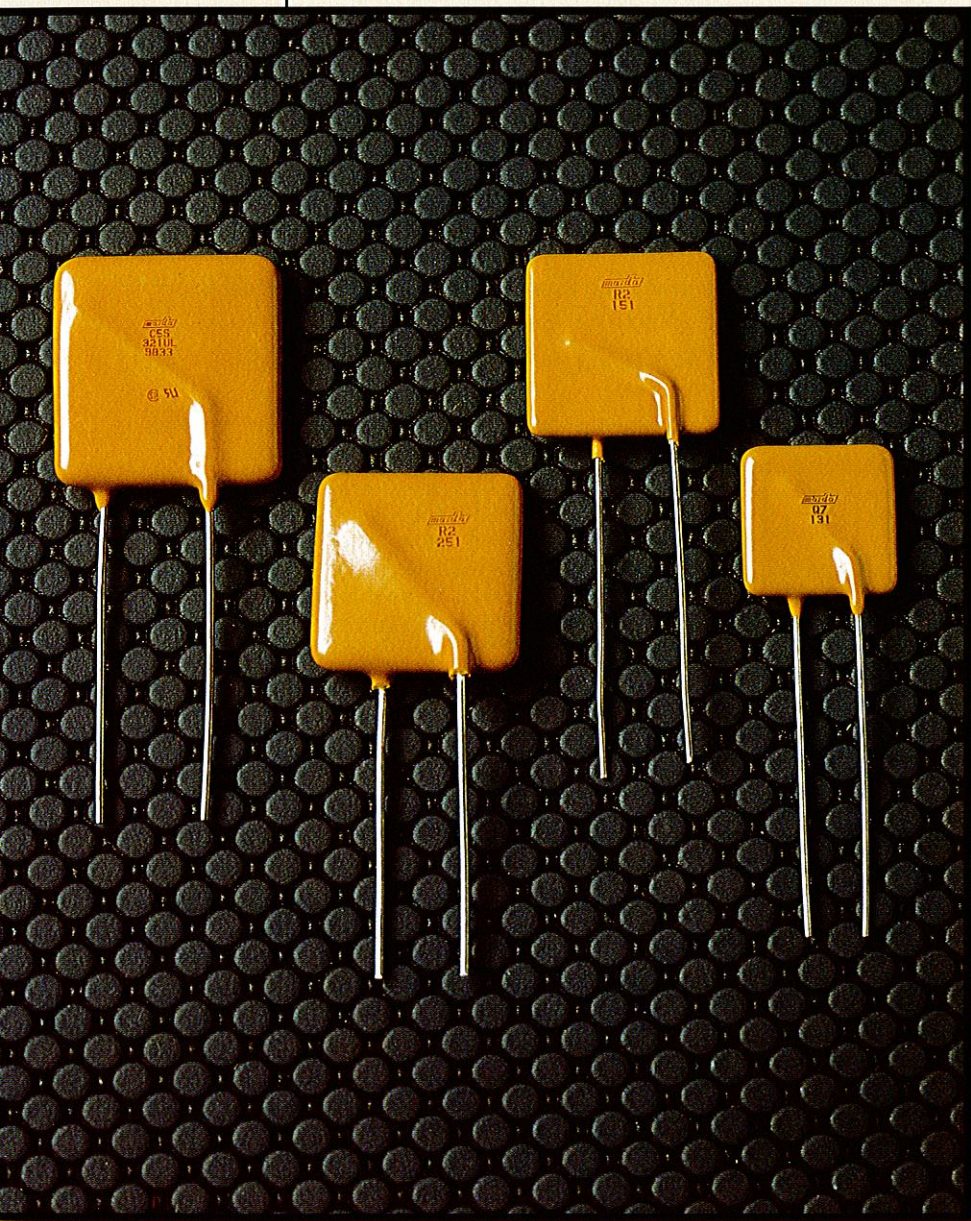




LOW PROFILE
SERIES



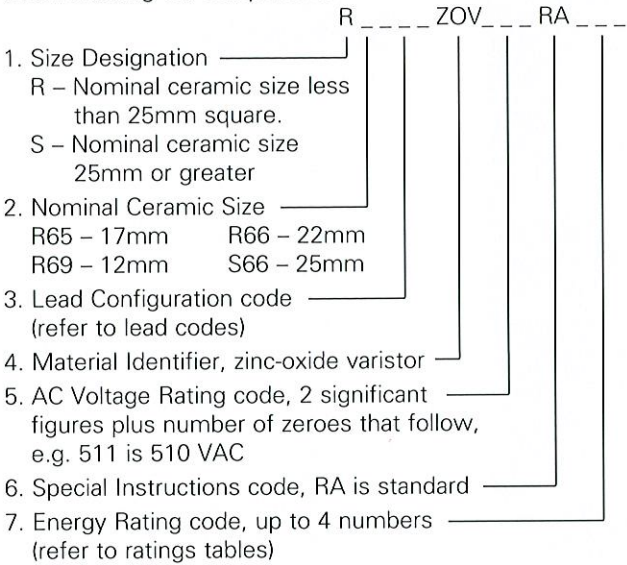
LOW PROFILE SERIES

INTRODUCTION

The Low Profile series complements our Standard Series of varistors. Configured as square wire-leaded components which are designed to fit into a space that Standard Series electrically equivalent varistors are unable to fit. A big advantage of the Low Profile series is low seating height and smaller width when mounted on the PC board. The voltages for this series range from 130VAC to 1000VAC. The four sizes available are 12mm, 17mm, 22mm, and 25mm.

Style Designation

The Maida style number is the primary means to identify our components when ordered. The style number identifies several parameters that are important for the characteristics of the device. Observe the following part numbering system when ordering our components:



An example of a typical Maida style number is R6621ZOV151RA200. This style number displays a nominal ceramic size of 22mm, a standard lead code showing straight wire leads, a maximum ac continuous operating voltage of 150 VAC.

Standard Marking

Minimum marketing information shall consist of an abbreviated style designation and, when space is available, the manufacturer's initials "MDC" or the company logo.

For example,
MDC
R66
151UL

Where:
R66 – Nominal ceramic size
151 – AC voltage rating code
UL – UL recognition if applicable

A manufacturing date code is available upon request.
Other safety agency designations are included if applicable.

How to Order the Low Profile Series Varistor

The following specifications tables provide a way to match the Maida style number to a varistor that provides the necessary specifications for a specific application. Once the general style number is obtained, it will be necessary to determine the required lead configuration. Refer to the lead codes section and apply the required code to the Maida style number when ordering. Custom lead configurations are available. Contact our engineering department for additional information.

For more information call us at (757) 723-0785.

130, 140, 150, and 180 VAC Varistors

Maida Style Number	Recognitions To Safety Agency Standards						Nominal Size	Minimum Marking	Maximum Ratings						Electrical Characteristics					
									Continuous		Transient				Varistor Voltage @1 mA DC		Max Clamping Voltage (@Test Current)		Typical Cap.	
											Energy		Peak Current 8 x 20 µsec # Pulses							
	Applied Voltage		10 x 1000 µsec		8 x 20 µsec		1 2		Vmin	Vmax	(8 x 20 µsec)		1 V rms @1kHz							
	(AC)	(DC)	(J)	(J)	(A)	(A)	(V)	(V)	(V)	(A)	(pF)									
R69* *ZOV131RA70	X	X	X	P	P	P	12	R69 - 131	130	175	70	70	6500	5000	184	224	340	50	750	
R65* *ZOV131RA150	X	X	X	P	P	P	17	R65 - 131	130	175	150	150	12000	9000	184	224	340	100	1800	
R66* *ZOV131RA170	X	X	X	P	P	P	22	R66 - 131	130	175	170	170	18000	15000	184	224	325	150	3300	
S66* *ZOV131RA235	X	X	X	P	P	P	25	S66 - 131	130	175	235	235	22000	18000	184	224	325	200	4200	
R69* *ZOV141RA78	X	X	X	P	P	P	12	R69 - 141	140	180	78	78	6500	5000	198	242	360	50	680	
R65* *ZOV141RA160	X	X	X	P	P	P	17	R65 - 141	140	180	160	160	12000	9000	198	242	360	100	1700	
R66* *ZOV141RA180	X	X	X	P	P	P	22	R66 - 141	140	180	180	180	18000	15000	198	242	345	150	3100	
S66* *ZOV141RA240	X	X	X	P	P	P	25	S66 - 141	140	180	240	240	22000	18000	198	242	345	200	4000	
R69* *ZOV151RA84	X	X	X	P	P	P	12	R69 -151	150	200	84	84	6500	5000	212	259	395	50	620	
R65* *ZOV151RA170	X	X	X	P	P	P	17	R65 - 151	150	200	170	170	12000	9000	212	259	395	100	1600	
R66* *ZOV151RA190	X	X	X	P	P	P	22	R66 - 151	150	200	190	190	18000	15000	212	259	360	150	2500	
S66* *ZOV151RA250	X	X	X	P	P	P	25	S66 - 151	150	200	250	250	22000	18000	212	259	360	200	3600	
R69* *ZOV181RA100	X	X	X	P	P	P	12	R69 - 181	180	230	100	100	6000	4500	255	311	465	50	560	
R65* *ZOV181RA190	X	X	X	P	P	P	17	R65 - 181	180	230	190	190	10000	7000	255	311	465	100	1300	
R66* *ZOV181RA200	X	X	X	P	P	P	22	R66 - 181	180	230	200	200	15000	12000	255	311	455	150	2400	
S66* *ZOV181RA310	X	X	X	P	P	P	25	S66 - 181	180	230	310	310	18000	15000	255	311	455	200	3000	

NOTES:

Appendix A lists the single-pulse peak current and energy ratings on file with the Safety Agencies.

Maximum transient rating specified in this table are valid. They may differ from those shown in Appendix A.

A = UL1449 File E86730 - Transient Voltage Surge Suppression

D = VDE/CECC 42000/42201 & IEC 1051

P = Pending Approvals

B = UL1414 File E38785 - Across - The Line Applications

E = UL497B - File E180012

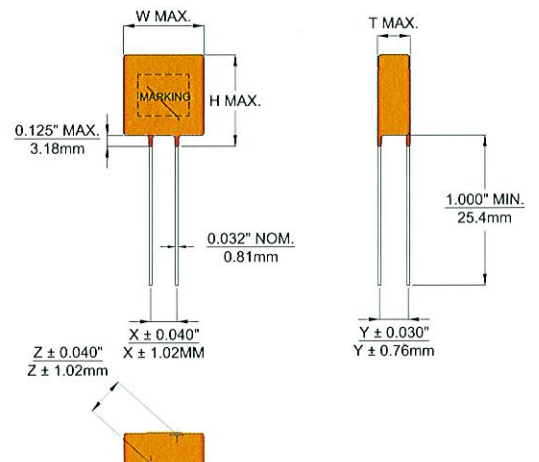
C = CSA C22.2 File LR33468

F = SEV - 96.7 70250.01

* Up to 2 digit code to designate lead configuration

Standard Dimensions: Inches (mm)

Size code	H	W	Z	OFFSET AND THICKNESS							
				130 VAC		140 VAC		150 VAC		180 VAC	
				Y	T	Y	T	Y	T	Y	T
R69	0.691 [17.55]	0.566 [14.38]	0.300 [7.62]	0.067 [1.7]	0.248 [6.3]	0.07 [1.78]	0.252 [6.4]	0.074 [1.88]	0.257 [6.53]	0.082 [2.08]	0.267 [6.78]
R65	0.888 [22.56]	0.763 [19.38]	0.300 [7.62]	0.067 [1.7]	0.248 [6.3]	0.07 [1.78]	0.252 [6.4]	0.074 [1.88]	0.257 [6.53]	0.082 [2.08]	0.267 [6.78]
R66	1.050 [26.67]	0.925 [23.5]	0.394 [10]	0.067 [1.7]	0.248 [6.3]	0.07 [1.78]	0.252 [6.4]	0.074 [1.88]	0.257 [6.53]	0.082 [2.08]	0.267 [6.78]
S66	1.267 [32.18]	1.142 [26.83]	0.394 [10]	0.067 [1.7]	0.248 [6.3]	0.07 [1.78]	0.252 [6.4]	0.074 [1.88]	0.257 [6.53]	0.082 [2.08]	0.267 [6.78]



Voltage vs. Current characteristic curves for each component are available from our engineering department.

LOW PROFILE SERIES

SPECIFICATIONS

210, 230, 250, and 270 VAC Varistors

Maida Style Number	Recognitions To Safety Agency Standards						Nominal Size	Minimum Marking	Maximum Ratings						Electrical Characteristics					
									Continuous		Transient				Varistor Voltage @1 mA DC		Max Clamping Voltage (@Test Current)		Typical Cap.	
											Energy		Peak Current (8 x 20µsec) # Pulses							
	10 x 1000 µsec	8 x 20 µsec	1		2				Vmin	Vmax	(8 x 20µsec)		1 V rms @1kHz							
(AC)	(DC)	(J)	(J)	(A)	(A)	(V)	(V)	(V)	(A)	(pF)										
R69* *ZOV211RA120	X X X P P P	12	R69 - 211	210	270	120	120	6000	4500	297	363	540	50	510						
R65* *ZOV211RA230	X X X P P P	17	R65 - 211	210	270	230	230	10000	7000	297	363	540	100	1250						
R66* *ZOV211RA250	X X X P P P	22	R66 - 211	210	270	250	250	15000	12000	297	363	540	150	2000						
S66* *ZOV211RA340	X X X P P P	25	S66 - 211	210	270	420	420	18000	15000	297	363	540	200	2800						
R69* *ZOV231RA135	X X X P P P	12	R69 - 231	230	300	135	135	6000	4500	326	397	595	50	470						
R65* *ZOV231RA270	X X X P P P	17	R65 - 231	230	300	270	270	10000	7000	326	397	595	100	1000						
R66* *ZOV231RA280	X X X P P P	22	R66 - 231	230	300	280	280	15000	12000	326	397	590	150	1900						
S66* *ZOV231RA360	X X X P P P	25	S66 - 231	230	300	490	490	18000	15000	326	397	590	200	2500						
R69* *ZOV251RA145	X X X P P P	12	R69 - 251	250	330	145	145	6000	4500	354	432	650	50	430						
R65* *ZOV251RA300	X X X P P P	17	R65 - 251	250	330	300	300	10000	7000	354	432	650	100	910						
R66* *ZOV251RA315	X X X P P P	22	R66 - 251	250	330	315	315	15000	12000	354	432	620	150	1700						
S66* *ZOV251RA400	X X X P P P	25	S66 - 251	250	330	550	550	18000	15000	354	432	620	200	2300						
R69* *ZOV271RA160	X X X P P P	12	R69 - 271	270	360	160	160	6000	4500	382	466	710	50	390						
R65* *ZOV271RA325	X X X P P P	17	R65 - 271	270	360	325	325	10000	7000	382	466	710	100	850						
R66* *ZOV271RA340	X X X P P P	22	R66 - 271	270	360	340	340	15000	12000	382	466	680	150	1600						
S66* *ZOV271RA430	X X X P P P	25	S66 - 271	270	360	595	595	18000	15000	382	466	680	200	2100						

NOTES:

Appendix A lists the single-pulse peak current and energy ratings on file with the Safety Agencies.

Maximum transient rating specified in this table are valid. They may differ from those shown in Appendix A.

A = UL1449 File E86730 - Transient Voltage Surge Suppression

D = VDE/CECC 42000/42201 & IEC 1051

P = Pending Approvals

B = UL1414 File E38785 - Across - The Line Applications

E = UL497B - File E180012

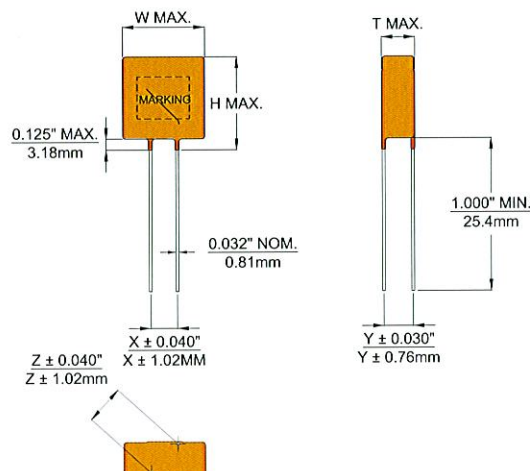
C = CSA C22.2 File LR33468

F = SEV - 96.7 70250.01

* * Up to 2 digit code to designate lead configuration

Standard Dimensions: Inches (mm)

Size code	H	W	Z	OFFSET AND THICKNESS							
				210 VAC		230 VAC		250 VAC		270 VAC	
				Y	T	Y	T	Y	T	Y	T
R69	0.691 [17.55]	0.566 [14.38]	0.300 [7.62]	0.091 [2.31]	0.275 [6.99]	0.096 [2.44]	0.280 [7.11]	0.101 [2.57]	0.287 [7.29]	0.106 [2.69]	0.294 [7.47]
R65	0.888 [22.56]	0.763 [19.38]	0.300 [7.62]	0.091 [2.31]	0.275 [6.99]	0.096 [2.44]	0.280 [7.11]	0.101 [2.57]	0.287 [7.29]	0.106 [2.69]	0.294 [7.47]
R66	1.050 [26.67]	0.925 [23.5]	0.394 [10]	0.091 [2.31]	0.275 [6.99]	0.096 [2.44]	0.280 [7.11]	0.101 [2.57]	0.287 [7.29]	0.106 [2.69]	0.294 [7.47]
S66	1.267 [32.18]	1.142 [26.83]	0.394 [10]	0.091 [2.31]	0.275 [6.99]	0.096 [2.44]	0.280 [7.11]	0.101 [2.57]	0.287 [7.29]	0.106 [2.69]	0.294 [7.47]



Voltage vs. Current characteristic curves for each component are available from our engineering department.

300, 320, 360 AND 390 VAC Varistors

Maida Style Number	Recognitions To Safety Agency Standards	Nominal Size	Minimum Marking	Maximum Ratings						Electrical Characteristics					
				Continuous		Transient				Varistor Voltage @1 mA DC		Max Clamping Voltage (@Test Current)		Typical Cap.	
				Applied Voltage		Energy		Peak Current 8 x 20 μ sec # Pulses							
				(AC)	(DC)	10 x 1000 μ sec (J)	8 x 20 μ sec (J)	1	2	Vmin (V)	Vmax (V)	(8 x 20 μ sec) (V)	(A)	1 V rms @1kHz (pF)	
R69* *ZOV301RA175	X X X P P P	12	R69 - 301	300	390	175	175	6000	4500	425	518	790	50	360	
R65* *ZOV301RA350	X X X P P P	17	R65 - 301	300	390	350	350	10000	7000	425	518	760	100	780	
R66* *ZOV301RA360	X X X P P P	22	R66 - 301	300	390	360	360	13000	10000	425	518	760	150	1400	
S66* *ZOV301RA460	X X X P P P	25	S66 - 301	300	390	640	640	15000	12000	425	518	760	200	1900	
R69* *ZOV321RA190	X X X P P P	12	R69 - 321	320	420	190	190	6000	4500	453	553	850	50	330	
R65* *ZOV321RA385	X X X P P P	17	R65 - 321	320	420	385	385	10000	7000	453	553	810	100	720	
R66* *ZOV321RA430	X X X P P P	22	R66 - 321	320	420	430	430	13000	10000	453	553	810	150	1300	
S66* *ZOV321RA510	X X X P P P	25	S66 - 321	320	420	700	700	15000	12000	453	553	810	200	1800	
R69* *ZOV361RA205	X X X P P P	12	R69 - 361	360	470	205	205	6000	4500	522	638	960	50	320	
R65* *ZOV361RA410	X X X P P P	17	R65 - 361	360	470	410	410	10000	7000	522	638	932	100	650	
R66* *ZOV361RA440	X X X P P P	22	R66 - 361	360	470	440	440	13000	10000	522	638	932	150	1200	
S66* *ZOV361RA560	X X X P P P	25	S66 - 361	360	470	750	750	15000	12000	522	638	932	200	1500	
R69* *ZOV391RA215	X X X P P P	12	R69 - 391	390	505	215	215	6000	4500	552	674	1025	50	300	
R65* *ZOV391RA420	X X X P P P	17	R65 - 391	390	505	420	420	10000	7000	552	674	1025	100	600	
R66* *ZOV391RA460	X X X P P P	22	R66 - 391	390	505	460	460	13000	10000	552	674	1025	150	1100	
S66* *ZOV391RA590	X X X P P P	25	S66 - 391	390	505	770	770	15000	12000	552	674	1025	200	1500	

NOTES:

Appendix A lists the single-pulse peak current and energy ratings on file with the Safety Agencies.

Maximum transient rating specified in this table are valid. They may differ from those shown in Appendix A.

A = UL1449 File E86730 - Transient Voltage Surge Suppression

D = VDE/CECC 42000/42201 & IEC 1051

P = Pending Approvals

B = UL1414 File E38785 - Across - The Line Applications

E = UL497B - File E180012

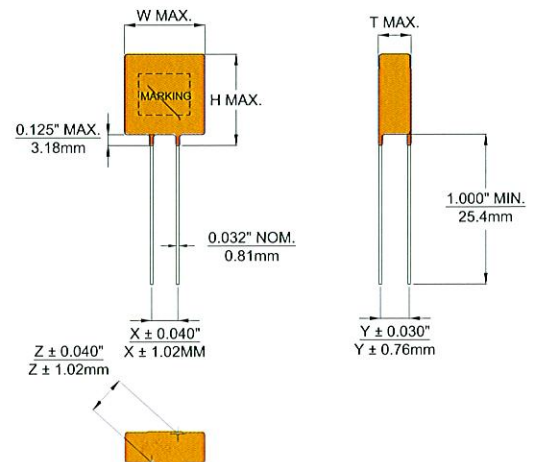
C = CSA C22.2 File LR33468

F = SEV - 96.7 70250.01

* : Up to 2 digit code to designate lead configuration

Standard Dimensions: Inches (mm)

Size code	H	W	Z	OFFSET AND THICKNESS							
				300 VAC		320 VAC		360 VAC		390 VAC	
				Y	T	Y	T	Y	T	Y	T
R69	0.691 [17.55]	0.566 [14.38]	0.300 [7.62]	0.181 [4.60]	0.305 [7.75]	0.184 [4.67]	0.310 [7.87]	0.193 [4.90]	0.318 [8.08]	0.199 [5.05]	0.325 [8.26]
R65	0.888 [22.56]	0.763 [19.38]	0.300 [7.62]	0.181 [4.60]	0.305 [7.75]	0.184 [4.67]	0.310 [7.87]	0.193 [4.90]	0.318 [8.08]	0.199 [5.05]	0.325 [8.26]
R66	1.050 [26.67]	0.925 [23.5]	0.394 [10]	0.181 [4.60]	0.305 [7.75]	0.184 [4.67]	0.310 [7.87]	0.193 [4.90]	0.318 [8.08]	0.199 [5.05]	0.325 [8.26]
S66	1.267 [32.18]	1.142 [29.25]	0.394 [10]	0.181 [4.60]	0.305 [7.75]	0.184 [4.67]	0.310 [7.87]	0.193 [4.90]	0.318 [8.08]	0.199 [5.05]	0.325 [8.26]



Voltage vs. Current characteristic curves for each component are available from our engineering department.

LOW PROFILE SERIES

SPECIFICATIONS

420, 460, 480, and 510 VAC Varistors

Maida Style Number	Recognitions To Safety Agency Standards	Nominal Size	Minimum Marking	Maximum Ratings						Electrical Characteristics					
				Continuous		Transient				Varistor Voltage @ 1 mA DC		Max Clamping Voltage (@Test Current)		Typical Cap.	
				Applied Voltage		Energy		Peak Current 8 x 20µsec # Pulses		Vmin	Vmax	(8 x 20 µsec)	(A)	1 V rms @1kHz	(pF)
				(AC)	(DC)	10 x 1000 µsec	8 x 20 µsec	1	2						
	A B C D E F	(mm)				(J)	(J)	(A)	(A)	(V)	(V)	(V)	(A)		
R69* *ZOV421RA225	X X X P P P	12	R69 - 421	420	560	225	225	6000	4500	594	725	1120	50	280	
R65* *ZOV421RA430	X X X P P P	17	R65 - 421	420	560	430	430	10000	7000	594	725	1060	100	560	
R66* *ZOV421RA480	X X X P P P	22	R66 - 421	420	560	480	480	13000	10000	594	725	1060	150	1000	
S66* *ZOV421RA610	X X X P P P	25	S66 - 421	420	560	780	780	15000	12000	594	725	1060	200	1400	
R69* *ZOV461RA230	X X X P P P	12	R69 - 461	460	615	230	230	6000	4500	651	795	1240	50	260	
R65* *ZOV461RA450	X X X P P P	17	R65 - 461	460	615	450	450	10000	7000	651	795	1120	100	510	
R66* *ZOV461RA500	X X X P P P	22	R66 - 461	460	615	500	500	13000	10000	651	795	1120	150	910	
S66* *ZOV461RA640	X X X P P P	25	S66 - 461	460	615	825	825	15000	12000	651	795	1120	200	1200	
R69* *ZOV481RA235	X X X P P P	12	R69 - 481	480	640	235	235	6000	4500	679	829	1300	50	240	
R65* *ZOV481RA460	X X X P P P	17	R65 - 481	480	640	460	460	10000	7000	679	829	1160	100	480	
R66* *ZOV481RA510	X X X P P P	22	R66 - 481	480	640	510	510	13000	10000	679	829	1160	150	860	
S66* *ZOV481RA650	X X X P P P	25	S66 - 481	480	640	840	840	15000	12000	679	829	1160	200	1200	
R69* *ZOV511RA240	X X X P P P	12	R69 - 511	510	675	240	240	6000	4500	722	881	1350	50	220	
R65* *ZOV511RA470	X X X P P P	17	R65 - 511	510	675	470	470	10000	7000	722	881	1280	100	450	
R66* *ZOV511RA525	X X X P P P	22	R66 - 511	510	675	525	525	13000	10000	722	881	1280	150	840	
S66* *ZOV511RA675	X X X P P P	25	S66 - 511	510	675	860	860	15000	12000	722	881	1280	200	1100	

NOTES:

Appendix A lists the single-pulse peak current and energy ratings on file with the Safety Agencies.

Maximum transient rating specified in this table are valid. They may differ from those shown in Appendix A.

A = UL1449 File E86730 - Transient Voltage Surge Suppression

D = VDE/CECC 42000/42201 & IEC 1051

P = Pending Approvals

B = UL1414 File E38785 - Across - The Line Applications

E = UL497B - File E180012

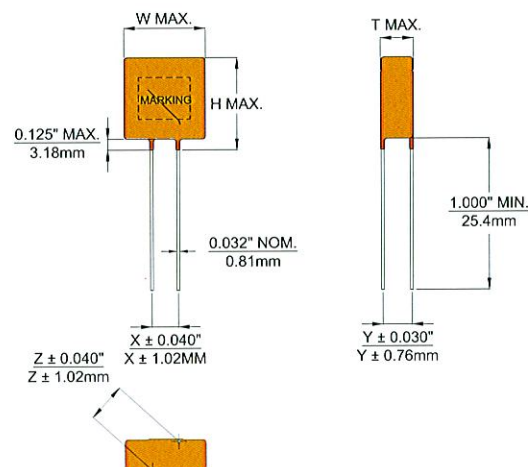
C = CSA C22.2 File LR33468

F = SEV - 96.7 70250.01

± Up to 2 digit code to designate lead configuration

Standard Dimensions: Inches (mm)

Size code	H	W	Z	OFFSET AND THICKNESS							
				420 VAC		460 VAC		480 VAC		510 VAC	
				Y	T	Y	T	Y	T	Y	T
R69	0.691 [17.55]	0.566 [14.38]	0.300 [7.62]	0.211 [5.36]	0.332 [8.43]	0.226 [5.74]	0.344 [8.74]	0.229 [5.82]	0.350 [8.89]	0.238 [6.04]	0.360 [9.14]
R65	0.888 [22.56]	0.763 [19.38]	0.300 [7.62]	0.211 [5.36]	0.332 [8.43]	0.226 [5.74]	0.344 [8.74]	0.229 [5.82]	0.350 [8.89]	0.238 [6.04]	0.360 [9.14]
R66	1.050 [26.67]	0.925 [23.5]	0.394 [10]	0.211 [5.36]	0.332 [8.43]	0.226 [5.74]	0.344 [8.74]	0.229 [5.82]	0.350 [8.89]	0.238 [6.04]	0.360 [9.14]
S66	1.267 [32.18]	1.142 [26.83]	0.394 [10]	0.211 [5.36]	0.332 [8.43]	0.226 [5.74]	0.344 [8.74]	0.229 [5.82]	0.350 [8.89]	0.238 [6.04]	0.360 [9.14]



Voltage vs. Current characteristic curves for each component are available from our engineering department.

550, 580, 620 and 680 VAC Varistors

Maida Style Number	Recognitions To Safety Agency Standards	Nominal Size	Minimum Marking	Maximum Ratings						Electrical Characteristics					
				Continuous		Transient				Varistor Voltage @1 mA DC		Max Clamping Voltage (@Test Current)		Typical Cap.	
				Applied Voltage		Energy		Peak Current 8 x 20 μ sec # Pulses		Vmin (V)	Vmax (V)	(8 x 20 μ sec) (V)	(A)	1 V rms @1kHz (pF)	
				(AC)	(DC)	10 x 1000 μ sec (J)	8 x 20 μ sec (J)	1 (A)	2 (A)						
R69* *ZOV551RA255	X X X P P P	12	R69 - 551	550	700	255	255	6000	4500	778	950	1400	50	200	
R65* *ZOV551RA510	X X X P P P	17	R65 - 551	550	700	510	510	10000	7000	778	950	1360	100	420	
R66* *ZOV551RA540	X X X P P P	22	R66 - 551	550	700	540	540	13000	10000	778	950	1360	150	800	
S66* *ZOV551RA690	X X X P P P	25	S66 - 551	550	700	930	930	15000	12000	778	950	1360	200	1000	
R69* *ZOV581RA265	X X X P P P	12	R69 - 581	580	735	265	265	6000	4500	821	1002	1500	50	180	
R65* *ZOV581RA530	X X X P P P	17	R65 - 581	580	735	530	530	10000	7000	821	1002	1430	100	400	
R66* *ZOV581RA560	X X X P P P	22	R66 - 581	580	735	560	560	13000	10000	821	1002	1430	150	750	
S66* *ZOV581RA720	X X X P P P	25	S66 - 581	580	735	970	970	15000	12000	821	1002	1430	200	990	
R69* *ZOV621RA290	X X X P P P	12	R69 - 621	620	800	290	290	6000	4500	877	1071	1650	50	160	
R65* *ZOV621RA565	X X X P P P	17	R65 - 621	620	800	565	565	10000	7000	877	1071	1540	100	380	
R66* *ZOV621RA600	X X X P P P	22	R66 - 621	620	800	600	600	13000	10000	877	1071	1540	150	700	
S66* *ZOV621RA770	X X X P P P	25	S66 - 621	620	800	1030	1030	15000	12000	877	1071	1540	200	920	
R69* *ZOV681RA310	X X X P P P	12	R69 - 681	680	860	310	310	6000	4500	962	1175	1800	50	140	
R65* *ZOV681RA620	X X X P P P	17	R65 - 681	680	860	620	620	10000	7000	962	1175	1700	100	350	
R66* *ZOV681RA655	X X X P P P	22	R66 - 681	680	860	655	655	13000	10000	962	1175	1700	150	620	
S66* *ZOV681RA840	X X X P P P	25	S66 - 681	680	860	1100	1100	15000	12000	962	1175	1700	200	840	

NOTES:

Appendix A lists the single-pulse peak current and energy ratings on file with the Safety Agencies.

Maximum transient rating specified in this table are valid. They may differ from those shown in Appendix A.

A = UL1449 File E86730 - Transient Voltage Surge Suppression

B = UL1414 File E38785 - Across - The Line Applications

C = CSA C22.2 File LR33468

D = VDE/CECC 42000/42201 & IEC 1051

E = UL497B - File E180012

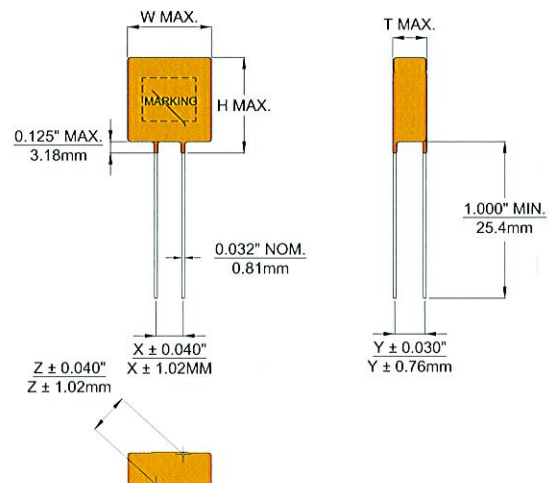
F = SEV - 96.7 70250.01

P = Pending Approvals

.. Up to 2 digit code to designate lead configuration

Standard Dimensions: Inches (mm)

Size code	H	W	Z	OFFSET AND THICKNESS							
				550 VAC		580 VAC		620 VAC		680 VAC	
				Y	T	Y	T	Y	T	Y	T
R69	0.691 [17.55]	0.566 [14.38]	0.300 [7.62]	0.248 [6.30]	0.373 [9.47]	0.257 [6.53]	0.382 [9.70]	0.268 [6.81]	0.395 [10.03]	0.277 [7.04]	0.414 [10.52]
R65	0.888 [22.56]	0.763 [19.38]	0.300 [7.62]	0.248 [6.30]	0.373 [9.47]	0.257 [6.53]	0.382 [9.70]	0.268 [6.81]	0.395 [10.03]	0.277 [7.04]	0.414 [10.52]
R66	1.050 [26.67]	0.925 [23.5]	0.394 [10]	0.248 [6.30]	0.373 [9.47]	0.257 [6.53]	0.382 [9.70]	0.268 [6.81]	0.395 [10.03]	0.277 [7.04]	0.414 [10.52]
S66	1.267 [32.18]	1.142 [29.25]	0.394 [10]	0.248 [6.30]	0.373 [9.47]	0.257 [6.53]	0.382 [9.70]	0.268 [6.81]	0.395 [10.03]	0.277 [7.04]	0.414 [10.52]



Voltage vs. Current characteristic curves for each component are available from our engineering department.

LOW PROFILE SERIES

SPECIFICATIONS

750 and 1000 VAC Varistors

Maida Style Number	Recognitions To Safety Agency Standards						Nominal Size	Minimum Marking	Maximum Ratings						Electrical Characteristics							
									Applied Voltage		Continuous		Transient		Peak Current 8 x 20µsec # Pulses		Varistor Voltage @1 mA DC		Max Clamping Voltage (Test Current)		Typical Cap. 1 V rms @1kHz	
											Energy											
											10 x 1000 µsec	8 x 20 µsec										
	(AC)	(DC)	(J)	(J)	1	2	Vmin	Vmax	(8 x 20msec)													
	A	B	C	D	E	F	(mm)							(V)	(V)	(V)	(A)	(pF)				
R69* *ZOV751RA350	X	X	X	P	P	P	12	R69 - 751	750	900	350	350	6000	4500	1062	1300	2100	50	130			
R65* *ZOV751RA670	X	X	X	P	P	P	17	R65 - 751	750	900	670	670	10000	7000	1062	1300	1880	100	300			
R66* *ZOV751RA700	X	X	X	P	P	P	22	R66 - 751	750	900	700	700	13000	10000	1062	1300	1880	150	560			
S66* *ZOV751RA900	X	X	X	P	P	P	25	S66 - 751	750	900	1250	1250	15000	12000	1062	1300	1880	200	750			
R69* *ZOV102RA510	X	X	X	P	P	P	12	R69 - 102	1000	1200	510	510	6000	4500	1414	1728	2700	50	110			
R65* *ZOV102RA860	X	X	X	P	P	P	17	R65 - 102	1000	1200	860	860	10000	7000	1414	1728	2500	100	250			
R66* *ZOV102RA875	X	X	X	P	P	P	22	R66 - 102	1000	1200	875	875	13000	10000	1414	1728	2500	150	430			
S66* *ZOV102RA1100	X	X	X	P	P	P	25	S66 - 102	1000	1200	1500	1500	15000	12000	1414	1728	2500	200	570			

NOTES:

Appendix A lists the single-pulse peak current and energy ratings on file with the Safety Agencies.

Maximum transient rating specified in this table are valid. They may differ from those shown in Appendix A.

A = UL1449 File E86730 - Transient Voltage Surge Suppression

D = VDE/CECC 42000/42201 & IEC 1051

P = Pending Approvals

B = UL1414 File E38785 - Across - The Line Applications

E = UL497B - File E180012

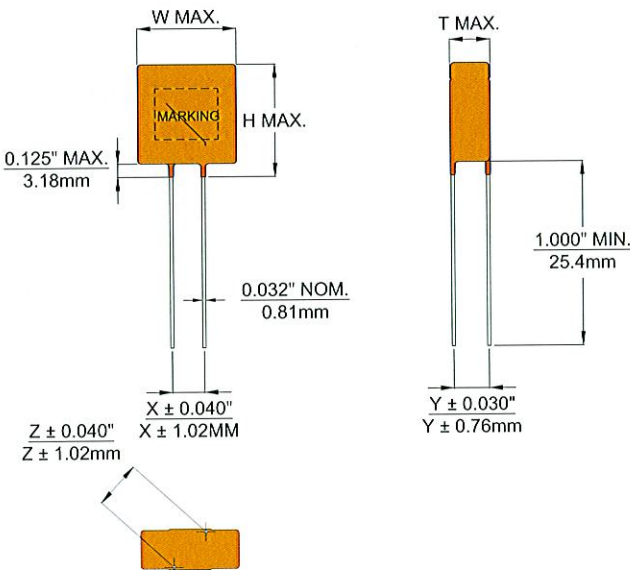
C = CSA C22.2 File LR33468

F = SEV - 96.7 70250.01

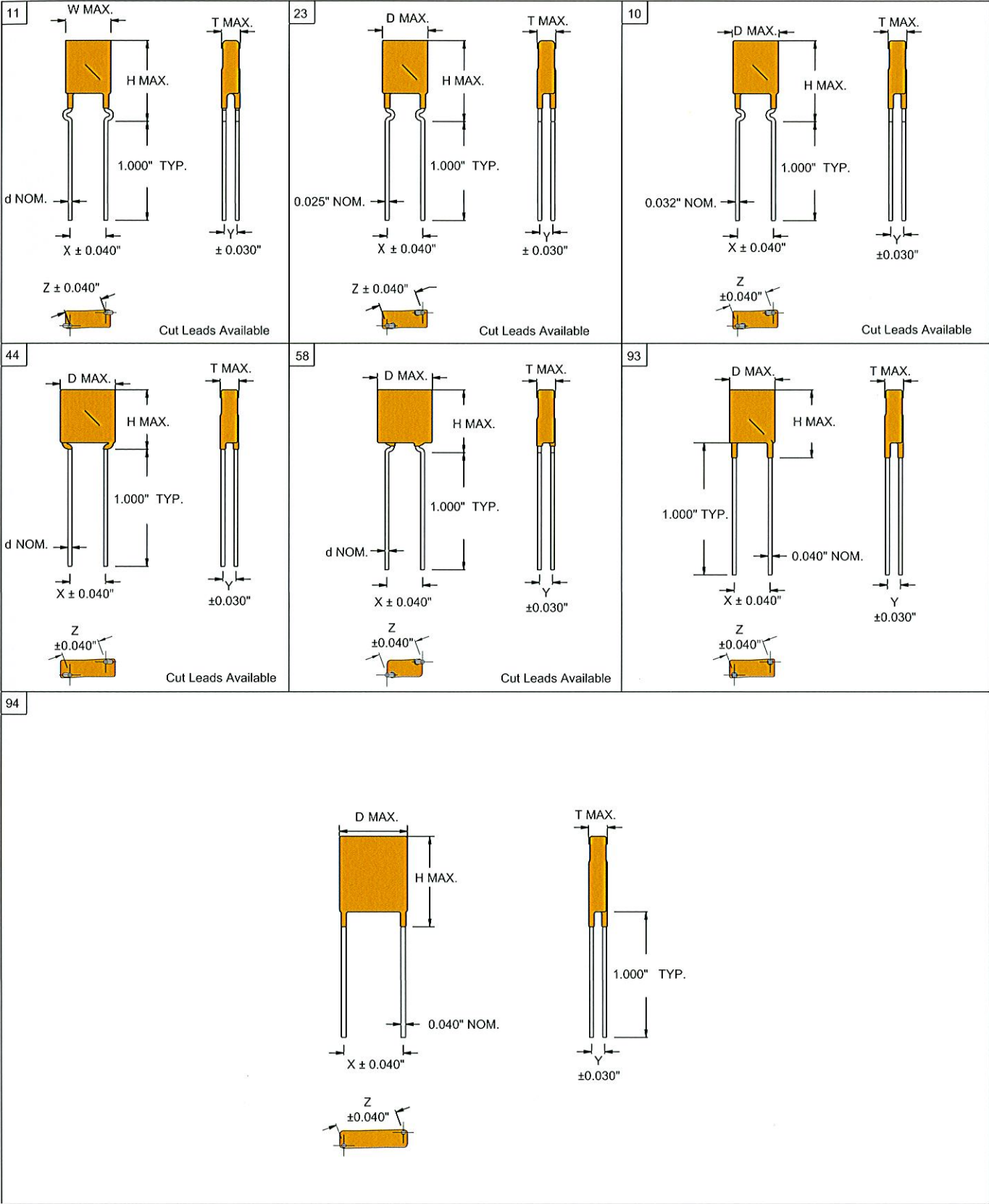
* * Up to 2 digit code to designate lead configuration

Standard Dimensions: Inches (mm)

Size code	H	W	Z	OFFSET AND THICKNESS			
				750 VAC		1000 VAC	
				Y	T	Y	T
R69	0.691 [17.55]	0.566 [14.38]	0.300 [7.62]	0.285 [7.24]	0.460 [11.68]	0.375 [9.53]	0.514 [13.06]
R65	0.888 [22.56]	0.763 [19.38]	0.300 [7.62]	0.285 [7.24]	0.460 [11.68]	0.375 [9.53]	0.514 [13.06]
R66	1.050 [26.67]	0.925 [23.5]	0.394 [10]	0.285 [7.24]	0.460 [11.68]	0.375 [9.53]	0.514 [13.06]
S66	1.267 [32.18]	1.142 [26.83]	0.394 [10]	0.285 [7.24]	0.460 [11.68]	0.375 [9.53]	0.514 [13.06]

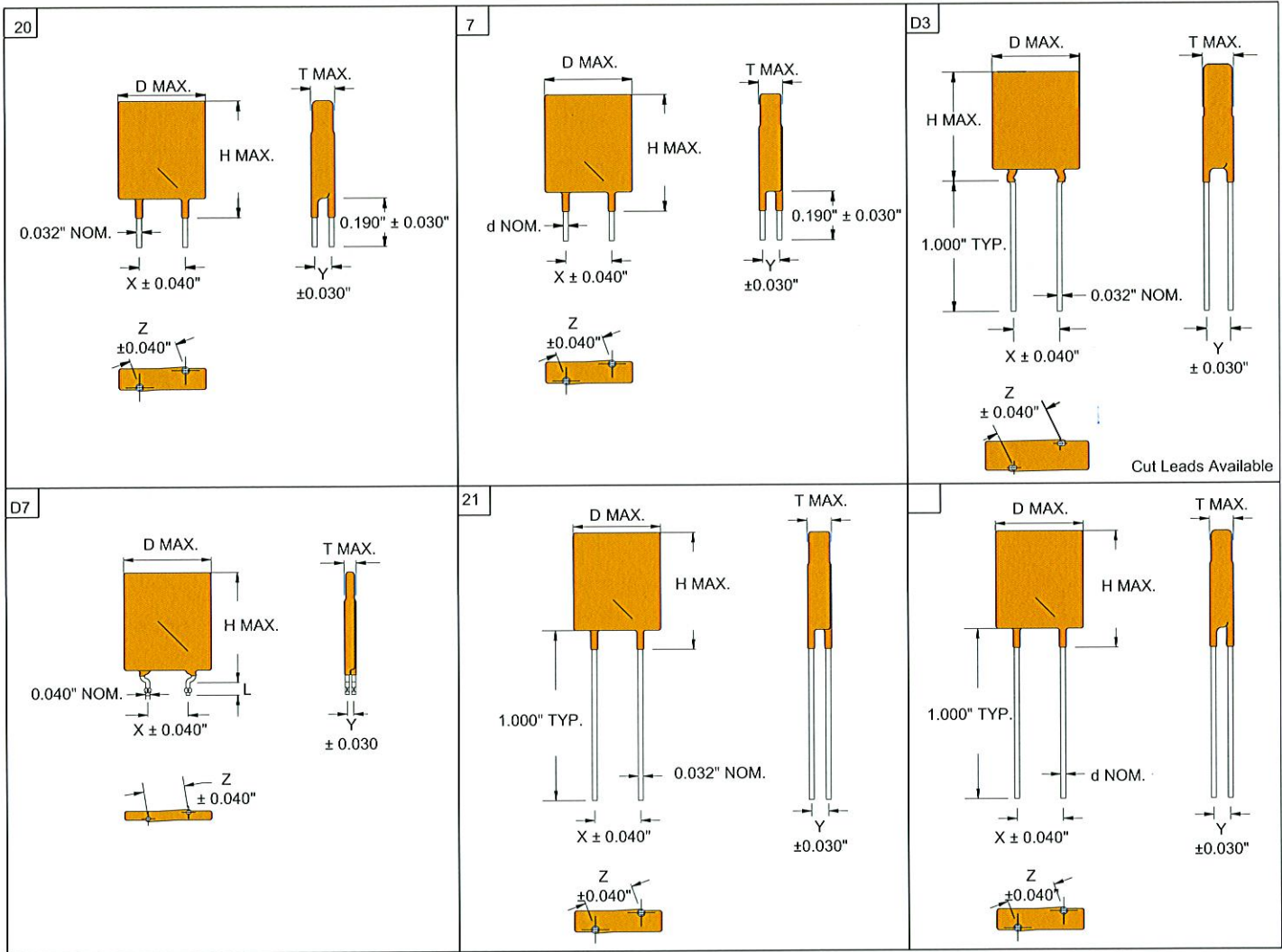


Voltage vs. Current characteristic curves for each component are available from our engineering department.



LOW PROFILE SERIES

LEAD CODES



Voltage vs. Current characteristic curves for each component are available from our engineering department.

12 mm Square Zinc Oxide Varistor Dimensions

VOLTS AC	DISK THICK NOM.	d LEAD DIA.	*LEAD OFFSET (each lead)	**Y +/- 0.030*	X +/- 0.040* Resultant Dimension for Nominal "Z" Lead Spacing		HEIGHT DIMENSIONS FOR AVAILABLE LEAD CODES																D MAX.	D7 H MAX.	***T MAX.
					0.160	0.197	0.296	0.394	0.492	No Code H MAX.	7 H MAX.	10 H MAX.	11 H MAX.	20 H MAX.	21 H MAX.	23 H MAX.	44 H MAX.	58 H MAX.	93 H MAX.	94 H MAX.	D3 H MAX.				
130	0.035	0.025		0.060	0.148	0.188	0.290	0.389	0.488	0.691	0.691	0.766	0.766	0.691	0.691	0.766	0.691	0.691			0.691		0.566	0.248	
140	0.038	0.025		0.063	0.147	0.187	0.289	0.389	0.488	0.691	0.691	0.766	0.766	0.691	0.691	0.766	0.691	0.691			0.691		0.566	0.252	
150	0.042	0.025		0.067	0.145	0.185	0.288	0.388	0.487	0.691	0.691	0.766	0.766	0.691	0.691	0.766	0.691	0.691			0.691		0.566	0.257	
180	0.042	0.025		0.067	0.145	0.185	0.288	0.388	0.487	0.691	0.691	0.766	0.766	0.691	0.691	0.766	0.691	0.691			0.691		0.566	0.267	

* Lead stepped away from disk at lead egress.

** Lead displacement including disk thickness, wire diameter, and lead offset.

*** Includes disk, wire, coating, and lead offset (if indicated).

NOTE: ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.

17 mm Square Zinc Oxide Varistor Dimensions

17MM SQUARE ZINC OXIDE VARISTOR DIMENSIONS																												
VOLTS AC	DISK THICK NOM.	d LEAD DIA.	*LEAD OFFSET (each lead)	**Y +/- 0.030*	X +/- 0.040* Resultant Dimension for Nominal "Z" Lead Spacing				HEIGHT DIMENSIONS FOR AVAILABLE LEAD CODES																D MAX.	D7 H MAX.	D MAX.	***T MAX.
					0.160	0.197	0.296	0.394	0.492	No Code H MAX.	7 H MAX.	10 H MAX.	11 H MAX.	20 H MAX.	21 H MAX.	23 H MAX.	44 H MAX.	58 H MAX.	93 H MAX.	94 H MAX.	D3 H MAX.	D7 H MAX.						
130	0.035	0.025		0.060	0.148	0.188	0.290	0.346	0.454	0.888	0.888	0.963	0.963	0.888	0.888	0.963	0.888	0.888	0.888	0.888	0.888	0.888	0.888	0.763	0.248			
140	0.038	0.025		0.063	0.147	0.187	0.289	0.347	0.454	0.888	0.888	0.963	0.963	0.888	0.888	0.963	0.888	0.888	0.888	0.888	0.888	0.888	0.888	0.763	0.252			
150	0.042	0.025		0.067	0.145	0.185	0.288	0.348	0.454	0.888	0.888	0.963	0.963	0.888	0.888	0.963	0.888	0.888	0.888	0.888	0.888	0.888	0.888	0.763	0.257			
180	0.042	0.025		0.067	0.145	0.185	0.288	0.348	0.454	0.888	0.888	0.963	0.963	0.888	0.888	0.963	0.888	0.888	0.888	0.888	0.888	0.888	0.888	0.763	0.267			

* Lead stepped away from disk at lead egress.

** Lead displacement including disk thickness, wire diameter, and lead offset.

*** Includes disk, wire, coating, and lead offset (if indicated).

NOTE: ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.

22 mm Square Zinc Oxide Varistor Dimensions

VOLTS AC	DISK THICK NOM.	d LEAD DIA.	*LEAD OFFSET (each lead)	**Y +/- 0.030*	X +/- 0.040* Resultant Dimension for Nominal "Z" Lead Spacing	HEIGHT DIMENSIONS FOR AVAILABLE LEAD CODES																D MAX.	D7 H MAX.	D MAX.	***T MAX.
						No Code		7	10	11	20	21	23	44	58	93	94	D3							
						H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.						
130	0.035	0.025		0.060	0.148	0.188	0.290	0.389	0.488	1.050	1.050	1.125	1.125	1.050	1.050	1.125	1.050	1.050	1.050	1.050	1.050	1.050	0.925	0.248	
140	0.038	0.025		0.063	0.147	0.187	0.289	0.389	0.488	1.050	1.050	1.125	1.125	1.050	1.050	1.125	1.050	1.050	1.050	1.050	1.050	1.050	0.925	0.252	
150	0.042	0.025		0.067	0.145	0.185	0.288	0.388	0.487	1.050	1.050	1.125	1.125	1.050	1.050	1.125	1.050	1.050	1.050	1.050	1.050	1.050	0.925	0.257	
180	0.042	0.025		0.067	0.145	0.185	0.288	0.388	0.487	1.050	1.050	1.125	1.125	1.050	1.050	1.125	1.050	1.050	1.050	1.050	1.050	1.050	0.925	0.267	

* Lead stepped away from disk at lead egress.

** Lead displacement including disk thickness, wire diameter, and lead offset.

*** Includes disk, wire, coating, and lead offset (if indicated).

NOTE: ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.

25 mm Square Zinc Oxide Varistor Dimensions

VOLTS AC	DISK THICK NOM.	d LEAD DIA.	*LEAD OFFSET (each lead)	**Y +/- 0.030*	X +/- 0.040* Resultant Dimensions for Nominal "Z" Lead Spacing	HEIGHT DIMENSIONS FOR AVAILABLE LEAD CODES																D MAX.	D7 H MAX.	D MAX.	***T MAX.						
						No Code		7		10		11		20		21		23		44						58		93		94	
						0.160	0.197	0.296	0.394	0.492	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.					H MAX.	H MAX.	H MAX.	H MAX.	H MAX.	H MAX.
130	0.035	0.032		0.067	0.145	0.185	0.288	0.388	0.487	1.267	1.267	1.342	1.342			1.342	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.142	0.248					
140	0.038	0.032		0.070	0.144	0.184	0.288	0.388	0.487	1.267	1.267	1.342	1.342			1.342	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.142	0.252					
150	0.042	0.032		0.074	0.142	0.183	0.287	0.387	0.486	1.267	1.267	1.342	1.342			1.342	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.142	0.257					
180	0.042	0.032		0.074	0.142	0.183	0.287	0.387	0.486	1.267	1.267	1.342	1.342			1.342	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.142	0.267					

* Lead stepped away from disk at lead egress.

** Lead displacement including disk thickness, wire diameter, and lead offset.

*** Includes disk, wire, coating, and lead offset (if indicated).

NOTE: ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.