated Chokes

CA Series common mode toroidal chokes provide an efficient means of filtering supply lines having in-phase signals of equal amplitude thus allowing equipment to meet stringent electrical radiation specifications. Wide frequency ranges can be filtered by using high and low inductance Common Mode Toroids in series. Differential mode signals can be attenuated substantially then used together with input and output capacitors.

### CAF Series

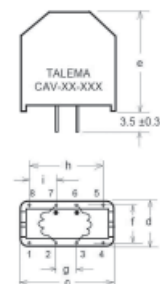


Size	cx dx e [mm]
2	17,5x17x12,5
3	22,5x22x15

Part No.	Size	L [mH]	I <sub>max</sub> [A]	R <sub>dc</sub> [mΩ]	gxf RM (mm)
CAF-1,2-10	3	2x10	2	280	20x12,5
CAF-1,5-2,7	2	2x2,7	1,5	172	15x10
CAF-2,2-2,7	3	2x2,7	2,2	83	20x12,5
CAF-2,3-2,2	3	2x2,2	2,3	75	20x12,5
CAF-3,1-1,2	3	2x1,2	3,1	44	20x12,5

Part No.	Ord.No.
S CAF-1,2-10	74336
S CAF-1,5-2,7	74364
S CAF-2,2-2,7	74365
S CAF-2,3-2,2	74370
S CAF-3,1-1,2	74385

### CAV Series

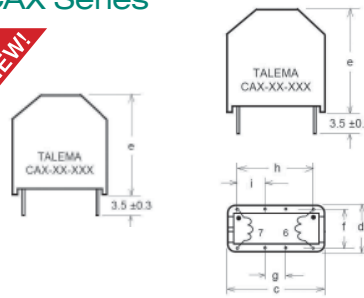


Size	cx dx e [mm]
2	17,8x12,8x20
3	23x15,5x25
4	27x18x30
4A	32,5x18x35
9	43x28x47,5

Part No.	Size	L [mH]	I <sub>max</sub> [A]	R <sub>dc</sub> [mΩ]	gxf RM (mm)
CAV-1,0-27	4	2x27	1	537	12,5x15
CAV-1,2-10	3	2x10	1,2	285	10x12,5
CAV-1,5-22	4A	2x22	1,5	227	12,5x15
CAV-10-0,15	4	2x0,15	10	3	12,5x15
CAV-2,0-1,0	2	2x1,0	2	65	5x10
CAV-2,3-2,2	3	2x2,2	2,3	75	10x12,5
CAV-2,6-6,8	4A	2x6,8	2,6	79	12,5x15
CAV-3,1-1,2	3	2x1,2	3,1	44	10x12,5
CAV-6,0-0,47	3	2x0,47	6	11	10x12,5
CAV-6,8-3,9	9	2x3,9	6,8	19	25x25

Part No.	Ord.No.
S CAV-1,0-27	74459
S CAV-1,2-10	74483
S CAV-1,5-22	74465
S CAV-10-0,15	74564
S CAV-2,0-1,0	74537
S CAV-2,3-2,2	74518
S CAV-2,6-6,8	74490
S CAV-3,1-1,2	74533
S CAV-6,0-0,47	74548
S CAV-6,8-3,9	74506

## CAX Series



Size	cx dx e [mm]
2	17,8x12,8x20
4	27x18x30

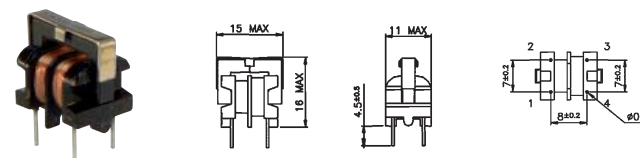
Part No.	Size	L [uH]	I <sub>max</sub> [A]	R <sub>dc</sub> [mΩ]	hxf RM (mm)
CAX-0,4-39	2	2x39	0,4	1769	15x10
CAX-1,1-6,8	2	2x6,8	1,1	342	15x10
CAX-1,3-3,9	2	2x3,9	3	230	15x10
CAX-2,1-3,9	4	2x3,9	2,1	81	22,5x15

Part No.	Ord.No.
S CAX-0,4-39	73454
S CAX-1,1-6,8	74622
S CAX-1,3-3,9	71945
S CAX-2,1-3,9	74636

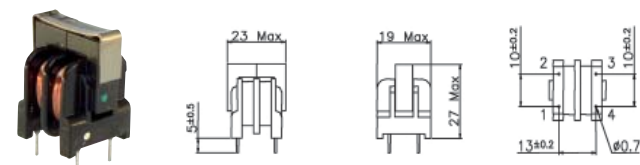
## 743xx Series



74330, 74332



74311



Common mode chokes range for EMI suppression. Mainly used to reduce noise conducted through power or signal lines. The common mode inductance filters symmetrical noise, associated with Y-type safety capacitors connected to ground. The differential mode inductance filters asymmetrical noise, associated with X-type capacitor connected between Line and Neutral.

- ambient temperature 3/4 50°C
- dielectric strength „ 1.5 kV between windings
- electrical characteristics at 25°C

Part No.	Original mark.	L[mH]	I <sub>max</sub> [A]	R <sub>dc</sub> [Ω]
74330 U9,8	M74330	33-56	0,18	7,000
74311 U16	M74311	15-25	0,9	0,75
74332 U9,8	M74332	10-17	0,35	2

L=inductance common mode min - max, I<sub>max</sub>=rated current arms, R<sub>dc</sub>=resistance per winding

Part No.	Ord.No.
S 74330 U9,8 0,18A 33-56mH	49441
S 74311 U16 0,9A 15-25mH	49434
S 74332 U9,8 0,35A 10-17mH	49442

## DUS Series



Part No.	L[uH]	I <sub>max</sub> [A]	R <sub>dc</sub> [Ω]
DUS9,8/22/0,3	2x22	0,30	1,0
DUS9,8/47/0,25	2x47	0,25	2,8

Part No.	Ord.No.
S DUS9,8/22/0,3	78784
S DUS9,8/47/0,25	78785



## Feritte Cores

### Feritte Cores - toroidal



Kerntyp	Maße		
	d <sub>a</sub> mm	d <sub>i</sub> mm	h mm
R2,5	2,5±0,12	1,5±0,1	1,0±0,1
R4	4,50max.	1,5min.	2,1 max.
R6,3	7,25max.	2,85min.	3,4 max.
R9,5	10,5max.	3,8min.	4,1 max.
R10	11,0max.	6,05min.	4,95max.
R12,5	13,6max.	6,5min.	5,95max.
R13,3	14,4max.	7,2min.	5,95max.
R16	17,2max.	8,5min.	7,3 max.
R20/7	21,2max.	8,7min.	8,2 max.
R25/10	26,8max.	13,5min.	11,0max.
R29	31,0max.	17,7min.	16,1max.
R34/10	35,5max.	19,2min.	11,1max.
R34/12,5	35,5max.	19,2min.	13,6max.
R36	37,5max.	21,7min.	16,2max.
R40	41,8max.	22,5min.	17,2max.
R42	43,6max.	24,8min.	13,6max.
R50	51,8max.	28,5min.	21,3max.
R58	60,1max.	29,2min.	18,8max.
R63	65,3max.	36,0min.	28,6max.
R100	104,8max.	63,7min.	116,3max.

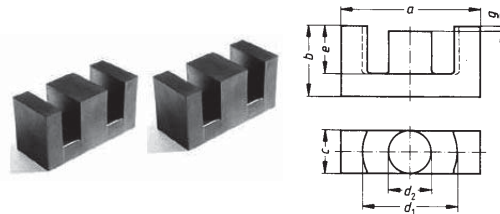
Ferite cores are made from a Siferit material (soft-magnetic, ceramixoxide ferrite material-based on MnZn and NiZn). Coating - Polyamide (0,2 to 0,4 mm), R2,5 and R4 cores are varnished (0,1 mm).

Toroids are used principally as EMC chokes to suppress RF interference in the MHz region and in signal transformers. Double-aperture cores are particularly suitable for low-leakage storage chokes, pulse and broadband transformers.

Part No.	Dimensions	Inductance Factor
<b>MATERIAL N27</b>		
B64290-L44-X27	R 12,5	1020 nH
B64290-L45-X27	R16	1290 nH
B64290-L632-X27	R 20/7	1450 nH
B64290-L618-X27	R 25/10	2150 nH
<b>MATERIAL N30</b>		
B64290-P35-X830	R 2,5	440 nH
B64290-P36-X830	R 4	700 nH
B64290-P37-X830	R 6,3	1090 nH
B64290-L38-X830	R 10	1760 nH
B64290-L44-X830	R 12,5	2200 nH
B64290-L644-X830	R 13,3	2020 nH
B64290-L45-X830	R 16	2770 nH
B64290-L632-X830	R 20/7	4160 nH
B64290-L618-X830	R 25/10	4620 nH
B64290-L58-X830	R 34/10	4360 nH
B64290-L48-X830	R 34/12,5	5460 nH
B64290-L674-X830	R 36	5750 nH
B64290-L659-X830	R 40	7000 nH
B64290-L22-X830	R 42	5000 nH
B64290-L82-X830	R 50	8700 nH
B64290-L40-X830	R 58	5400 nH
B64290-L699-X830	R 63	10800 nH
B64290-L84-X830	R 100	5500 nH
B64290-A84-X830	R 100	5500 nH
B64290-A711-X830	R 202/153/25	5200 nH
<b>MATERIAL T35</b>		
B64290-L62-X35	R 9,5	2650 nH
B64290-L632-X35	R 20/7	5000 nH
B64290-L618-X35	R 25/10	5400 nH
<b>MATERIAL T37</b>		
B64290-L647-X37	R 29	8500 nH
<b>MATERIAL T38</b>		
B64290-P37-X38	R 6,3	2530 nH
B64290-L38-X38	R 10	4090 nH
B64290-L44-X38	R 12,5	5110 nH
B64290-L45-X38	R 16	6440 nH



## Ferrites - ETD Cores



Typ Type	Hauptmaße (mm) Main dimensions (mm)				
	a	b	c	d	d <sub>1</sub>
ETD 29	30,6-1,6	16,0-0,4	9,8-0,6	22,0+1,4	9,8-0,6
ETD 34	34,0+1/7-0,6	17,5-0,4	11,1-0,6	25,6+1,4	11,1-0,6
ETD 39	38,9+1/7-0,7	20,0-0,4	12,8-0,6	29,3+1,6	12,8-0,6
ETD 44	43,8+1,2/-0,8	22,5-0,4	15,2-0,8	32,5+1,6	15,2-0,8
ETD 49	48,5+1,3/-0,9	24,9-0,4	16,7-0,8	36,1+1,8	16,7-0,8
ETD 54	54,5±1,3	27,8-0,4	19,3-0,8	40,1+2,2	19,3-0,8
ETD 59	59,8±1,4	31,2-0,4	22,1-0,9	43,6+2,2	22,1-0,9

ETD cores with flattened and recessed center leg permit a particularly flat transformer design. They are used for DC/DC converters.

Cores are made from the Siferit material.

The AL value applies to a core set comprising one core without air gap (dim. "g" = 0) and one core with air gap (dim. "g" > 0).

The Mg value applies to air gap size.

### ETD29 CORES

Part No.	Air Gap	A <sub>L</sub> -Inductance Factor	Material
B66358-G-X127	Mg 0 mm	2000 nH	N27
B66358-G200-X127	Mg 0,2 mm	380 nH	N27
B66358-G500-X127	Mg 0,5 mm	200 nH	N27
B66358-G1000-X127	Mg 1,0 mm	125 nH	N27
B66358-G-X167	Mg 0 mm	2100 nH	N67
B66358-G200-X167	Mg 0,2 mm	380 nH	N67
B66358-G500-X167	Mg 0,5 mm	200 nH	N67
B66358-G1000-X167	Mg 1,0 mm	125 nH	N67
<b>Coilformers</b>			
B66359-B1013-T1	1 K, Wq 97 mm <sup>2</sup> , 13 P, horizontal		
B66359-J1014-T1	1 K, Wq 97 mm <sup>2</sup> , 14 P, vertical		

### ETD34 Cores

Part No.	Air Gap	A <sub>L</sub> -Inductance Factor	Material
B66361-G-X127	Mg 0 mm	2400 nH	N27
B66361-G200-X127	Mg 0,2 mm	480 nH	N27
B66361-G500-X127	Mg 0,5 mm	250 nH	N27
B66361-G1000-X127	Mg 1 mm	155 nH	N27
B66361-G-X167	Mg 0 mm	2450 nH	N67
B66361-G200-X167	Mg 0,2 mm	480 nH	N67
B66361-G500-X167	Mg 0,5 mm	250 nH	N67
B66361-G1000-X167	Mg 1 mm	155 nH	N67
<b>Coilformers</b>			
B66362-B1014-T1	1 K, Wq 122 qmm, 14 P, horizontal		
B66362-L1014-T1	1 K, Wq 122 qmm, 14 P, vertical		

### ETD35 Cores

Part No.	Air Gap	A <sub>L</sub> -Inductance factor	Material
B66365-G-X127	Mg 0 mm	3300 nH	N27
B66365-G500-X127	Mg 0,5 mm	440 nH	N27
B66365-G1000-X127	Mg 1,0 mm	260 nH	N27
B66365-G-X167	Mg 0 mm	3350 nH	N67
B66365-G500-X167	Mg 0,5 mm	440 nH	N67
B66365-G1000-X167	Mg 1,0 mm	260 nH	N67
<b>Coilformers</b>			
B66366-B1018-T1	1 K, Wq 210 qmm, 18 P		

Above mentioned ferrites and also other series are available on request.



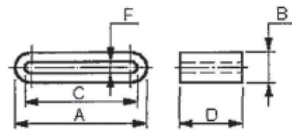
## Ferittes -2-Hole Cores (balun cores)



Part No.	Description	Dimensions
R6 RID	2-hole ferrite core Al=1800	2,65x3x5,35(1,2)

Part No.	Ord.No.
S R6 RID 2,65x3x5,35(1,2)	50655

## Flat Ferrites - SSC Series



Part No.	Description
SSC4012	for flat cable AWG28,26 wires, 27R/25MHz, 60R/100MHz
SSC5012	for flat cable AWG28,34 wires, 25R/25MHz, 64R/100MHz
SSC5812	for flat cable AWG28,40wires, 25R/25MHz, 63R/100MHz

Part No.	Ord.No.
S SSC4012	77092
S SSC5012	77093
S SSC5812	77094

## Ferrite Rods



Part No.	Description
R3A R 2x4	Ferrit stick D2xL4mm Al=300
R5B R 2x7	Ferrit stick D2xL7mm Al=700
R5C R 5x20	Ferrit stick D5xL20mm Al=850

Part No.	Ord.No.
S R3A R 2x4	47401
S R5B R 2x7	47402
S R5C R 5x20	52420

Wide range of coilformers for different applications on [www.norwe.eu](http://www.norwe.eu)



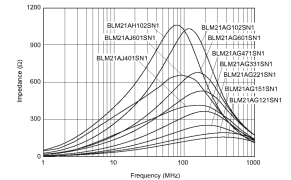
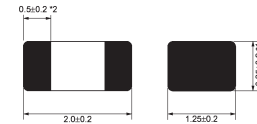
## SMD RFI Filters

### BLM Series

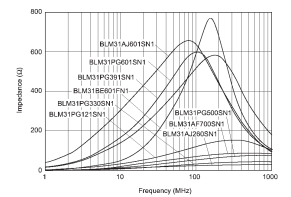
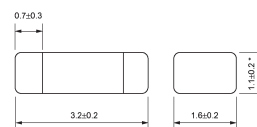


The chip ferrite bead BLM series comprises ferrite bead inductors in the shape of a chip. This inductor generates a high impedance which at high frequencies mainly consists of a resistance element. The BLM series is effective in circuits without stable ground lines because the BLM series does not need a connection to ground. BLM series is essential for noise suppression in high speed signal lines and DC power lines. RFI filters from BLM series are inductive, double-pole ferrite core filters which are connected in a series with protected equipments.

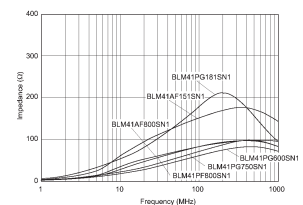
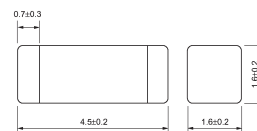
#### BLM 21 - size 0805



#### BLM 31 - size 1206



#### BLM 41 - size 1806



Part No.	Description
BLM 21 AJ 601 SN1D	EMI SMD0805 Filter 100MHz 600R 0,2A
BLM 21 PG 300 SN1D	EMI SMD0805 Filter 100MHz 30R 3A
BLM 31 AF 700 SN1L	EMI SMD1206 Filter 100MHz 70R 0,2A
BLM 31 PG 500 SN1L	EMI SMD1206 Filter 100MHz 50R 3A
BLM 41 AF 151 SN1L	EMI SMD1806 Filter 100MHz 150R 0,2A
BLM 41 PG 750 SN1L	EMI SMD1806 Filter 100MHz 75R 3A

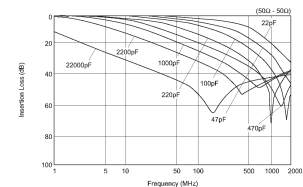
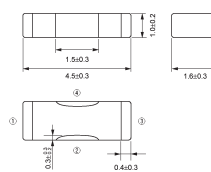
Part No.	Ord.No.
O BLM 21 AJ 601 SN1D	48385
S BLM 21 PG 300 SN1D	40416
S BLM 31 AF 700 SN1L	38273
S BLM 31 PG 500 SN1L	40417
O BLM 41 AF 151 SN1L	38275
O BLM 41 PG 750 SN1L	40419

## NFM Series



The chip solid "EMIFIL" series is a chip type three-terminal EMI suppression filter. It can reduce residual inductance to an extremely low level making it excellent for noise suppression at high frequencies. An electrostatic capacitance range of 22pF to 22,000pF enables suppression of noise at specific frequencies.

#### NFM 41



Part No.	Description
NFM 41 PC 204 F1H3L	EMI SMD1806 3-terminal filter 200nF/50V 2A
NFM 3 DCC 221 R1H3L	EMI SMD1806 3-terminal filter 220pF/25V 0,3A
NFM 41 CC 222 R2A3L	EMI SMD1806 3-terminal filter 2200pF/100V 0,3A

Part No.	Ord.No.
S NFM 41 PC 204 F1H3L	40425
O NFM 3 DCC 221 R1H3L	50894
O NFM 41 CC 222 R2A3L	50893

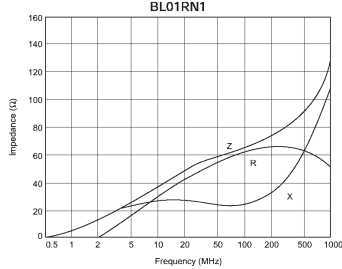
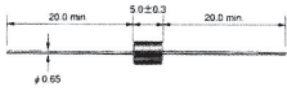
RFI Filters - leaded

BL Series

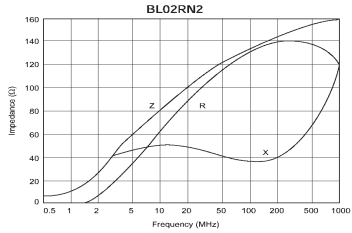
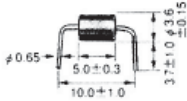


These ferrite bead inductors are useful because they can suppress noise only by inserting them in circuit lines. They are suitable for the circuit with unstable ground because they do not need the connection to ground line. Ferrite core filters from BL series are inductive, 2-terminal and are connected in series with protected equipments.

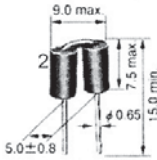
BL01 RN1-A62



BL01 RN1-A62B1



BL02 RN2-R62



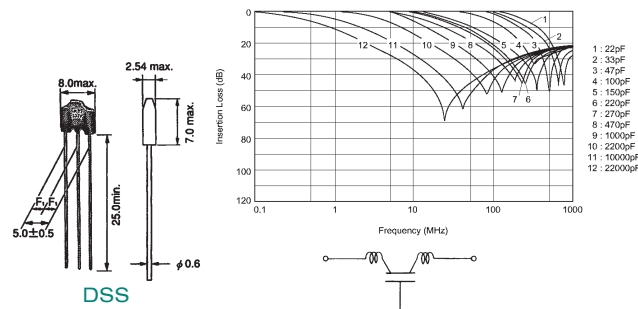
Part No.	Description
BL01RN1A1F1J	EMI filter 100MHz 70R 7A 2-pin axial
BL01RN1A2A2B	EMI filter 100MHz 70R 7A 2-pin axial
BL02RN2R1N1A1	EMI filter 100MHz 130R 7A 2-pin radial

Part No.	Ord.No.
S BL01RN1A1F1J	38271
S BL01RN1A2A2B	40413
S BL02RN2R1N1A1	38272

DSS Series



DSS series is compact, high performance lead type EMI suppression filters which can be mounted 2.54mm pitch. Its three-terminal structure enables nice high frequency performance.



Part No.	Description
DSS 6NZ 82A 103 Q55B	EMI filter 10000pF/100V 6A 3pin radial
DSS 6NF 31C 223 Q55B	EMI filter 22000pF/16V 6A 3pin radial
DSS 6NC 52A 102 Q55B	EMI filter 1000pF/100V 6A 3pin radial

Part No.	Ord.No.
S DSS 6NZ 82A 103 Q55B	38276
S DSS 6NF 31C 223 Q55B	40264
S DSS 6NC 52A 102 Q55B	40265

BNX Series



The "EMIFIL" BNX002 incorporates a through-type barrier layer capacitor and a four-terminal capacitor which are interconnected. This combination enables the BNX002 to achieve a significantly large insertion loss throughout the extremely wide frequency range of 0.5MHz to 1GHz which covers the AM and UHF-TV broadcast frequency bands.

The filter is extremely compact since only one filter block is needed to completely eliminate noise from both the positive and negative lines.

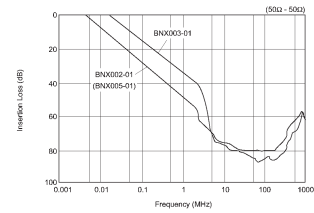
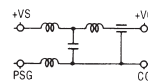
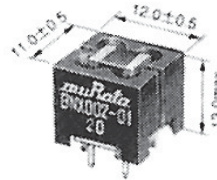
There are no connection routes in the current circuits, thus ensuring highly reliable performance.

Both the input/output terminals and the grounding terminal are aligned in the same direction, permitting fast and easy installation on any type of P.C. board.

Applications:

Noise elimination from DC power sources in a variety of switching power sources, engine control units, digital equipment and computer terminals.

BNX 002/01



Part No.	Description
BNX 002-01	EMI filter 1MHz-1GHz 10A/50V 4pin radial

Part No.	Ord.No.
S BNX 002-01	38270

Table of Product Numbers:



Old Product Number	Current Product Number
<b>BLM Series</b>	
BLM 21 A 601 S PT	BLM 21 AJ 601 SN1D
BLM 21 P 300 S PT	BLM 21 PG 300 SN1D
BLM 31 A 700 S PT	BLM 31 AF 700 SN1D
BLM 31 P 500 S PT	BLM 31 PG 500 SN1D
BLM 41 A 151 S PT	BLM 41 AF 151 SN1L
BLM 41 P 750 S PT	BLM 41 PG 750 SN1L
<b>NFM Series</b>	
NFM 41 P11 C 204 T1	NFM 41 PC 204 F1H3L
NFM 40 R11 C 221 T1	NFM 3D CC 221 R1H3L
NFM 41 R11 C 222 T1	NFM 41 CC 222 R2A3L
<b>BL Series</b>	
BL 01 RN1-A62	BL 01 RN 1A 1F1J
BL 01 RN1-A62B1	BL 01 RN 1A 2A2B
BL 02 RN2-R62	BL 02 RN 2R 1N1A
<b>DSS Series</b>	
DSS 306-55 FZ 103 N100	DSS 6NZ 82A 103 Q55B
DSS 306-55 F 223 Z16 PBF	DSS 6NF 31C 223 Q55B
DSS 306-55 Y5S 102 M100	DSS 6NC 52A 102 Q55B

Do you need technical support?

[www.soselectronic.com](http://www.soselectronic.com)  
[technik@soselectronic.com](mailto:technik@soselectronic.com)

- engineering characteristic
- data sheets
- replacements...

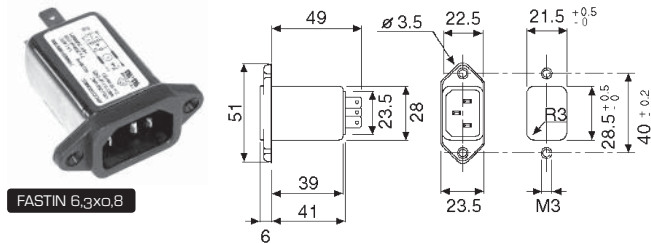


## RFI Filters 230VAC

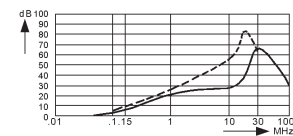
A comprehensive range of chassis mount IEC 60320 inlet power entry modules housed in a compact and lightweight enclosure. Offers a low cost form of protection from mains borne interference in applications such as business, consumer, medical equipment, VDU's, computers, vending machines and many other general purpose applications.

- Current ratings from 1A to 10A
- Component value combinations to suit requirements
- Low cost design
- Medical versions available
- Metal case with built-in power line connector
- Temperature range: -25°C to +85°C

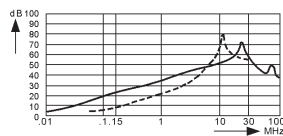
### F.BN Series



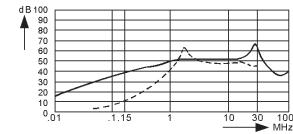
#### FIL 2470



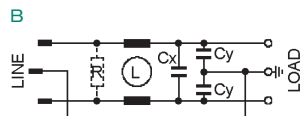
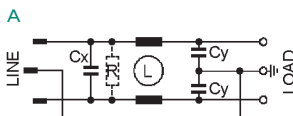
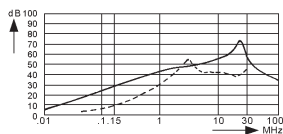
#### FIL 2680-3



#### FIL 3100-1



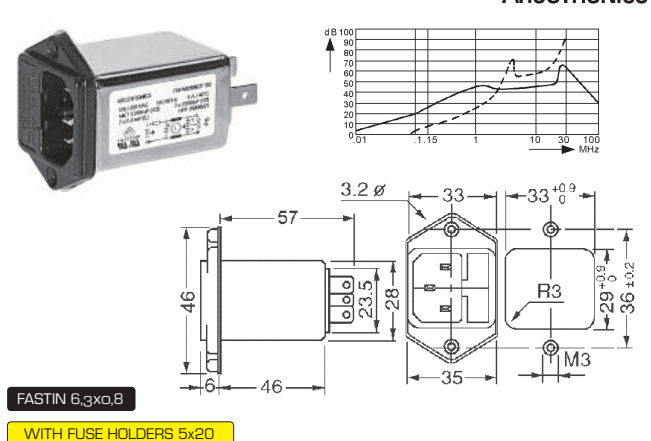
#### FIL 3100-6



Part No.	Original mark.	Ir[A]	L[mH]	Cx[nF]	Cy[nF]	C.D.
FIL 2470	F.BN.AB.2470.ZG.110	10	2 x 0,13	47	2 x 2,5	A
FIL 2680-3	F.BN.AB.2680.ZD.000	3	2 x 2,5	68	2 x 2,5	A
FIL 3100-1	F.BN.AB.3100.BZ.000	1	2 x 10	100	2 x 2,5	B
FIL 3100-6	F.BN.AB.3100.FZ.000	6	2 x 1	100	2 x 2,5	B

Part No.	Ord.No.
S FIL2470	6903
S FIL2680-3	6904
S FIL3100-1	50184
S FIL3100-6	50185

### F.BP Series

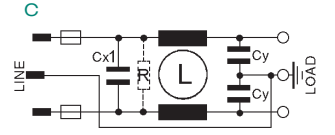
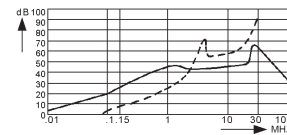
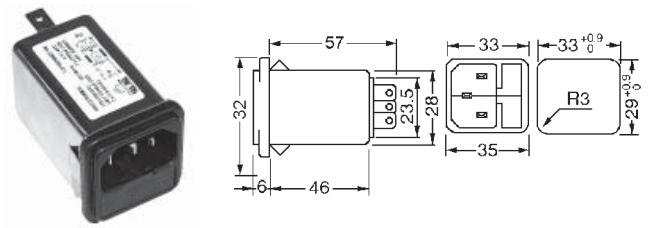


Part No.	Producer's mark	Ir[A]	L[mH]	Cx[nF]	Cy[nF]	C.D.
FIL 2680 BP	F.BP.AB.2680.ZF.100	6	2 x 0,8	68	2 x 2,2	C

Part No.	Ord.No.
S FIL2680BP	50186

## F.CP/F.CQ Series

## ARCOTRONICS



FASTIN 6,3x0,8

WITH FUSE HOLDERS 5x20

Part No.	Producer's mark.	Ir[A]	L[mH]	Cx[nF]	Cy[nF]	Sch.
FIL 2680 CP	F.CP.AB.2680.ZF.100	6	2 x 0,8	68	2 x 2,2	C
FIL 2680 CQ	F.CQ.AB.2680.ZF.100	6	2 x 0,8	68	2 x 2,2	C

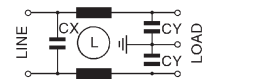
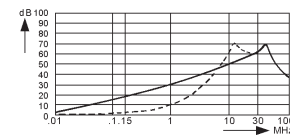
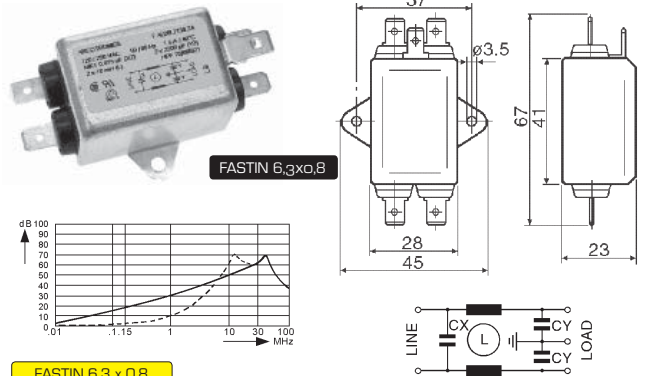
Part No.	Ord.No.
S FIL2680CP (1x držiak poistky)	50187
S FIL2680CQ (2x držiak poistky)	50188

## Chassis Mount Filters

Comprehensive family of single and multi-stage chassis mount filters. Throughout the power range, a high level of performance is provided within various sizes and styles of metal enclosure and termination options. Designed to provide economic solutions to a multitude of general purpose filtering requirements; industrial power equipment, office, business and medical equipments. The two stage FAS series is specifically designed to suppress RFI generated by switch mode power supply applications.

- Current ratings from 0.5A to 40A
- High symmetric and asymmetric attenuation
- Earth line choke and medical versions available
- Custom designs to client specifications
- Connections: faston 6.3 x 0.8mm (≤16A)
- Rated voltage (VR): max 250V, 50/60Hz
- Rated current (IR): referred to room temperature = 40°C
- Leakage current (IL): at 220V, 50Hz, max value
- Voltage test (2S.): line to ground 3000Vdc or 1800Vac line to line 1700Vdc
- Temperature range: -25°C to +85°C

### F.AI Series



FASTIN 6,3 x 0,8

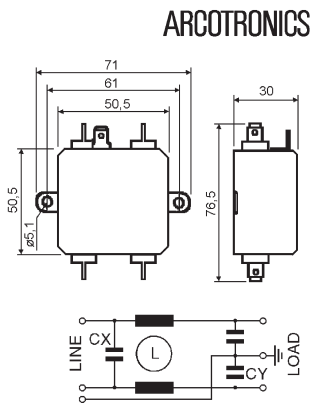
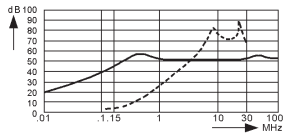
Part No.	Producer's mark	Ir[A]	L[mH]	Cx[uF]	Cy[pF]
FIL 2150	F.AI.DB.2150.ZA.000	1,5	2 x 10	0,015	2 x 2200
FIL 2150-3	F.AI.DB.2150.ZC.000	3	2 x 2,0	0,015	2 x 2200
FIL 2150-6,5	F.AI.DB.3100.ZD.000	6,5	2 x 1,0	0,015	2 x 2200

Part No.	Ord.No.
S FIL2150	50189
S FIL2150-3	50190
S FIL2150-6,5	50191

## F.AI Series (continued)



FASTIN 6,3x0,8



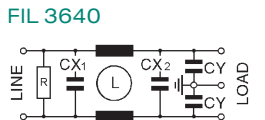
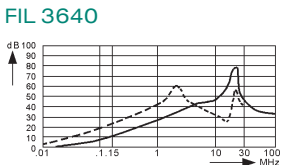
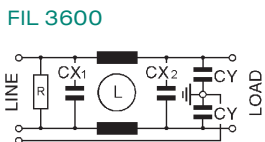
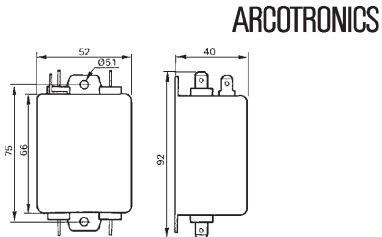
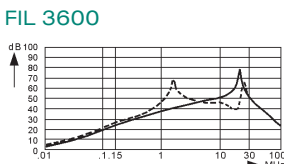
Part No.	Producer's mark.	I <sub>r</sub> [A]	L[mH]	C <sub>x</sub> [uF]	C <sub>y</sub> [pF]
FIL 2150 - 10	F.AI.DB.2330.ZA.000	1,5	2 x 10	0,015	2 x 2200

Part No.	Ord.No.
S FIL2150-10	50192

## F.AM Series



FASTIN 6,3x0,8



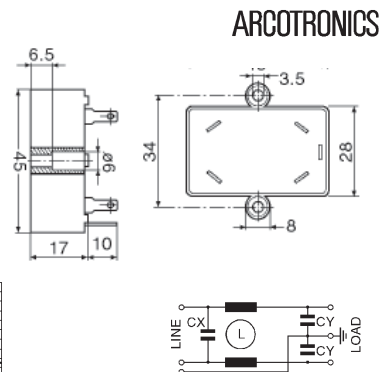
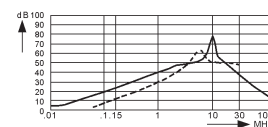
Part No.	Producer's mark.	I <sub>r</sub> [A]	L[mH]	C <sub>x</sub> [uF]	C <sub>x2</sub> [uF]	C <sub>y</sub> [pF]
FIL 3600	F.AM.DB.3600.ZC	16	2x1	-	0,6	2x2500
FIL 3640	F.AM.DB.3600.ZF.000	40	2x0,23	-	0,6	2x4700

Part No.	Ord.No.
S FIL3600	7830
S FIL3640	50193

## F.AH Series



FASTIN 2,8x0,5



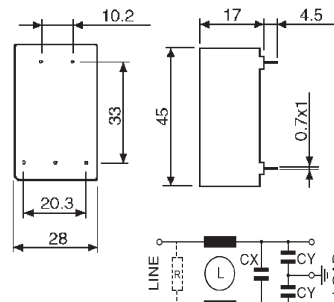
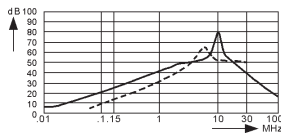
Part No.	Producer's mark	I <sub>r</sub> [A]	L[mH]	C <sub>x</sub> [uF]	C <sub>y</sub> [pF]	I <sub>L</sub> [mA]
FIL 3100 ZF	F.AH.DA.3100.ZF	6,5	2x1	0,1	2x2500	2x0,23

Part No.	Ord.No.
S FIL3100 ZF	47712

## ARCOTRONICS



PINS



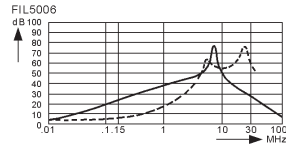
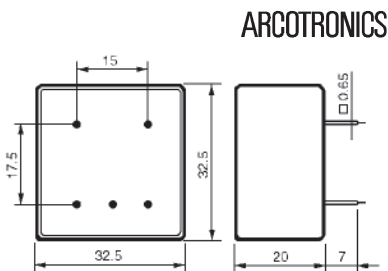
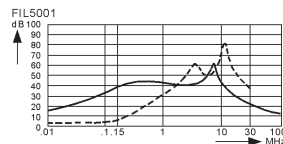
Part No.	Producer's mark	I <sub>r</sub> [A]	L[mH]	C <sub>x</sub> [uF]	C <sub>y</sub> [pF]	I <sub>L</sub> [mA]
FIL 3100	F.AH.AV.3100.ZF	6,5	2x1	0,1	2x2500	2x0,23

Part No.	Ord.No.
S FIL3100	6905

## F.LH Series



PINS



Part No.	Producer's mark	I <sub>r</sub> [A]	L[mH]	C <sub>x</sub> [uF]	C <sub>y</sub> [pF]	I <sub>L</sub> [mA]
FIL 5001	F.LH.01A.02.03.AK.00	1	2x10	0,033	2x2500	2x0,23
FIL 5006	F.LH.06A.04.03.AK.00	6	2x1	0,033	2x2500	2x0,23

Part No.	Ord.No.
S FIL5001	50194
S FIL5006	50195

SOS electronic  
- distributor of

# ARCOTRONICS

SOS electronic - official distributor of

**SCHURTER**

on Slovak, Czech and Hungarian market.

## Overview of RFI 230V Filters from SCHURTER

5500



FPP-01



FPP-02



FMAB-72



FMLB-41



Technical parameters	5500	FPP-01	FPP-02	FMAB-72	FMLB-41
Operating current/voltage	1-6A/250V AC	0.5-6.5A/250V AC	0.5-6.5A/250V AC	2-16A/250V AC	1-10A/250V AC
Breakdown voltage L-N, L/N-PE	1.7kVAC, 2.7kVAC	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC
Filter stage	1	1	1	1	1
Type of terminals	in PCB	in PCB	in PCB	in PCB	FASTIN 6,3x0,8 mm
Operating temperature range	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 100°C	-25°C up to 100°C
Dimensions WxLxH	26,6x30x23,2 mm	-	24x45x17,5 mm	34,5x55x25,5 mm	46x67x25 mm

FMLB-09



FMLB-51



FMW-150



FMW-41



FMW-52



Technical parameters	FMLB-09	FMLB-51	FMW-150	FMW-41	FMW-52
Operating current/voltage	6-20A/250V AC	6-20A/250V AC	4-30A/250V AC	1-10A/250V AC	2-6A/250V AC
Breakdown voltage L-N, L/N-PE	1.7kVAC, 2.7kVAC	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC
Filter stage	1	1	3	1	2
Typ of terminals	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm	in PCB	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm
Operating temperature range	-25°C up to 100°C	-25°C up to 100°C	-25°C up to 100°C	-25°C up to 100°C	-25°C up to 100°C
Dimensions WxLxH	45x75x28,6 mm	51x75x32 mm	127x173x56 mm	46x67x25 mm	46x77x31 mm

FMW-55



FSS



FSW



FMAB



FMBB



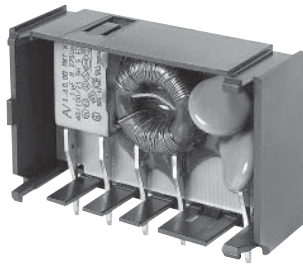
Technical parameters	FMW-55	FSS	FSW	FMAB	FMW-52
Operating current/voltage	10-20A/250V AC	1-10A/250V AC	3-10A/250V AC	12-30A/250V AC	8-25A/250V AC
Breakdown voltage L-N, L/N-PE	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC	2.7kVAC, 1.7kVAC
Filter stage	1	2	2	1	2
Typ of terminals	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm	Screw terminals	Screw terminals
Operating temperature range	-25°C up to 100°C	-25°C up to 100°C	-25°C up to 100°C	-25°C up to 100°C	-25°C up to 100°C
Dimensions WxLxH	41x81x33 mm	54x116x44 mm	51x91x32 mm	106x137x58 mm	54x100x47 mm

We will provide all this sortiment on order - ask for a price request, please.

s - in-stock product o - on order product

## Overview of Power Entry Modules with Line Filter

KPF



KFB1



KFB2



DC12



Technical parameters	KPF	KFB1	KFB2	DC12
Max. current/voltage	10A/250V AC	10A/250V AC	10A/250V AC	10A/250V AC
Breakdown voltage L-N, L/N-PE	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC
Type of terminals	do DPS	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm
Line switch	-	1-pole	2-pole	1, 2-pole
Operating temperature range	-25°C up to 70°C	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 85°C
Front panel protection	IP40	IP40	IP40	IP40
Mounting hole dimensions	53,3x32 mm	29x33 mm	28,5x43 mm	29x33 mm

DC22



KMF



GRM



CD



Technical parameters	DC22	KMF	GRM	CD
Max. current/voltage	10A/250V AC	10A/250V AC	10A/250V AC	10A/250V AC
Breakdown voltage L-N, L/N-PE	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC
Type of terminals	FASTIN 6,3x0,8 mm	FASTIN 4,8x0,8 mm	FASTIN 4,8x0,8 mm	FASTIN 4,8x0,8 mm
Line switch	1, 2-pole	2-pole	2-pole	2-pole
Operating temperature range	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 85°C
Front panel protection	IP40	IP40	IP40	IP40
Mounting hole dimensions	30,4x34,4 mm	28,8x47,8 mm	34,2x40,9 mm	28,5x67,5 mm

CG



FKH; FKI



FKHD; FKID



Felcom 54



Technical parameters	CG	FKH; FKI	FKHD; FKID	CD
Max. current/voltage	10A/250V AC	10A/250V AC	10A/250V AC	6A/250V AC
Breakdown voltage L-N, L/N-PE	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC
Type of terminals	FASTIN 4,8x0,8 mm	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm	FASTIN 3,5x0,8 mm
Line switch	2-pole	2-pole	2-pole	2-pole
Operating temperature range	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 85°C
Front panel protection	IP40	IP40	IP40	IP40
Mounting hole dimensions	28,5x81 mm	29,5x61 mm	29,5x61 mm	111x30 mm

We will provide all this sortiment on order - ask for a price request, please.

## Overview of Power Entry Modules with Line Filter

Passive Components

5145



EC12



EF12

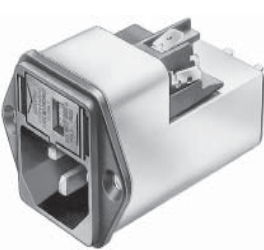


GRF



Technical parameters	5145	EC12	EF12	GRF
Max. current/voltage	10A/250V AC	16A/250V AC	10A/250V AC	10A/250V AC
Breakdown voltage L-N, L/N-PE	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC
Type of terminals	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm
Line switch	2-pole	2-pole	2-pole	-
Operating temperature range	-10°C up to 55°C	-25°C up to 85°C	-10°C up to 55°C	-25°C up to 85°C
Front panel protection	IP40	IP40	IP40	IP40
Mounting hole dimensions	29x72 mm	33,9x48 mm	33,9x81 mm	30,5x20,8 mm

KFA



KFC



CE



5200; 5220



Technical parameters	KFA	KFC	CE	5200; 5220
Max. current/voltage	10A/250V AC	10A/250V AC	10A/250V AC	10A/250V AC
Breakdown voltage L-N, L/N-PE	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC	1,7kVAC, 2,7kVAC
Type of terminals	FASTIN 6,3x0,8 mm	FASTIN 4,8x0,8 mm	FASTIN 4,8x0,8 mm	FASTIN 6,3x0,8 mm
Operating temperature range	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 85°C
Front panel protection	IP40	IP40	IP40	IP40
Mounting hole dimensions	33x36 mm	28,5x42 mm	28,5x53,5 mm	29x32 mm

5110



KFS; KFX

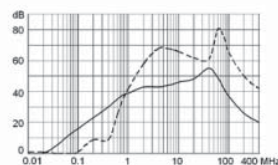
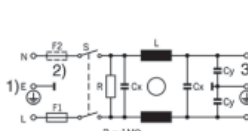
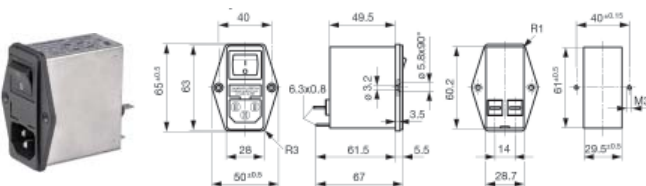


C20F



Technical parameters	5110	KFS; KFX	C20F
Max. current/voltage	10A/250V AC	10A/250V AC	16A/250V AC
Breakdown voltage L-N, L/N-PE	1,7kVAC, 2,7kVAC	4kVAC, 5kVAC (KFX)	1,7kVAC, 2,7kVAC
Type of terminals	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm	FASTIN 6,3x0,8 mm
Operating temperature range	-25°C up to 85°C	-25°C up to 85°C	-25°C up to 85°C
Front panel protection	IP40	IP40	IP40
Mounting hole dimensions	29x21 mm	21,5x28,5 mm	26,8x34,8 mm

### FKH, FKI Series



1-stage inlet filter, front side mounting, line switch 2-pole, fuseholder 5x20 mm 1-pole.

**Description:**

- Panel Mount - screw-on from front side
- 4 Functions:
  1. Appliance Inlet Protection class I,
  2. Line switch 2-pole,
  3. Fuseholder for fuse-links 5 x 20 mm 1-pole,
  4. Line-filter in standard version.
- Quick connect terminals 6.3 x 0.8 mm
- Medical version M80 on request

Part No.	Prod. mark	Ir[A]	L[mH]	Cx[nF]	Cy[nF]	Poistka
FKH2-50-6/I-A	4304.4044	6	2x0,8	68	2,2	1
FKI2-50-6/I-A	4304.4064	6	2x0,8	68	2,2	2

Part No.	Ord.No.
S FKH2-50-6/I-A	699999
S FKI2-50-6/I-A	699998