

## ZnO Varistors



### DISC series

Type	Operating voltage (V)		Dimensions (mm)					Camping voltage at 1mA (V)
	AC(ef.)	DC	05D	07D	10D	14D	20D	
180K	11	14	x	x	x	x	x	18 (16-20)
220K	14	18	x	x	x	x	x	22 (20-24)
270K	17	22	x	x	x	x	x	27 (24-30)
300K	20	26	x	x	x	x	x	33 (30-36)
390K	25	31	x	x	x	x	x	39 (35-43)
470K	30	38	x	x	x	x	x	47 (42-52)
560K	35	45	x	x	x	x	x	56 (50-62)
680K	40	56	x	x	x	x	x	68 (61-75)
820K	50	65	x	x	x	x	x	82 (74-90)
101K	60	85	x	x	x	x	x	100 (90-110)
121K	75	100	x	x	x	x	x	120 (108-132)
151K	95	125	x	x	x	x	x	150 (135-165)
181K	115	150	x	x	x	x	x	180 (162-198)
201K	130	170	x	x	x	x	x	200 (185-225)
221K	140	180	x	x	x	x	x	220 (198-242)
241K	150	200	x	x	x	x	x	240 (216-164)
271K	175	225	x	x	x	x	x	270 (247-303)
301K	195	250	x	x	x	x	x	300 (270-330)
331K	210	270	x	x	x	x	x	330 (297-363)
361K	230	300	x	x	x	x	x	360 (324-396)
391K	250	320	x	x	x	x	x	390 (351-429)
431K	275	350	x	x	x	x	x	430 (387-473)
471K	300	385	x	x	x	x	x	470 (423-517)
511K	320	418	x	x	x	x	x	510 (459-561)
561K	350	460	x	x	x	x	x	560 (504-616)
621K	385	505		x	x	x	x	620 (558-682)
681K	420	560		x	x	x	x	680 (612-748)
751K	460	615			x	x	x	750 (685-825)
781K	485	640			x	x	x	780 (702-858)
821K	510	670			x	x	x	820 (738-902)
911K	550	745			x	x	x	910 (819-1001)
102K	625	825			x	x	x	1000 (900-1100)
112K	680	895			x	x	x	1100 (990-1210)
182K	1000	1465				x	x	1800 (1620-1980)

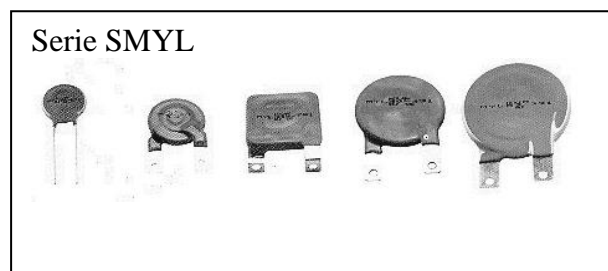
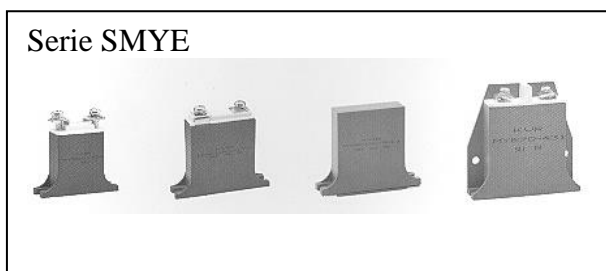
x – available; 180K =  $18 \times 10^0 \text{V} = 18\text{V}$ ; 181K =  $18 \times 10^1 \text{V} = 180\text{V}$ ...

## ZnO Varistors

Type	Max. Operating Voltage (V)		Voltage @ nom. current(V)		Voltage @ current I (8/20µS)		Max. Peak Pulse Current (8/20µS-1x)	Energy Absorption (J)		Max. Capacity (pF)
	Ef.	DC	Min.	Max.	I (mA)	Max clamping Voltage (V)		10/1000µS	8/20µS	
05D820K	50	65	74	90	5	145	800	4	4	300
05D101K	60	85	90	110	5	175	800	4,1	4,1	250
05D121K	75	100	108	132	5	210	800	4,9	4,9	210
05D151K	95	125	135	165	5	260	800	6,5	6,5	165
05D181K	115	150	162	198	5	320	800	7,5	7,5	140
05D201K	130	170	185	225	5	355	800	8,5	8,5	125
05D221K	140	180	198	242	5	380	800	9	9	110
05D241K	150	200	216	264	5	415	800	10	10	100
05D271K	175	225	243	297	5	475	800	11	11	95
05D301K	190	250	270	330	5	520	800	12	12	85
05D331K	210	275	297	363	5	570	800	13	13	75
05D361K	230	300	324	396	5	620	800	16	16	70
05D391K	250	320	351	429	5	675	800	17	17	65
05D431K	275	350	387	473	5	745	800	20	20	60
05D471K	300	385	423	517	5	810	800	21	21	55
05D511K	320	415	459	561	5	845	800	23	23	50
05D561K	350	460	504	616	5	925	800	24	24	45
07D180K	11	14	16	20	2,5	36	250	0,8	0,8	2800
07D220K	14	18	20	24	2,5	43	250	0,9	0,9	2300
07D270K	17	18	24	30	2,5	53	250	1,1	1,1	1800
07D330K	20	26	30	36	2,5	65	250	1,3	1,3	1500
07D390K	25	31	35	43	2,5	77	250	1,6	1,6	1300
07D470K	30	38	42	52	2,5	93	250	2	2	1100
07D560K	35	45	50	62	2,5	110	250	2,5	2,5	890
07D680K	40	56	61	75	2,5	135	250	3	3	740
07D820K	50	65	74	90	10	135	1200	4,2	4,2	600
07D101K	60	85	90	110	10	165	1200	4,8	4,8	500
07D121K	75	100	108	132	10	200	1200	5,9	5,9	420
07D151K	95	125	135	165	10	250	1200	7,6	7,6	330
07D181K	115	150	162	198	10	300	1200	8,4	8,4	280
07D201K	130	170	185	225	10	340	1200	9,5	9,5	250
07D221K	140	180	198	242	10	360	1200	10	10	230
07D241K	150	200	216	264	10	395	1200	11	11	210
07D271K	175	225	243	297	10	455	1200	13	13	185
07D301K	190	250	270	330	10	500	1200	14	14	165
07D331K	210	275	297	363	10	550	1200	15	15	150
07D361K	230	300	324	396	10	595	1200	17	17	140
07D391K	250	320	351	429	10	650	1200	19	19	130
07D431K	275	350	387	473	10	710	1200	21	21	115
07D471K	300	385	423	517	10	775	1200	23	23	105
07D511K	320	415	459	561	10	845	1200	25	25	100
07D561K	350	460	504	616	10	925	1200	26	26	90
07D621K	385	505	558	682	10	1025	1200	28	28	80
07D681K	420	560	612	748	10	1120	1200	32	32	75
07D751K	460	620	675	825	10	1240	1200	36	36	70
07D781K	480	640	702	858	10	1290	1200	38	38	70
07D821K	510	675	738	902	10	1355	1200	42	42	60
25D270K	17	22	24	30	30	53	4500	30	30	26500
25D330K	20	26	30	36	30	65	4500	35	35	18000
25D390K	25	31	35	43	30/77	77	4500	40	40	13500
25D470K	30	38	42	52	30	93	4500	50	50	11500
25D560K	35	45	50	62	30	110	4500	60	60	10500
20D680K	40	56	61	75	30	135	4500	70	70	9050
25D820K	50	65	74	90	150	135	15000	80	80	7700
25D101K	60	85	90	110	150	165	15000	100	100	6300
25D121K	75	100	108	132	150	200	15000	120	120	5200
25D151K	95	125	135	165	150	250	15000	160	160	4300
25D181K	115	150	162	198	150	300	15000	175	175	3500
25D201K	130	170	185	225	150	340	15000	190	190	3200
25D221K	140	180	198	242	150	360	15000	200	200	2900
25D241K	150	220	216	264	150	395	15000	220	220	2650
25D271K	175	225	243	297	150	455	15000	255	255	2400
25D301K	190	250	270	330	150	500	15000	275	275	2100
25D331K	210	275	297	363	150	550	15000	300	300	1900
25D361K	230	300	324	396	150	595	15000	330	330	1750
25D391K	250	320	351	429	150	650	15000	360	360	1600
25D431K	275	350	387	473	150	710	15000	380	380	1500

Type	Max. Operating Voltage (V)		Voltage @ nom. current(V)		Voltage @ current I (8/20 $\mu$ S)		Max. Peak Pulse Current (8/20 $\mu$ S-1x)	Energy Absorption (J)		Max. Capacity (pF)
	Ef.	DC	Min.	Max.	I (mA)	Max clamping Voltage (V)		10/1000 $\mu$ S	8/20 $\mu$ S	
25D471K	300	385	423	517	150	775	15000	400	400	1400
25D511K	320	415	459	561	150	845	15000	420	420	1250
25D561K	350	460	504	616	150	925	15000	440	440	1150
25D621K	385	505	558	682	150	1025	15000	450	450	1050
25D681K	420	560	612	748	150	1120	15000	460	460	950
25D751K	460	615	675	825	150	1240	15000	510	510	850
25D781K	485	640	702	858	150	1290	15000	530	530	850
25D821K	510	670	738	902	150	1355	15000	570	570	800
25D911K	550	475	819	1001	150	1500	15000	620	620	700
25D102K	625	825	900	110	150	1650	15000	685	685	650
25D112K	680	895	990	1210	150	1815	15000	770	770	600
25D122K	750	990	1080	1320	150	1980	15000	770	770	550
25D182K	1000	1280	1440	1760	150	2640	15000	970	970	450
20D180K	11	14	16	20	20	36	3000	13	13	28500
20D220K	14	18	20	24	20	43	3000	16	16	18500
20D270K	17	22	24	30	20	53	3000	19	19	13000
20D330K	20	26	30	36	20	65	3000	24	24	11500
20D390K	25	31	35	43	20	77	3000	28	28	8500
20D470K	30	38	42	52	20	93	3000	34	34	7400
20D560	35	45	50	62	20	110	3000	41	41	6500
20D680K	40	56	61	75	100	135	3000	49	49	5800
20D820K	50	65	74	90	100	135	12000	56	56	4900
20D101K	60	85	90	110	100	165	12000	70	70	4000
20D121K	75	100	108	132	100	200	12000	85	85	3300
20D151K	95	125	135	165	100	250	12000	106	106	2700
20D181K	115	150	162	198	100	300	12000	130	130	2200
20D201K	130	170	185	225	100	340	12000	140	140	2000
20D221K	140	170	198	242	100	360	12000	155	155	1800
20D241K	150	200	216	264	100	395	12000	168	168	1650
20D271K	175	225	243	297	100	455	12000	190	190	1500
20D301K	190	250	270	330	100	500	12000	210	210	1300
20D331K	210	275	297	363	100	550	12000	228	228	1200
20D361K	230	300	324	396	100	595	12000	255	255	1100
20D391K	250	320	351	429	100	650	12000	275	275	1000
20D431K	275	350	387	473	100	710	12000	305	305	930
20D471K	300	385	423	517	100	775	12000	350	350	685
20D511K	320	415	459	561	100	845	12000	360	360	780
20D561K	350	460	504	616	100	925	12000	380	380	710
20D621K	385	505	558	682	100	1025	12000	390	390	650
20D681K	420	560	612	784	100	1120	12000	400	400	600
20D751K	460	615	675	825	100	1240	12000	420	420	530
20D781K	485	640	702	858	100	1290	12000	400	400	520
20D821K	510	670	738	902	100	1355	12000	460	460	500
20D911K	550	745	819	1001	100	1500	12000	510	510	440
20D102K	625	825	900	1100	100	1650	12000	565	565	400
20D112K	680	895	990	1210	100	1815	12000	620	620	360
20D122K	750	990	108	1320	100	1980	12000	620	620	320
20D182K	1100	1465	1620	1980	100	2970	10000	620	620	220

The other types please have a look at our homepage: [www.atd-elektronik.cz](http://www.atd-elektronik.cz)



## ZnO Varistors

Type	Max. Operating Voltage (V)		Voltage @ nom. current(V)		Voltage @ current I (8/20 $\mu$ S)		Max. Peak Pulse Current (8/20 $\mu$ S-1x)	Energy Absorption (J)		Max. Capacity (pF)
	Ef.	DC	Min.	Max.	I (mA)	Max clamping Voltage (V)		10/1000 $\mu$ S	8/20 $\mu$ S	
14D180K	11	14	16	24	10	36	2000	7	7	111000
14D220K	14	18	20	24	10	43	2000	8	8	9100
14D270K	17	22	24	30	10	53	2000	10	10	7400
14D330K	20	26	30	36	10	65	2000	12	12	6100
14D390K	25	31	35	43	10	77	2000	13	13	5100
14D470K	30	38	42	52	10	93	2000	17	17	4300
14D560K	35	45	50	62	10	110	2000	20	20	3600
14D680K	40	56	61	75	10	135	2000	24	24	2900
14D820K	50	65	74	90	50	135	6000	27	27	2400
14D101K	60	85	90	110	50	165	6000	33	33	2000
14D121K	75	100	108	132	50	200	6000	40	40	1700
14D151K	95	125	135	165	50	250	6000	53	53	1300
14D181K	115	150	162	198	50	300	6000	60	60	1100
14D201K	130	170	185	225	50	340	6000	70	70	1000
14D221K	140	180	198	242	50	360	6000	78	78	900
14D241K	150	200	216	264	50	395	6000	84	84	830
14D271K	175	225	243	297	50	455	6000	99	99	740
14D301K	190	250	270	330	50	500	6000	108	108	670
14D331K	210	275	297	363	50	550	6000	115	115	610
14D361K	230	300	324	396	50	595	6000	130	130	560
14D391K	250	320	351	429	50	650	6000	140	140	510
14D431K	275	350	387	473	50	710	6000	155	155	460
14D471K	300	385	423	517	50	775	6000	175	175	430
14D511K	320	415	459	561	50	845	6000	180	180	390
14D561K	350	460	504	616	50	925	6000	185	185	360
14D621K	385	505	558	682	50	1025	6000	190	190	320
14D681K	420	560	612	748	50	1120	6000	200	200	290
14D751K	460	615	675	825	50	1240	6000	210	210	270
14D781K	485	640	702	858	50	1290	6000	220	220	260
14D821K	510	670	738	902	50	1355	6000	235	235	240
14D911K	550	745	819	1001	50	1500	6000	255	255	220
14D102K	625	825	900	1100	50	1650	6000	280	280	200
14D112K	680	895	990	1210	50	1815	6000	310	310	180
14D122K	750	990	1080	1320	50	1980	6000	310	310	150
14D182K	1100	1465	1620	1980	50	2970	5000	310	310	100
10D180K	11	14	16	20	5	36	1000	3	3	5600
10D220K	14	18	20	24	5	43	1000	5	5	4500
10D270K	17	22	24	30	5	53	1000	6	6	3700
10D330K	20	26	30	36	5	65	1000	7	7	3000
10D390K	25	31	35	43	5	77	1000	9	9	2400
10D470K	30	38	42	52	5	93	1000	11	11	2100
10D560K	35	45	50	62	5	110	1000	13	13	1800
10D680K	40	56	61	75	5	135	1000	15	15	1500
10D820K	50	65	74	90	25	135	3500	17	17	1200
10D101K	60	85	90	110	25	165	3500	18	18	1000
10D121K	75	100	108	132	25	200	3500	21	21	830
10D151K	95	125	135	165	25	250	3500	25	25	670
10D181K	115	150	162	198	25	300	3500	30	30	560
10D201K	130	170	185	225	25	340	3500	35	35	500
10D221K	140	180	198	242	25	360	3500	39	39	450
10D241K	150	200	216	264	25	395	3500	42	42	420
10D271K	175	225	243	297	25	455	3500	49	49	370
10D301K	190	250	270	330	25	500	3500	54	54	330
10D331K	210	275	297	363	25	550	3500	58	58	300
10D361K	230	300	324	396	25	595	3500	65	65	280

## ZnO Varistors

Type	Max. Operating Voltage (V)		Voltage @ nom. current(V)		Voltage @ current I (8/20µS)		Max. Peak Pulse Current (8/20µS-1x)	Energy Absorption (J)		Max. Capacity (pF)
	Ef.	DC	Min.	Max.	I (mA)	Max clamping Voltage (V)		10/1000µS	8/20µS	
10D391K	250	320	351	429	25	650	3500	70	70	260
10D431K	275	350	387	473	25	710	3500	80	80	230
10D471K	300	385	423	517	25	775	3500	85	85	210
10D511K	320	415	459	561	25	845	3500	90	90	200
10D621K	385	505	558	682	25	1025	3500	95	95	160
10D681K	420	560	612	748	25	1120	3500	98	98	150
10D751K	460	615	675	825	25	1240	3500	100	100	130
10D781K	485	640	702	858	25	1290	3500	105	105	130
10D821K	510	670	738	902	25	1355	3500	110	110	110
10D911K	550	745	819	1001	25	1500	3500	130	130	130
10D102K	625	825	900	1100	25	165	3500	140	140	140
10D112K	680	895	990	1210	25	1815	3500	155	155	155
07D180K	11	14	16	20	25	36	500	2	2	2800
07D220K	14	18	20	24	2,5	43	500	2,4	2,4	2300
07D270K	17	22	24	30	2,5	53	500	3	3	1800
07D330K	20	26	30	36	2,5	65	500	4	4	1500
07D390K	25	31	35	43	2,5	77	500	4	4	1300
07D470K	30	38	42	52	2,5	93	500	5	5	1100
07D560K	35	45	50	62	2,5	110	500	6	6	890
07D680K	40	56	61	75	2,5	135	500	7	7	740
07D820K	50	65	74	90	10	135	1750	10	10	600
07D101K	60	82	90	110	10	165	1750	12	12	500
07D121K	75	100	108	132	10	200	1750	13	13	420
07D151K	95	125	135	165	10	250	1750	13	13	330
07D181K	115	150	162	198	10	300	1750	16	16	280
07D201K	130	170	185	225	10	340	1750	17	17	250
07D221K	140	180	198	242	10	360	1750	19	19	230
07D241K	150	220	216	264	10	395	1750	21	21	210
07D271K	175	225	243	297	10	455	1750	24	24	185
07D301K	190	250	270	330	10	500	1750	26	26	165
07D331K	210	275	297	363	10	550	1750	28	28	150
07D361K	230	300	324	396	10	595	1750	32	32	140
07D391K	250	320	351	429	10	650	1750	35	35	130
07D431K	275	350	387	473	10	710	1750	40	40	115
07D471K	300	380	423	517	10	775	1750	42	42	105
07D511K	320	415	459	561	10	845	1750	45	45	100
07D561K	350	460	504	616	10	925	1750	49	49	90
07D621K	385	505	558	682	10	1025	1750	55	55	80
07D681K	420	560	612	748	10	1120	1750	60	60	75
07D751K	460	620	675	825	10	1240	1750	65	65	70
07D781K	480	640	702	858	10	1290	1750	65	65	70
07D821K	510	675	738	902	10	1355	1750	70	70	60
05D180K	11	14	16	20	1	40	250	0,6	0,6	1400
05D220K	14	18	20	24	1	48	250	0,7	0,7	1150
05D270K	17	22	24	30	1	60	250	0,9	0,9	930
05D330K	20	26	30	36	1	73	250	1,1	1,1	760
05D390K	25	31	35	43	1	86	250	1,2	1,2	640
05D470K	30	38	42	52	1	104	250	1,5	1,5	530
05D560K	35	45	50	62	1	123	250	1,8	1,8	450
05D680K	40	56	61	75	1	150	250	2,2	2,2	370
05D820K	50	65	74	90	5	145	800	4	4	300
05D101K	60	85	90	110	5	175	800	4,1	4,1	250
05D121K	75	100	108	132	5	210	800	4,9	4,9	210
05D151K	95	125	135	165	5	260	800	6,5	6,5	165
05D181K	115	150	162	198	5	320	800	7,5	7,5	140
05D201K	130	170	185	225	5	355	800	8,5	8,5	125
05D221K	140	180	198	242	5	380	800	9	9	110
05D241K	150	200	216	264	5	415	800	10	10	100
05D271K	175	225	243	297	5	475	800	11	11	95
05D301K	190	250	270	330	5	520	800	12	12	85
05D331K	210	275	297	363	5	570	800	13	13	75
05D361K	230	300	324	396	5	620	800	16	16	70
05D391K	250	320	351	429	5	675	800	17	17	65
05D431K	275	350	387	473	5	745	800	20	20	60
05D471K	300	385	423	517	5	810	800	21	21	55
05D511K	320	415	459	561	5	845	800	23	23	50
05D561K	350	460	504	616	5	925	800	24	24	45

## SMD varistors

Type	Operating Voltage (V)		Clamping Voltage @ 1mA (V)	Max clamping Voltage		Energy Absorption 10/1000µS (J)	Capacity @ 1kHz (pF)
	AC(ef.)	DC		I(A)	U(V)		
1206ML150A	8.0	11.0	15(12.75-17.25)	1	25	0.4	1700
1206ML180A	11.0	14.0	18(15.3-20.7)	1	30	0.5	1500
1206ML220A	12.0	16.5	22(19.8-24.2)	1	36	0.5	1280
1206ML240A	14.0	18.0	24(21.6-27)	1	39	0.5	1160
1206ML270A	17.0	22.0	27(24.3-29.8)	1	44	0.6	1080
1206ML330A	10.0	26.0	33(29.7-36.3)	1	54	0.7	680
1206ML390A	25.0	30.0	39(35.1-42.9)	1	65	1.0	620
1206ML470A	30.0	38.0	47(42.3-51.7)	1	77	1.1	550
1206ML560A	35.0	45.0	56(50.4-61.6)	1	90	0.8	400
1210ML150A	8.0	11.0	15(12.75-17.25)	2.5	25	1.0	4050
1210ML180A	11.0	14.0	18(15.3-20.7)	2.5	30	1.2	3860
1210ML220A	12.0	16.5	22(19.8-24.2)	2.5	36	1.4	2600
1210ML240A	14.0	18.0	24(21.6-27)	2.5	39	1.4	2380
1210ML270A	17.0	22.0	27(24.3-29.8)	2.5	44	1.7	2100
1210ML330A	10.0	26.0	33(29.7-36.3)	2.5	54	1.9	1400
1210ML390A	25.0	30.0	39(35.1-42.9)	2.5	65	1.7	1180
1210ML470A	30.0	38.0	47(42.3-51.7)	2.5	77	2.0	1000
1210ML560A	35.0	45.0	56(50.4-61.6)	2.5	90	2.0	660
1812ML150A	8.0	11.0	15(12.75-17.25)	5	25	1.8	8450
1812ML180A	11.0	14.0	18(15.3-20.7)	5	30	1.9	7030
1812ML220A	12.0	16.5	22(19.8-24.2)	5	36	2.3	5080
1812ML240A	14.0	18.0	24(21.6-27)	5	38	2.3	4650
1812ML270A	17.0	22.0	27(24.3-29.8)	5	44	2.7	4150
1812ML330A	10.0	26.0	33(29.7-36.3)	5	54	3.0	3400
1812ML390A	25.0	30.0	39(35.1-42.9)	5	65	3.7	2950
1812ML470A	30.0	38.0	47(42.3-51.7)	5	77	4.2	2550
1812ML560A	35.0	45.0	56(50.4-61.6)	5	90	4.2	2400
2220ML150A	8.0	11.0	15(12.75-17.25)	10	25	4.2	21200
2220ML180A	11.0	14.0	18(15.3-20.7)	10	30	5.4	17700
2220ML220A	12.0	16.5	22(19.8-24.2)	10	36	5.8	14500
2220ML240A	14.0	18.0	24(21.6-27)	10	39	5.8	13600
2220ML270A	17.0	22.0	27(24.3-29.8)	10	44	7.2	12000
2220ML330A	10.0	26.0	33(29.7-36.3)	10	54	7.8	10500
2220ML390A	25.0	30.0	39(35.1-42.9)	10	65	9.6	8900
2220ML470A	30.0	38.0	47(42.3-51.7)	10	77	12.0	5700
2220ML560A	35.0	45.0	56(50.4-61.6)	10	90	7.7	4800
0402ML050C	2.5	3.3	5(4.0-6.0)	1	10	0.05	390
0402ML080C	4	5.5	8(6.4-9.6)	1	16	0.05	295
0402ML120C	6	9	12(9.6-14.4)	1	20	0.05	190
0402ML150C	8	11	15(12.75-17.25)	1	25	0.05	160
0402ML180C	11	14	18(15.3-20.7)	1	30	0.05	135
0402ML220C	12	16.5	22(19.8-24.2)	1	36	0.05	105
0402ML240C	14	18	24(21.6-27)	1	40	0.05	93
0402ML270C	17	22	27(24.3-29.8)	1	45	0.05	75
0402ML330C	20	26	33(29.7-36.3)	1	54	0.05	54
0402ML390C	25	30	39(35.1-42.9)	1	65	0.05	45
0402ML470C	30	38	47(42.3-51.7)	1	77	0.05	27
0603ML050C	2.5	3.3	5(4.0-6.0)	1	10	0.1	1250
0603ML080C	4	5.5	8(6.4-9.6)	1	16	0.1	800
0603ML120C	6	9	12(9.6-14.4)	1	20	0.1	680
0603ML150C	8	11	15(12.75-17.25)	1	25	0.1	460
0603ML180C	11	14	18(15.3-20.7)	1	30	0.1	350
0603ML220C	12	16.5	22(19.8-24.2)	1	36	0.1	300
0603ML240C	14	18	24(21.6-27)	1	39	0.1	270
0603ML270C	17	22	27(24.3-29.8)	1	44	0.1	235
0603ML330C	20	26	33(29.7-36.3)	1	54	0.1	200
0603ML390C	25	30	39(35.1-42.9)	1	65	0.1	120
0603ML470C	30	38	47(42.3-51.7)	1	77	0.1	100
0603ML560C	35	45	56(50.4-61.6)	1	90	0.1	80
0805ML050C	2.5	3.3	5(4.0-6.0)	1	10	0.1	2450
0805ML080C	4	5.5	8(6.4-9.6)	1	16	0.1	1600
0805ML120C	6	9	12(9.6-14.4)	1	20	0.1	1180
0805ML150C	8	11	15(12.75-17.25)	1	25	0.1	1180
0805ML180C	11	14	18(15.3-20.7)	1	30	0.1	1050
0805ML220C	12	16.5	22(19.8-24.2)	1	36	0.2	750

## SMD Varistors

Type	Operating Voltage (V)		Clamping Voltage @ 1mA (V)	Max clamping Voltage		Energy Absorption 10/1000µS (J)	Capacity @ 1kHz (pF)
	AC (ef.)	DC		I(A)	U(V)		
0805ML240C	14	18	24(21.6-27)	1	39	0.2	550
0805ML270C	17	22	27(24.3-29.8)	1	44	0.2	400
0805ML330C	20	26	33(29.7-36.3)	1	54	0.3	350
0805ML390C	25	30	39(35.1-42.9)	1	65	0.3	310
0805ML470C	30	38	47(42.3-51.7)	1	77	0.3	280
0805ML560C	35	45	56(50.4-61.6)	1	90	0.3	195
0805ML680C	40	56	68(61.2-74.8)	1	110	0.3	145
0805ML820C	50	65	82(73.8-90.2)	1	135	0.3	85
1206ML050C	2.5	3.3	5(4.0-6.0)	1	10	0.1	3850
1206ML080C	4	5.5	8(6.4-9.6)	1	16	0.2	3200
1206ML120C	6	9	12(9.6-14.4)	1	20	0.2	2200
1206ML150C	8	11	15(12.75-17.25)	1	25	0.2	1300
1206ML180C	11	14	18(15.3-20.7)	1	30	0.3	1150
1206ML220C	12	16.5	22(19.8-24.2)	1	36	0.3	1000
1206ML240C	14	18	24(21.6-27)	1	39	0.3	900
1206ML270C	17	22	27(24.3-29.8)	1	44	0.4	840
1206ML330C	20	26	33(29.7-36.3)	1	54	0.5	490
1206ML390C	25	30	39(35.1-42.9)	1	65	0.6	440
1206ML470C	30	38	47(42.3-51.7)	1	77	0.7	400
1206ML560C	35	45	56(50.4-61.6)	1	90	0.8	310
1206ML680C	40	56	68(61.2-74.8)	1	110	1.0	280
1206ML820C	50	65	82(73.8-90.2)	1	135	0.5	240
1206ML101C	60	85	100(90-110)	1	165	0.6	160
1206ML111C	70	90	110(99-121)	1	180	0.6	120
1210ML080C	4	5.5	8(6.4-9.6)	2.5	16	0.4	6200
1210ML120C	6	9	12(9.6-14.4)	2.5	20	0.5	4400
1210ML150C	8	11	15(12.75-17.25)	2.5	25	0.6	3520
1210ML180C	11	14	18(15.3-20.7)	2.5	30	0.7	3260
1210ML220C	12	16.5	22(19.8-24.2)	2.5	36	0.8	2100
1210ML240C	14	18	24(21.6-27)	2.5	39	0.8	1950
1210ML270C	17	22	27(24.3-29.8)	2.5	44	1.0	1720
1210ML330C	20	26	33(29.7-36.3)	2.5	54	1.2	1090
1210ML390C	25	30	39(35.1-42.9)	2.5	65	1.4	920
1210ML470C	30	38	47(42.3-51.7)	2.5	77	1.6	780
1210ML560C	35	45	56(50.4-61.6)	2.5	90	2.0	470
1210ML680C	40	56	68(61.2-74.8)	2.5	110	2.3	390
1210ML820C	50	65	82(73.8-90.2)	2.5	135	1.2	320
1210ML101C	60	85	100(90-110)	2.5	165	1.4	220
1210ML111C	70	90	110(99-121)	2.5	180	1.4	200
1812ML120C	6	9	12(9.6-14.4)	5	20	0.9	9150
1812ML150C	8	11	15(12.75-17.25)	5	25	1.2	7320
1812ML180C	11	14	18(15.3-20.7)	5	30	1.4	6100
1812ML220C	12	16.5	22(19.8-24.2)	5	36	1.6	4300
1812ML240C	14	18	24(21.6-27)	5	39	1.7	3930
1812ML270C	17	22	27(24.3-29.8)	5	44	2.0	3500
1812ML330C	20	26	33(29.7-36.3)	5	54	2.5	2900
1812ML390C	25	30	39(35.1-42.9)	5	65	2.9	2500
1812ML470C	30	38	47(42.3-51.7)	5	77	3.5	2200
1812ML560C	35	45	56(50.4-61.6)	5	90	4.2	1950
1812ML680C	40	56	68(61.2-74.8)	5	110	4.8	1650
1812ML820C	50	65	82(73.8-90.2)	5	135	4.5	1060
1812ML101C	60	85	100(90-110)	5	165	5.8	870
1812ML111C	70	90	110(99-121)	5	180	5.8	790
1812ML151C	95	127	150(135-165)	5	248	5.8	420
2220ML120C	6	9	12(9.6-14.4)	10	20	1.9	36500
2220ML150C	8	11	15(12.75-17.25)	10	25	2.3	18400
2220ML180C	11	14	18(15.3-20.7)	10	30	2.7	15300
2220ML220C	12	16.5	22(19.8-24.2)	10	36	2.9	12500
2220ML240C	14	18	24(21.6-27)	10	39	3.1	11800
2220ML270C	17	22	27(24.3-29.8)	10	44	3.8	10400
2220ML330C	20	26	33(29.7-36.3)	10	54	4.3	8900
2220ML390C	25	30	39(35.1-42.9)	10	65	5.5	7500
2220ML470C	30	38	47(42.3-51.7)	10	77	6.3	4600
2220ML560C	35	45	56(50.4-61.6)	10	90	7.7	4000

## SMD varistors

Type	Operating Voltage (V)		Clamping Voltage @ 1mA (V)	Max clamping Voltage		Energy Absorption 10/1000µS (J)	Capacity @ 1kHz (pF)
	AC (ef.)	DC		I(A)	U(V)		
2220ML680C	40	56	68(61.2-74.8)	10	110	8.8	3500
2220ML820C	50	65	82(73.8-90.2)	10	135	5.6	2850
2220ML101C	60	85	100(90-110)	10	165	6.8	1800
2220ML111C	70	90	110(99-121)	10	180	6.8	1500

Type	L	W	D	E
1206ML	3,2 ± 0,20	1,6±0,15	1,5 max.	0,5±0,2
1210ML	3,2: ±0,20	2,5±0,20	1,5 max.	0,5±0,2
1812ML	4,5±0,20	3,2±0,20	Type	0,5+0,3/-0,1
2220ML	5,7±0,20	5,0±0,20	2,5 max.	0,5+0,3/-0,1

## SMD variátor ESD series

**0402 - 050 E 220 N P**

**Size :** Unit mm

Model	0402 Series	0603 Series
Length(L)	1.0 ±0.15	1.60 ±0.15
Width(W)	0.50 ±0.15	0.80 ±0.15
Thickness(T)	0.6 Max	0.9 Max
Termination(a)	0.25 ±0.1	0.3 ±0.1

**MAX Working Voltage :**

Mark	Voltage
050	5V
120	12V
240	24V

(Unit : mm)

**Package :**

Mark	Type
P	Taping
C	normal

**Cap. Tolerance :**

Mark	Range
N	+/-30%
P	+80%-20%

Exception under 5PF

**Cap. Value :**  
 Where 220=22x 10<sup>0</sup>= 22(PF)  
 Where 2R5=2.5x 10<sup>0</sup>= 2.5(PF)

**Series :**  
 ESD Protect Solution

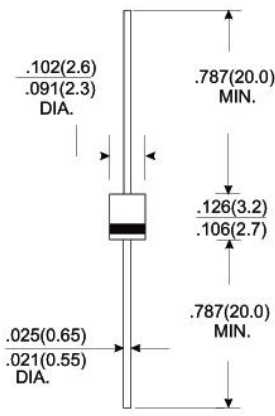
	10	101	820	560	330	220	100	050	2R5
<b>Capacity (pF)</b>		100	82	56	33	22	10	4-8	2-4
<b>Max. Operating Voltage</b>	5V	x	X	x	x	x	x	x	-
	12V	x	x	x	x	x	x	x	-
	24V	-	-	-	-	-	x	x	x

x - available; - not available



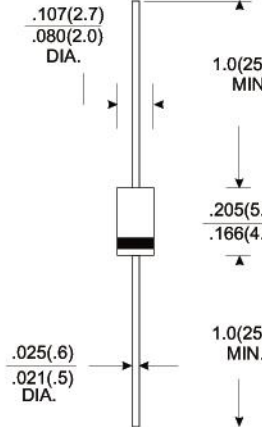
# PCB Case

**R-1**



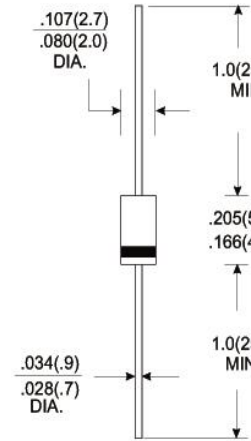
Dimensions in inches and (millimeters)

**A-405**



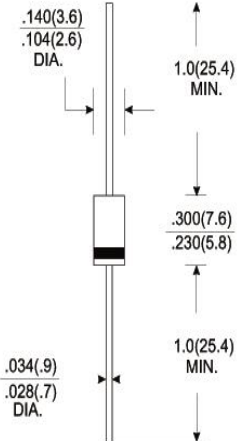
Dimensions in inches and (millimeter)

**DO-41**



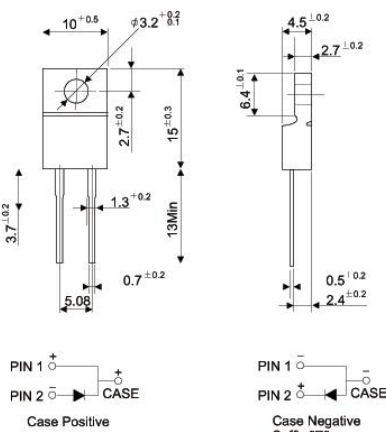
Dimensions in inches and (millimeters)

**DO-15**



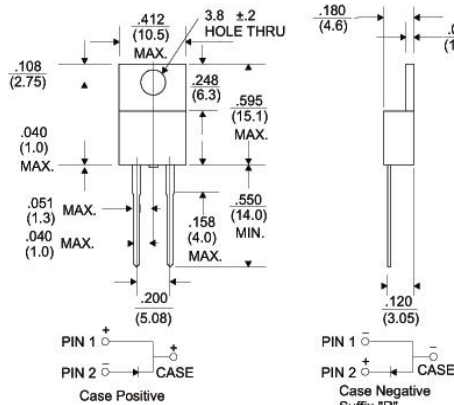
Dimensions in inches and (millimeters)

**ITO-220A**



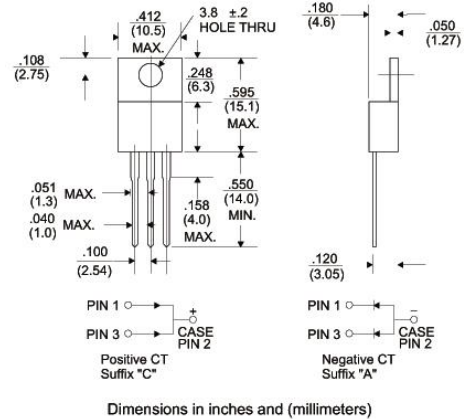
Dimensions in millimeters

**TO-220A**



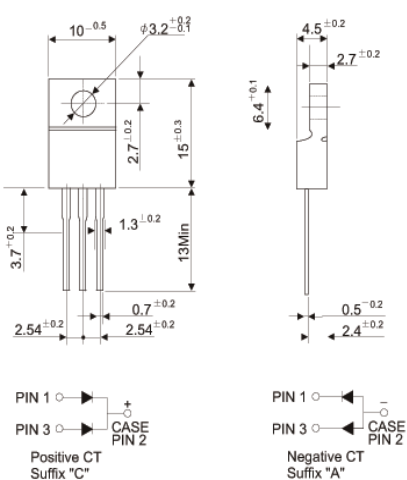
Dimensions in inches and (millimeters)

**TO-220**



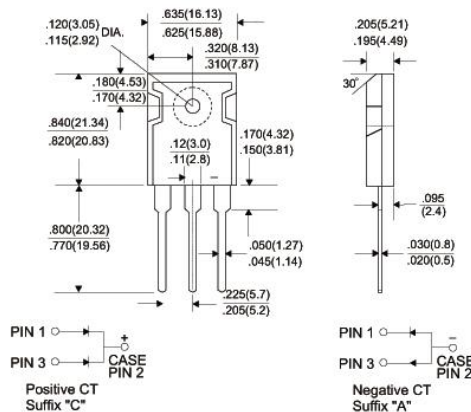
Dimensions in inches and (millimeters)

**ITO-220**



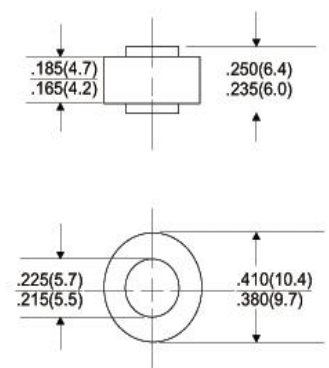
Dimensions in millimeters

**TO-3P**

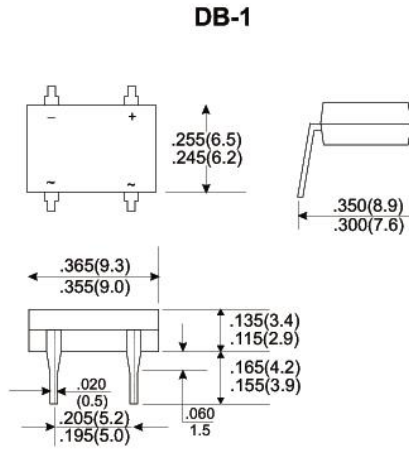
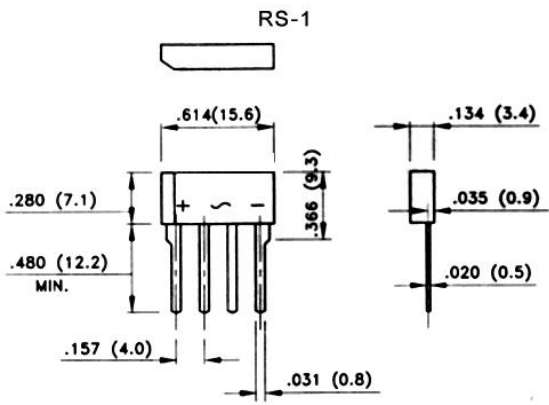


Dimensions in inches and (millimeters)

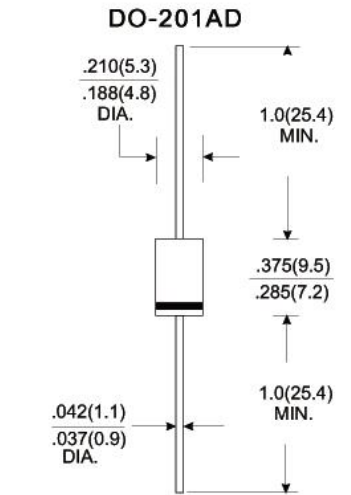
**AR**



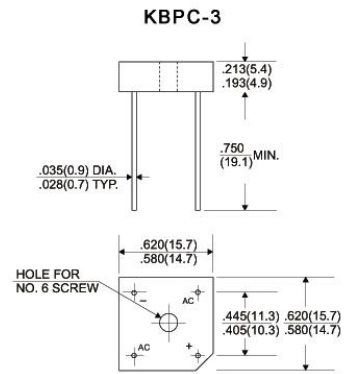
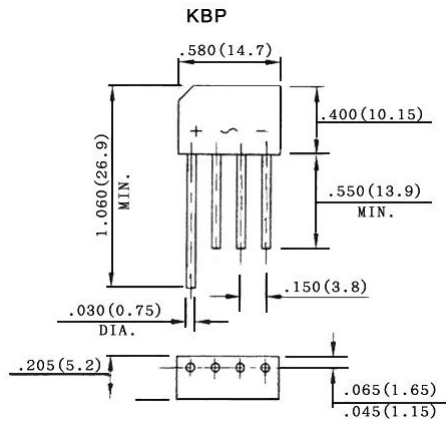
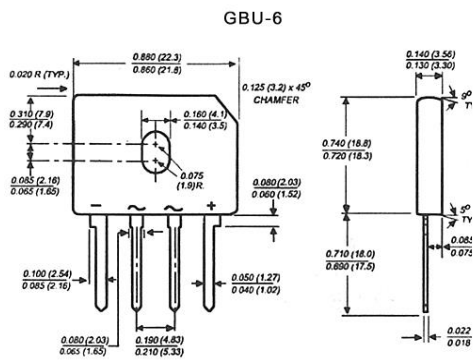
Dimensions in inches and (millimeters)



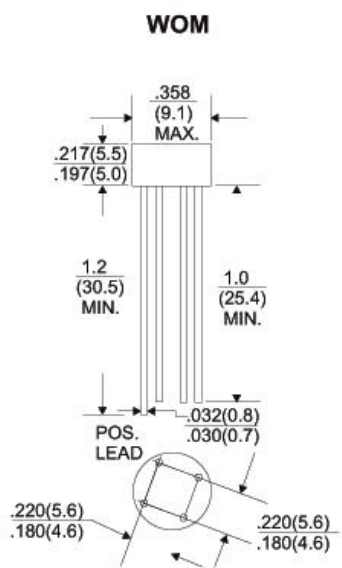
Dimensions in inches and (millimeters)



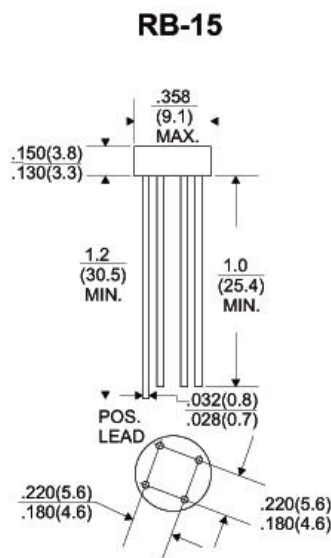
Dimensions in inches and (millimeters)



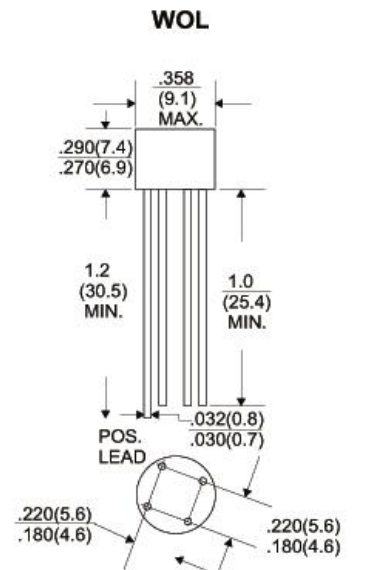
Dimensions in inches and (millimeters)



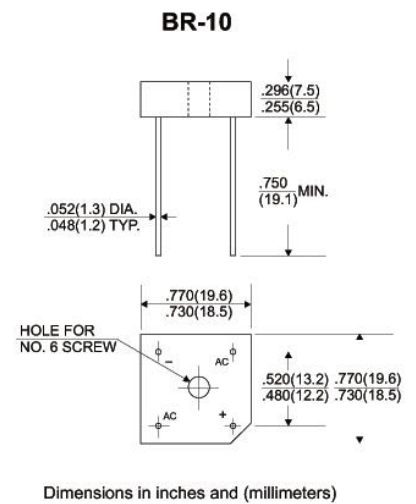
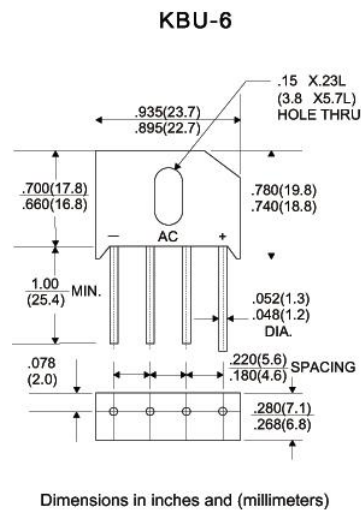
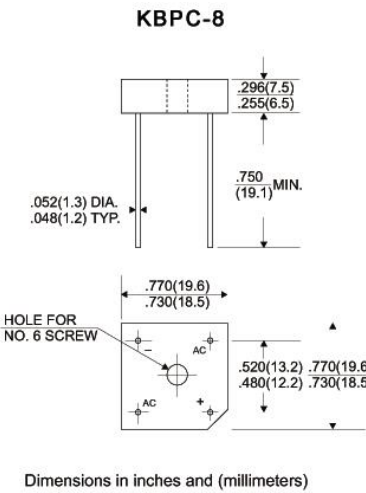
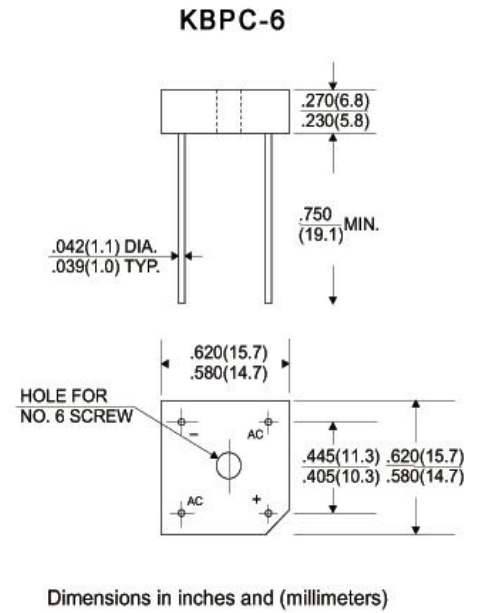
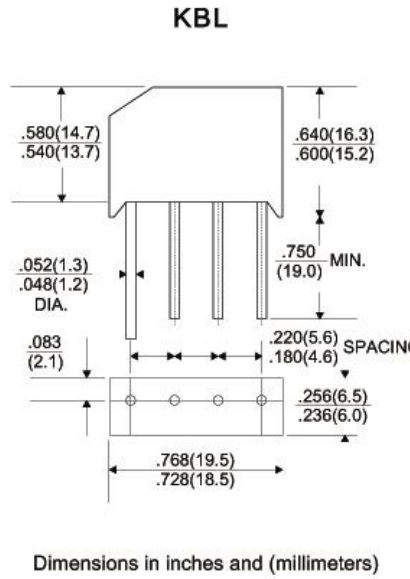
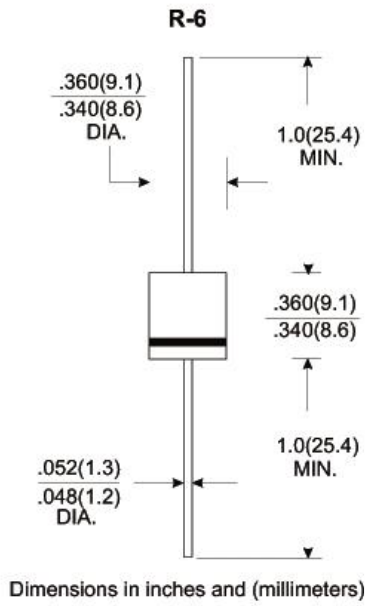
Dimensions in inches and (millimeters)



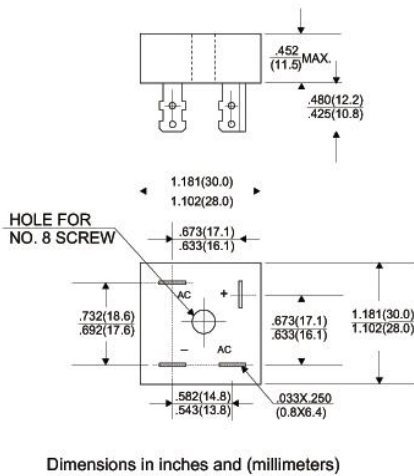
Dimensions in inches and (millimeters)



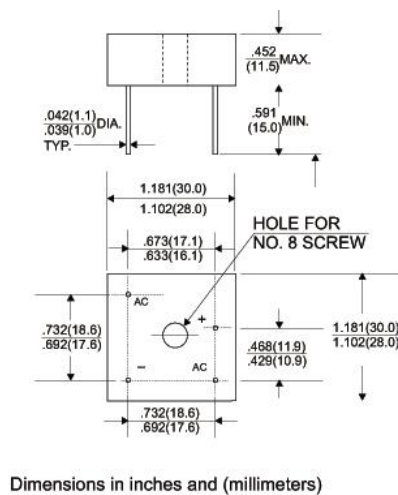
Dimensions in inches and (millimeters)



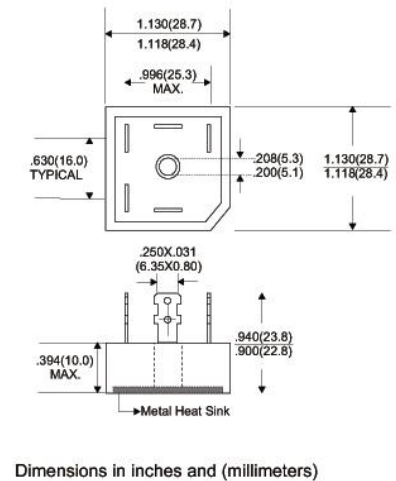
**KBPC-15, KBPC-25, KBPC-35**



**KBPC-15W, KBPC-25W, KBPC-35W**

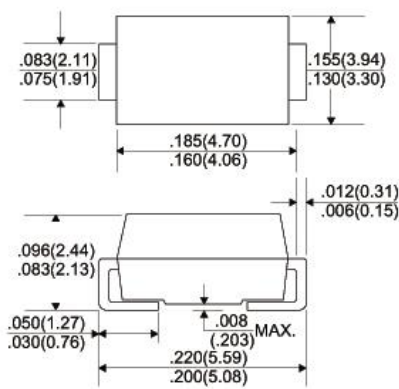


**GBPC-35**



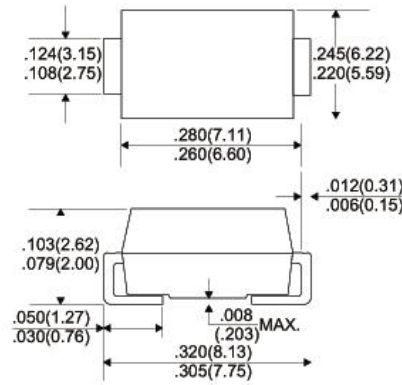
## SMD Case

**DO-214AA(SMB)**



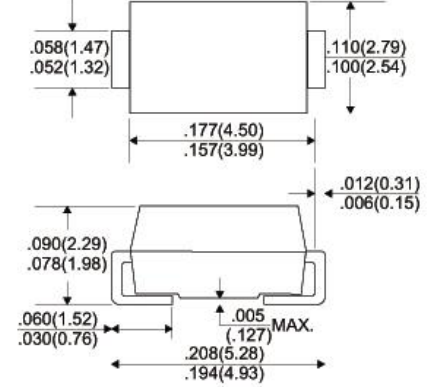
Dimensions in inches and (millimeters)

**DO-214AB (SMC)**



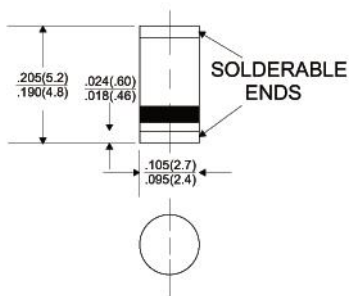
Dimensions in inches and (millimeters)

**DO-214AC(SMA)**



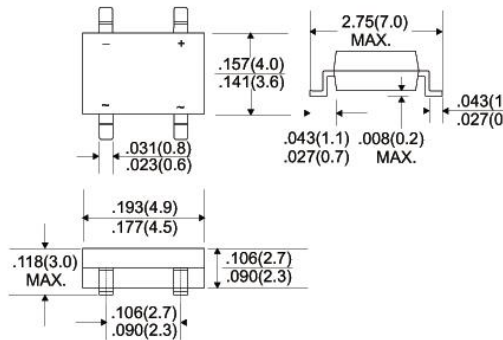
Dimensions in inches and (millimeters)

**MELF**



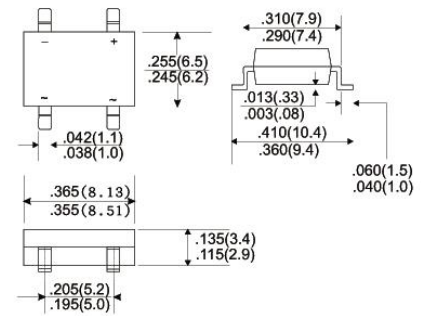
Dimensions in inches and (millimeters)

**Mini DIP**



Dimensions in inches and (millimeters)

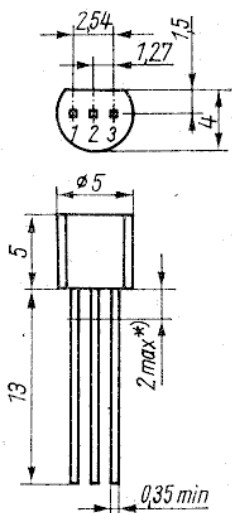
**DBS**



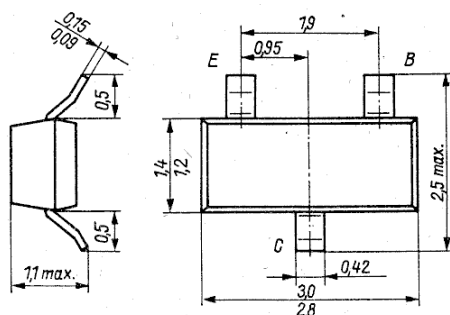
Dimensions in inches and (millimeters)

## Transistor Case

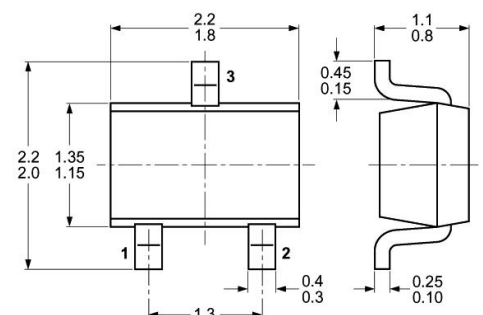
**TO-92**



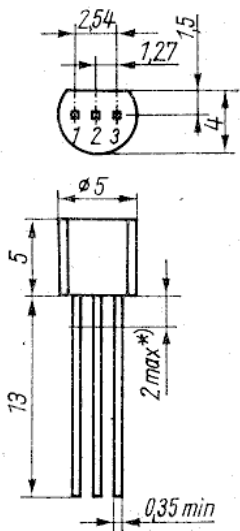
**SOT-23**



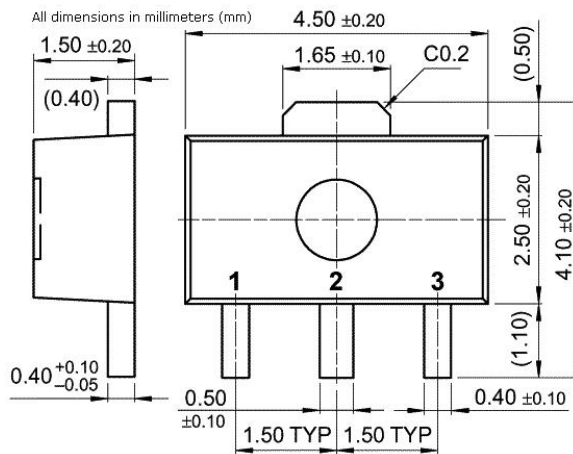
**SOT-323**



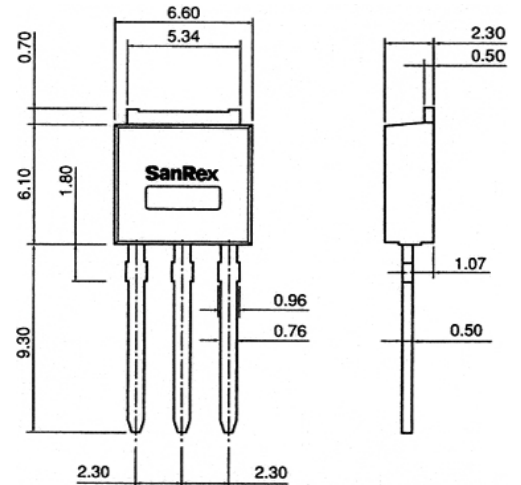
**TO-126**



**SOT-89**



**TO-251**



**Gas Discharge Tube**

DC Breakdown Voltage: 75V( 90V,150V,230V,350V,475V,600V) ± 15% (@rising voltage 100V/s)

Insulation Resistance: ≥ 10000MΩ

Electrode Capacitance: ≤ 1.5 pF (@ 1MHz)

Surge Breakdown Voltage: ≤ 650V (@rising voltage 1000V/!s)

Life Tests:

- AC Discharge Current: 20A (5 times, 1s per time with 3mins interval)

- Surge Discharge Current:

200A (10/1000!s,300times with 3mins interval)

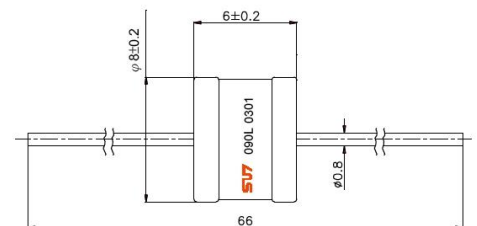
20kA (8/20!s,10times with 3mins interval)

ARR-AP075L-CA8
ARR-AP090L-CA8
ARR-AP150L-CA8
ARR-AP230L-CA8
ARR-AP350L-CA8
ARR-AP470L-CA8
ARR-AP600L-CA8
ARR-BP075L-CA8
ARR-BP090L-CA8
ARR-BP150L-CA8
ARR-BP230L-CA8
ARR-BP350L-CA8
ARR-BP470L-CA8
ARR-BP600L-CA8

ARR – AP75L-CA8



ARR-BP90L-CA8



The other types please have a look at our homepage: [www.atd-elektronik.cz](http://www.atd-elektronik.cz)

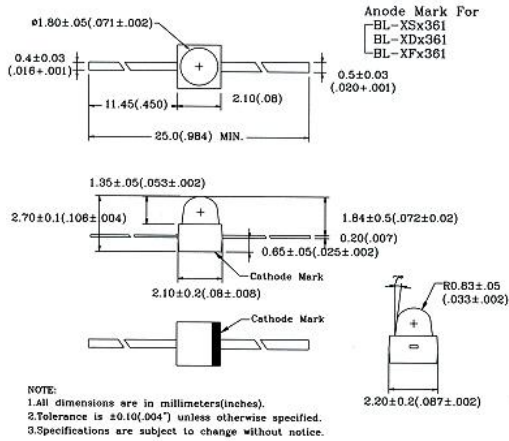


# Led

## AXIAL LED

### Serie BL-Xxx61

	UNIT	SPEC.
IF	mA	30
IFp	mA	100
VR	V	5
Topr	C	-25 +80
Tstg	C	-30 +85



Part No.	Chip				Lens Appearance	Electro - optical Data (At 20mA)				Viewing Angle 201/2 (dcg)
	Material	Emitted Color	$\lambda_p$	$\lambda_d$		Vf(V)		Iv(mcd)		
			(nm)	(nm)		Typ.	Max.	Min.	Typ.	
BL - XE1361	GaAsP/GaP	Hi-Eff Red	640	628	Water Clear	2.0	2.6	18.5	40.0	35
BL - XS1361	GaAlAs/GaAs	Super Red	660	643		1.7	2.6	28.0	60.0	
BL - XD0361	GaAlAs/GaAs	Super Red	660	643		1.8	2.6	28.0	75.0	
BL - XF0361	GaAlAs	Super Red	660	643		2.1	2.6	42.0	100.0	
BL - XUB361	A1GalnP	Super Red	645	632		2.1	2.6	42.0	100.0	
BL - XJB361	A1GalnP	Super Orange Red	620	615		2.2	2.6	63.0	150.0	
BL - XJD361	A1GalnP	Super Orange Red	630	625		2.1	2.6	63.0	150.0	
BL - XG0361	GaP/GaP	Yellow Green	568	571		2.1	2.6	18.5	45.0	
BL - XX1361	GaP/GaP	Hi-Eff Green	568	570		2.0	2.6	28.0	55.0	
BL - XW1361	GaP/GaP	Pure Green	557	563		2.2	2.6	5.5	15.0	
BL - XGD361	A1GalnP	Super Yellow Green	570	570		2.0	2.6	28.0	60.0	
BL - XG4361	InGaN	Bluish Green	505	505		3.5	4.0	94.0	250.0	
BL - XG6361	InGaN	Green	525	525		3.5	4.0	94.0	300.0	
BL - XY0361	GaAsP/GaP	Yellow	583	585		2.1	2.6	12.3	30.0	
BL - XKB361	A1GalnP	Super Yellow	590	587		2.1	2.6	94.0	200.0	
BL - XKD361	A1GalnP	Super Yellow	595	594		2.1	2.6	94.0	200.0	
BL - XA1361	GaAsP/GaP	Amber	610	610		2.2	2.6	5.5	15.0	
BL - XJF361	A1GalnP	Super Amber	610	605		2.0	2.6	63.0	150.0	

These series please have a look at our homepage: [www.atd-elektronik.cz](http://www.atd-elektronik.cz)

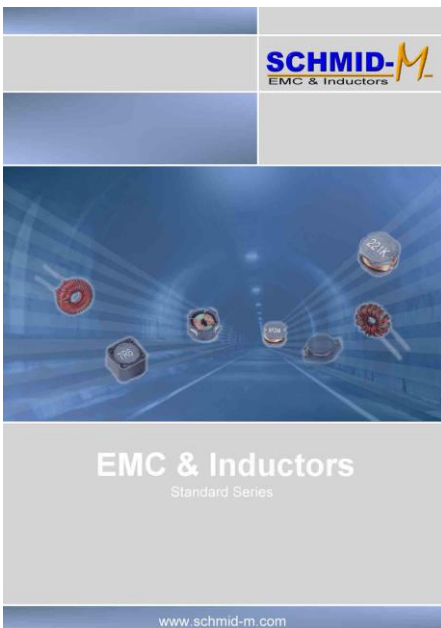
3mm ULTRA BRIGHT  
 3,5 BLUE  
 SMD  
 1026 CHIP

5 ULTRA BRIGHT  
 3 STANDARD  
  
 0805 CHIP

5 ULTRA BRIGHT  
 5 STANDARD  
  
 0603 CHIP

5 ULTRA BRIGHT  
  
  
 1206 BT-COLOR

**We offer you also these catalogues:**



## **EMC & Inductors** Standard Series

- Round cable snap ferrites
  - Flat Ferrite with Clip
  - Flat Ferrite Cores
  - Torodial Cores
  - Ferrite Beads
  - SMD Multilayer chips
  - SMD Air Coil
  - SMD Wire Wound Inductor
  - SMD Power Inductor
  - Chip Beads
- And more...

## **Connectors** Standard series

- MMCX, MCX
  - SMA, SMB, SMC, SSMA
  - 75 OHM SMB
  - N, TNC, BNC
  - MINI – UHF
  - MHV
  - FME
  - Between series adapters
  - Reverse polarity Connectors
  - Cable Assemblies
- And more...

## **DC/DC Converters** Standard series

- Industry Standard Pin-Outs
  - Customer Design
  - Up to 6000 Vdc Isolation
  - RoHs Conform
  - Wide Input Range
  - SMD, SIL and DIL Package
  - Regulated/Unregulated Output
- And more...

*Also provide:*

*RIA Connect, Stocko, Rosenberger, Murate, Lemo, Panasonic, Samtec, Bopla, Atmel, Harting, Diotec, Wago, Binder, Lapp Kabel, Hirschmann, Meder, Vishay, Schuter, Apem, Secme, ICP, ODU, Atmel, Rafi, Comus, Labtech, Citel, Mat Jaybeam, RF Immunity Ltd., Murata, Coilcraft, TDK, Vogt, Phoenix, Contact, FCI, 3M, belden, Bournd, Panduit, Lumberg, Piher, Wima, Amphenol, ERNI, WECO, FAULMABER, AD, Texas Instrument, Mickrochip, Linear Technology, TT electronics,...*

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**News: Ferrites and Accessories**

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