



Part Number	Agency Mark	Device Marking	Maximum Applied Voltage		Varistor Voltage @1mA DC V	Energy 2mS J	Maximum Clamping Voltage 8/20 μ S		Peak Current A	Typical Capacitance pF	Dimensions(mm)			
			AC _{RMS}	DC			V	A			D-Max	T ± 1 mm	W	d
Low Voltage Series - Radial Lead MOVs														
Figure 64														
Z5L180		180	11	14	18(14.4-21.6)	0.3	40	1	100	1600	7.5	3.5	5.0	0.6
Z5L220		220	14	18	22(17.6-26.4)	0.4	48	1	100	1300	7.5	3.5	5.0	0.6
Z5L270		270	17	22	27(24-30)	0.5	60	1	100	1050	7.5	3.5	5.0	0.6
Z5L330		330	20	26	33(30-36)	0.6	73	1	100	900	7.5	3.5	5.0	0.6
Z5L390		390	25	31	39(35-43)	0.8	86	1	100	500	7.5	3.5	5.0	0.6
Z5L470		470	30	38	47(42-52)	1.0	104	1	100	450	7.5	3.5	5.0	0.6
Z5L560		560	35	45	56(50-62)	1.0	123	1	100	400	7.5	3.5	5.0	0.6
Z5L680		680	40	56	68(61-75)	1.2	150	1	100	350	7.5	3.5	5.0	0.6
Z5L820		820	50	65	82(74-90)	1.7	145	5	400	250	7.5	3.5	5.0	0.6
Z5L101		101	60	85	100(90-110)	2.0	175	5	400	200	7.0	3.7	5.0	0.6
Z5L121		121	75	100	120(108-132)	2.5	210	5	400	170	7.0	3.8	5.0	0.6
Z5L151		151	95	125	150(135-165)	3.0	260	5	400	140	7.0	4.0	5.0	0.6
Z5L181		181	115	153	180(162-198)	3.5	300	5	400	100	7.0	4.1	5.0	0.6
Z5L201		201	130	170	205(185-225)	4.0	355	5	400	80	7.0	4.2	5.0	0.6
Z5L221		221	140	180	220(198-242)	4.5	380	5	400	70	7.0	4.3	5.0	0.6
Z5L241		241	150	200	240(216-264)	5.0	415	5	400	70	7.0	4.4	5.0	0.6
Z5L271		271	175	225	270(243-297)	6.0	475	5	400	60	7.0	4.6	5.0	0.6
Z5L331		331	210	275	330(297-363)	6.5	580	5	400	55	7.0	4.9	5.0	0.6
Z5L361		361	230	300	360(324-396)	7.5	620	5	400	50	7.0	5.1	5.0	0.6
Z5L391		391	250	320	390(351-429)	8.0	675	5	400	50	7.0	5.4	5.0	0.6
Z5L431		431	275	350	430(387-473)	9.0	745	5	400	45	7.0	5.7	5.0	0.6
Z5L471		471	300	385	470(423-517)	10.0	810	5	400	40	7.0	6.0	5.0	0.6
Z7L180		7L180	11	14	18(14.4-21.6)	0.8	36	2.5	250	3500	9.0	3.5	5.0	0.6
Z7L220		7L220	14	18	22(17.6-26.4)	0.9	43	2.5	250	2800	9.0	3.6	5.0	0.6
Z7L270		7L270	17	22	27(24-30)	1.0	53	2.5	250	2000	9.0	3.7	5.0	0.6
Z7L330		7L330	20	26	33(30-36)	1.2	65	2.5	250	1500	9.0	3.9	5.0	0.6
Z7L390		7L390	25	31	39(35-43)	1.5	77	2.5	250	1350	9.0	3.8	5.0	0.6
Z7L470		7L470	30	38	47(42-52)	1.8	90	2.5	250	1150	9.0	3.9	5.0	0.6
Z7L560		7L560	35	45	56(50-62)	2.3	105	2.5	250	950	9.0	4.0	5.0	0.6
Z7L680		7L680	40	56	68(61-75)	3.0	125	2.5	250	700	9.0	4.2	5.0	0.6
Z7L820		7L820	50	65	82(74-90)	4.0	135	10.0	1200	550	9.0	3.6	5.0	0.6
Z7L101		7L101	60	85	100(90-110)	5.0	165	10.0	1200	500	9.0	3.7	5.0	0.6
Z7L121		7L121	75	100	120(108-132)	6.0	200	10.0	1200	450	9.0	3.8	5.0	0.6
Z7L151		7L151	95	125	150(135-165)	8.0	250	10.0	1200	350	9.0	4.0	5.0	0.6
Z7L181		7L181	115	153	180(162-198)	10.0	300	10.0	1200	220	9.0	4.1	5.0	0.6
Z10L180		10L180	11	14	18(14.4-21.6)	1.5	36	5	500	7500	13.5	3.6	7.5	0.8
Z10L220		10L220	14	18	22(17.6-26.4)	2.0	43	5	500	6000	13.5	3.7	7.5	0.8
Z10L270		10L270	17	22	27(24-30)	2.5	53	5	500	4000	13.5	3.8	7.5	0.8
Z10L330		10L330	20	26	33(30-36)	3.0	65	5	500	3000	13.5	4.0	7.5	0.8
Z10L390		10L390	25	31	39(35-43)	3.5	77	5	500	2600	13.5	4.1	7.5	0.8
Z10L470		10L470	30	38	47(42-52)	4.5	90	5	500	2200	13.5	4.0	7.5	0.8
Z10L560		10L560	35	45	56(50-62)	5.5	105	5	500	1800	13.5	4.1	7.5	0.8
Z10L680		10L680	40	56	68(61-75)	6.5	125	5	500	1300	13.5	4.3	7.5	0.8
Z10L820		10L820	50	65	82(74-90)	8.0	135	25	2500	1800	13.5	4.0	7.5	0.8
Z10L101		10L101	60	85	100(90-110)	10.0	165	25	2500	1400	13.5	4.1	7.5	0.8
Z10L121		10L121	75	100	120(108-132)	12.0	200	25	2500	1100	13.5	4.2	7.5	0.8
Z10L151		10L151	95	125	150(135-165)	16.0	250	25	2500	900	13.5	4.5	7.5	0.8
Z10L181		10L181	115	153	180(162-198)	18.0	300	25	2500	550	13.5	4.5	7.5	0.8
Z15L180		Z15L180	11	14	18(14.4-21.6)	3.5	36	10	1000	18000	17.0	3.6	7.5	0.8
Z15L220		Z15L220	14	18	22(17.6-26.4)	4.0	43	10	1000	15000	17.0	3.7	7.5	0.8
Z15L270		Z15L270	17	22	27(24-30)	5.0	53	10	1000	10000	17.0	3.8	7.5	0.8
Z15L330		Z15L330	20	26	33(30-36)	6.0	65	10	1000	7500	17.0	4.0	7.5	0.8
Z15L390		Z15L390	25	31	39(35-43)	7.2	77	10	1000	6500	17.0	4.1	7.5	0.8
Z15L470		Z15L470	30	38	47(42-52)	8.8	90	10	1000	5500	17.0	4.0	7.5	0.8
Z15L560		Z15L560	35	45	56(50-62)	10.0	105	10	1000	4500	17.0	4.1	7.5	0.8
Z15L680		Z15L680	40	56	68(61-75)	13.0	125	10	1000	3300	17.0	4.3	7.5	0.8
Z15L820		Z15L820	50	65	82(74-90)	14.5	135	50	4500	2900	17.0	4.0	7.5	0.8
Z15L101		Z15L101	60	85	100(90-110)	20.0	165	50	4500	2400	17.0	4.1	7.5	0.8
Z15L121		Z15L121	75	100	120(108-132)	22.0	200	50	4500	1900	17.0	4.2	7.5	0.8
Z15L151		Z15L151	95	125	150(135-165)	30.0	250	50	4500	1500	17.0	4.5	7.5	0.8
Z15L181		Z15L181	115	153	180(162-198)	35.0	300	50	4500	1200	17.0	4.5	7.5	0.8
Z21L180		Z21L180	11	14	18(14.4-21.6)	10.0	36	20	2000	18000	23.0	4.1	10.0	1.0
Z21L220		Z21L220	14	18	22(17.6-26.4)	13.0	43	20	2000	15000	23.0	4.2	10.0	1.0
Z21L270		Z21L270	17	22	27(24-30)	15.0	53	20	2000	10000	23.0	4.3	10.0	1.0
Z21L330		Z21L330	20	26	33(30-36)	20.0	65	20	2000	7500	23.0	4.5	10.0	1.0
Z21L390		Z21L390	25	31	39(35-43)	24.0	77	20	2000	6500	23.0	4.5	10.0	1.0
Z21L470		Z21L470	30	38	47(42-52)	30.0	90	20	2000	5500	23.0	4.6	10.0	1.0
Z21L560		Z21L560	35	45	56(50-62)	35.0	105	20	2000	4500	23.0	4.7	10.0	1.0
Z21L680		Z21L680	40	56	68(61-75)	40.0	125	20	2000	3300	23.0	4.8	10.0	1.0
Z21L820		Z21L820	50	65	82(74-90)	27.0	135	100	6500	2900	23.0	4.5	10.0	1.0
Z21L101		Z21L101	60	85	100(90-110)	30.0	165	100	6500	2400	23.0	4.6	10.0	1.0
Z21L121		Z21L121	75	100	120(108-132)	40.0	200	100	6500	1190	23.0	4.7	10.0	1.0
Z21L151		Z21L151	95	125	150(135-165)	50.0	250	100	6500	1500	23.0	4.9	10.0	1.0
Z21L181		Z21L181	115	153	180(162-198)	60.0	300	100	6500	1200	23.0	4.9	10.0	1.0

Radial leaded MOVs having the Underwriters Laboratory Recognized Component Mark, conform to UL 1414, UL1449 edition 3, as listed on DTI UL file number E319342. Maximum Power Dissipation: 5 mm-0.1 watt; 7 mm-0.25 watt; 10 mm-0.4 watt; 14 mm-0.6 watt, 20 mm-1 watt.

Typical response time is less than 15 nanoseconds. See page 57 for explanation of UL Surge Suppression Device Type Designations.

All devices listed are RoHS compliant.



Part Number	Agency Mark	Device Marking	Maximum Applied Voltage		Varistor Voltage @1mA DC V	Energy 2mS J	Maximum Clamping Voltage 8/20 μS		Peak Current A	Typical Capacitance pF	Dimensions(mm) ±1mm			
			AC RMS	DC			V	A			D-Max	T	W	d
Line Voltage Series - Radial Lead MOVs														
Figure 64														
Z130LA2	UL5	1302	130	170	205(185-225)	11	340	10	1200	250	9.0	4.2	5.0	0.6
Z130LA5	UL5	1305	130	170	205(185-225)	20	340	25	2500	500	13.5	4.6	7.5	0.8
Z130LA10A	UL5	Z130LA10A	130	170	205(185-225)	38	340	50	4500	1000	17.0	4.6	7.5	0.8
Z130LA20A	UL5	Z130LA20A	130	170	205(185-225)	70	340	100	6500	2000	23.0	5.0	10.0	1.0
Z140LA2	UL5	1402	140	180	220(198-242)	12	360	10	1200	250	9.0	4.3	5.0	0.6
Z140LA5	UL5	1405	140	180	220(198-242)	23	360	25	2500	450	13.5	4.7	7.5	0.8
Z140LA10A	UL5	Z140LA10A	140	180	220(198-242)	42	360	50	4500	1000	17.0	4.7	7.5	0.8
Z140LA20A	UL5	Z140LA20A	140	180	220(198-242)	75	360	100	6500	2000	23.0	5.2	10.0	1.0
Z150LA2	UL5	1502	150	200	240(216-264)	13	395	10	1200	200	9.0	4.4	5.0	0.6
Z150LA5	UL5	1505	150	200	240(216-264)	25	395	25	2500	400	13.5	4.8	7.5	0.8
Z150LA10A	UL5	Z150LA10A	150	200	240(216-264)	45	395	50	4500	900	17.0	4.8	7.5	0.8
Z150LA20A	UL5	Z150LA20A	150	200	240(216-264)	80	395	100	6500	1800	23.0	5.3	10.0	1.0
Z175LA2	UL5	1752	175	225	270(247-303)	15	455	10	1200	170	9.0	4.6	5.0	0.6
Z175LA5	UL5	1755	175	225	270(247-303)	30	455	25	2500	350	13.5	5.0	7.5	0.8
Z175LA10A	UL5	Z175LA10A	175	225	270(247-303)	55	455	50	4500	750	17.0	5.1	7.5	0.8
Z175LA20A	UL5	Z175LA20A	175	225	270(247-303)	90	455	100	6500	1600	23.0	5.4	10.0	1.0
Z210LA4	UL5	2104	210	275	330(297-363)	15	550	10	1200	140	9.0	4.8	5.0	0.6
Z210LA10	UL5	210L	210	275	330(297-363)	32	550	25	2500	300	13.5	5.2	7.5	0.8
Z210LA20A	UL5	Z210LA20A	210	275	330(297-363)	60	550	50	4500	650	17.0	5.3	7.5	0.8
Z210LA40A	UL5	Z210LA40A	210	275	330(297-363)	105	550	100	6500	1400	23.0	5.5	10.0	1.0
Z230LA4	UL5	2304	230	300	360(324-396)	15	595	10	1200	130	9.0	5.2	5.0	0.6
Z230LA10	UL5	230L	230	300	360(324-396)	35	595	25	2500	300	14.0	5.7	7.5	0.8
Z230LA20A	UL5	Z230LA20A	230	300	360(324-396)	65	595	50	4500	550	17.5	5.7	7.5	0.8
Z230LA40A	UL5	Z230LA40A	230	300	360(324-396)	120	595	100	6500	1200	24.0	6.1	10.0	1.0
Z250LA4	UL5	2504	250	330	390(351-429)	21	650	10	1200	130	9.0	5.4	5.0	0.6
Z250LA10	UL5	250L	250	330	390(351-429)	40	650	25	2500	270	14.0	5.8	7.5	0.8
Z250LA20A	UL5	Z250LA20A	250	330	390(351-429)	72	650	50	4500	500	17.5	5.8	7.5	0.8
Z250LA40A	UL5	Z250LA40A	250	330	390(351-429)	130	650	100	6500	1000	24.0	6.4	10.0	1.0
Z275LA4	UL5	2754	275	350	430(387-473)	23	710	10	1200	110	9.0	5.7	5.0	0.6
Z275LA10	UL5	275L	275	350	430(387-473)	45	710	25	2500	250	14.0	6.2	7.5	0.8
Z275LA20A	UL5	Z275LA20A	275	350	430(387-473)	75	710	50	4500	450	17.5	6.2	7.5	0.8
Z275LA40A	UL5	Z275LA40A	275	350	430(387-473)	140	710	100	6500	900	24.0	6.7	10.0	1.0
Z300LA4	UL5	3004	300	385	470(423-517)	25	775	10	1200	100	9.0	6.0	5.0	0.6
Z300LA10	UL5	300L	300	385	470(423-517)	45	775	25	2500	230	14.0	6.2	7.5	0.8
Z300LA20A	UL5	Z300LA20A	300	385	470(423-517)	80	775	50	4500	440	17.5	6.2	7.5	0.8
Z300LA40A	UL5	Z300LA40A	300	385	470(423-517)	150	775	100	6500	900	24.0	6.7	10.0	1.0
Z350LA10	UL5	350L	350	455	560(504-616)	45	925	25	2500	180	14.0	6.1	7.5	0.8
Z350LA20A	UL5	Z350LA20A	350	455	560(504-616)	80	925	50	4500	350	17.5	6.3	7.5	0.8
Z350LA40A	UL5	Z350LA40A	350	455	560(504-616)	150	925	100	6500	700	24.0	6.8	10.0	1.0
Z385LA10	UL5	385L	385	505	620(558-682)	45	1025	25	2500	130	14.0	6.2	7.5	0.8
Z385LA20A	UL5	Z385LA20A	385	505	620(558-682)	85	1025	50	4500	250	17.5	6.5	7.5	0.8
Z385LA40A	UL5	Z385LA40A	385	505	620(558-682)	150	1025	100	6500	500	24.0	6.9	10.0	1.0
Z420LA10	UL5	420L	420	560	680(612-748)	45	1120	25	2500	130	14.0	6.5	7.5	0.8
Z420LA20A	UL5	Z420LA20A	420	560	680(612-748)	90	1120	50	4500	250	17.5	6.5	7.5	0.8
Z420LA40A	UL5	Z420LA40A	420	560	680(612-748)	160	1120	100	6500	460	24.0	6.9	10.0	1.0
Z460LA10	UL5	460L	460	615	750(675-825)	50	1240	25	2500	120	14.0	6.8	7.5	0.8
Z460LA20A	UL5	Z460LA20A	460	615	750(675-825)	100	1240	50	4500	230	17.5	6.8	7.5	0.8
Z460LA40A	UL5	Z460LA40A	460	615	750(675-825)	175	1240	100	6500	420	24.0	7.3	10.0	1.0
Z480LA20	UL5	480L	480	640	780(702-858)	50	1290	25	2500	120	14.0	6.9	7.5	0.8
Z480LA40A	UL5	Z480LA40A	480	640	780(702-858)	105	1290	50	4500	230	17.5	6.9	7.5	0.8
Z480LA80A	UL5	Z480LA80A	480	640	780(702-858)	180	1290	100	6500	420	24.0	7.4	10.0	1.0
Z510LA20	UL5	510L	510	670	820(738-902)	55	1355	25	2500	105	14.0	7.1	7.5	0.8
Z510LA40A	UL5	Z510LA40A	510	670	820(738-902)	110	1355	50	4500	200	17.5	7.1	7.5	0.8
Z510LA80A	UL5	Z510LA80A	510	670	820(738-902)	190	1355	100	6500	400	24.0	7.6	10.0	1.0
Z550LA20	UL5	550L	550	700	910(819-1000)	60	1500	25	2500	95	14.0	7.6	7.5	0.8
Z550LA40A	UL5	Z550LA40A	550	700	910(819-1000)	120	1500	50	4500	180	17.5	7.6	7.5	0.8
Z550LA80A	UL5	Z550LA80A	550	700	910(819-1000)	220	1500	100	6500	350	24.0	8.1	10.0	1.0
Z575LA20	UL5	575L	575	745	920(819-1000)	60	1500	25	2500	95	14.0	7.6	7.5	0.8
Z575LA40A	UL5	Z575LA40A	575	745	920(819-1000)	120	1500	50	4500	180	17.5	7.6	7.5	0.8
Z575LA80A	UL5	Z575LA80A	575	745	920(819-1000)	220	1500	100	6500	350	24.0	8.1	10.0	1.0
Z600LA20	UL5	625L	625	825	1000(900-1100)	65	1650	25	2500	80	14.0	8.0	7.5	0.8
Z600LA50A	UL5	Z600LA50A	625	825	1000(900-1100)	130	1650	50	4500	150	17.5	8.0	7.5	0.8
Z600LA100A	UL5	Z600LA100A	625	825	1000(900-1100)	230	1650	100	6500	320	24.0	8.5	10.0	1.0
Z660LA20	UL5	660L	680	895	1100(990-1210)	70	1815	25	2500	80	14.0	8.5	7.5	0.8
Z660LA50A	UL5	Z660LA50A	680	895	1100(990-1210)	140	1815	50	4500	150	17.5	8.5	7.5	0.8
Z660LA100A	UL5	Z660LA100A	680	895	1100(990-1210)	250	1815	100	6500	300	24.0	9.0	10.0	1.0
Z1000LA80A	UL5	Z1000LA80A	1000	1465	1800(1620-1980)	240	2970	50	4500	100	17.5	12.0	15.0	0.8
Z1000LA160A	UL5	Z1000LA160A	1000	1465	1800(1620-1980)	400	2970	100	6500	200	25.0	12.0	15.0	1.0

Radial leaded MOVs having the Underwriters Laboratory Recognized Component Mark, conform to UL 1414, UL1449 edition 3, as listed on DTI UL file number E319342. Maximum Power Dissipation: 5 mm-0.1 watt; 7 mm-0.25 watt; 10 mm-0.4 watt; 14 mm-0.6 watt, 20 mm-1 watt.

Typical response time is less than 15 nanoseconds.

See page 57 for explanation of UL Surge Suppression Device Type Designations.

All devices listed are RoHS compliant.



Part Number	Agency Mark	Device Marking	Maximum Applied Voltage		Varistor Voltage @1mA DC V	Energy 2mS J	Maximum Clamping Voltage 8/20 μ S		Peak Current A	Typical Capacitance pF	Dimensions(mm)			
			AC _{RMS}	DC			V	A			D-Max	T ± 1 mm	W	d
High Energy Series - Radial Lead MOVs													Figure 64	
Z5L180H		H180	11	14	18 (14.4-21.6)	0.6	40	1	250	1600	7.5	4.4	5.0	0.6
Z5L220H		H220	14	18	22 (17.6-26.4)	0.7	48	1	250	1500	7.5	4.5	5.0	0.6
Z5L270H		H270	17	22	27 (24/30)	0.9	60	1	250	1450	7.5	4.6	5.0	0.6
Z5L330H		H330	20	26	33 (30-36)	1.1	73	1	250	1400	7.5	4.8	5.0	0.6
Z5L390H		H390	25	31	39 (35-43)	1.2	86	1	250	700	7.5	5.0	5.0	0.6
Z5L470H		H470	30	38	47 (42-52)	1.5	104	1	250	650	7.5	5.2	5.0	0.6
Z5L560H		H560	35	45	56 (50-62)	1.8	123	1	250	600	7.5	5.4	5.0	0.6
Z5L680H		H680	40	56	68 (61-75)	2.2	150	1	250	580	7.5	5.7	5.0	0.6
Z5L820H	RA4	H820	50	65	82 (74-90)	4.0	145	5	800	310	7.5	4.0	5.0	0.6
Z5L101H	RA4	H101	60	85	100 (90-110)	4.1	175	5	800	290	7.5	4.4	5.0	0.6
Z5L121H	RA4	H121	75	100	120 (108-132)	4.9	210	5	800	270	7.5	4.5	5.0	0.6
Z5L151H	RA4	H151	95	125	150 (135-165)	6.5	260	5	800	240	7.5	4.5	5.0	0.6
Z5L181H	RA4	H181	115	150	180 (162-198)	7.5	325	5	800	140	7.5	4.6	5.0	0.6
Z5L201H	RA4	H201	130	170	205 (185-225)	8.5	355	5	800	120	7.5	4.7	5.0	0.6
Z5L221H	RA4	H221	140	180	220 (198-242)	9.0	380	5	800	110	7.5	4.7	5.0	0.6
Z5L241H	RA4	H241	150	200	240 (216-264)	10.5	415	5	800	110	7.5	4.7	5.0	0.6
Z5L271H	RA4	H271	175	225	270 (247-303)	11.0	475	5	800	100	7.5	4.8	5.0	0.6
Z5L301H	RA4	H301	195	250	300 (270-330)	12.0	505	5	800	100	7.5	4.8	5.0	0.6
Z5L331H	RA4	H331	210	275	330 (297-363)	13.0	600	5	800	90	7.5	4.9	5.0	0.6
Z5L361H	RA4	H361	230	300	360 (324-396)	16.0	620	5	800	80	7.5	4.9	5.0	0.6
Z5L391H	RA4	H391	250	320	390 (351-429)	17.0	675	5	800	80	7.5	5.1	5.0	0.6
Z5L431H	RA4	H431	275	350	430 (387-473)	20.0	745	5	800	70	7.5	5.3	5.0	0.6
Z5L471H	RA4	H471	300	385	470 (423-517)	21.0	810	5	800	70	7.5	5.5	5.0	0.6
Z7L180H		7H180	11	14	18 (14.4-21.6)	1.3	36	2.5	500	3800	9.0	4.4	5.0	0.6
Z7L220H		7H220	14	18	22 (17.6-26.4)	2.1	43	2.5	500	3600	9.0	4.5	5.0	0.6
Z7L270H		7H270	17	22	27 (24-30)	2.5	53	2.5	500	3400	9.0	4.6	5.0	0.6
Z7L330H		7H330	20	26	33 (30-36)	3.0	65	2.5	500	2900	9.0	4.8	5.0	0.6
Z7L390H		7H390	25	31	39 (35-43)	4.0	77	2.5	500	1600	9.0	5.0	5.0	0.6
Z7L470H		7H470	30	38	47 (42-52)	5.0	93	2.5	500	1550	9.0	5.2	5.0	0.6
Z7L560H		7H560	35	45	56 (50-62)	5.4	110	2.5	500	1500	9.0	5.4	5.0	0.6
Z7L680H		7H680	40	56	68 (61-75)	6.1	135	2.5	500	1200	9.0	5.7	5.0	0.6
Z7L820H	RA4	7H820	50	65	82 (74-90)	7.0	135	10	1750	860	9.0	4.0	5.0	0.6
Z7L101H	RA4	7H101	60	85	100 (90-110)	7.5	165	10	1750	750	9.0	4.4	5.0	0.6
Z7L121H	RA4	7H121	75	100	120 (108-132)	9.0	200	10	1750	530	9.0	4.5	5.0	0.6
Z7L151H	RA4	7H151	95	125	150 (135-165)	11.0	250	10	1750	410	9.0	4.5	5.0	0.6
Z7L181H	RA4	7H181	115	150	180 (162-198)	13.0	300	10	1750	300	9.0	4.6	5.0	0.6
Z10L180H		10H180	11	14	18 (14.4-21.6)	3.0	36	5	1000	16000	14.0	4.8	7.5	0.8
Z10L220H		10H220	14	18	22 (17.6-26.4)	5.0	43	5	1000	11000	14.0	4.9	7.5	0.8
Z10L270H		10H270	17	22	27 (24-30)	6.0	53	5	1000	8000	14.0	5.0	7.5	0.8
Z10L330H		10H330	20	26	33 (30-36)	7.0	65	5	1000	6300	14.0	5.2	7.5	0.8
Z10L390H		10H390	25	31	39 (35-43)	9.0	77	5	1000	5200	14.0	5.4	7.5	0.8
Z10L470H		10H470	30	38	47 (42-52)	11.0	93	5	1000	4600	14.0	5.6	7.5	0.8
Z10L560H		10H560	35	45	56 (50-62)	13.0	110	5	1000	3750	14.0	5.8	7.5	0.8
Z10L680H		10H680	40	56	68 (61-75)	15.0	135	5	1000	2800	14.0	6.1	7.5	0.8
Z10L820H	RA4	10H820	50	65	82 (74-90)	17.0	135	25	3500	1920	14.0	4.4	7.5	0.8
Z10L101H	RA4	10H101	60	85	100 (90-110)	18.0	165	25	3500	1800	14.0	4.8	7.5	0.8
Z10L121H	RA4	10H121	75	100	120 (108-132)	21.0	200	25	3500	1500	14.0	4.9	7.5	0.8
Z10L151H	RA4	10H151	95	125	150 (135-165)	25.0	250	25	3500	1200	14.0	4.9	7.5	0.8
Z10L181H	RA4	10H181	115	150	180 (162-198)	30.0	300	25	3500	620	14.0	5.0	7.5	0.8
Z15L180H		15H180	11	14	18 (14.4-21.6)	7.0	36	10	2000	25000	17.5	4.8	7.5	0.8
Z15L220H		15H220	14	18	22 (17.6-26.4)	9.0	43	10	2000	20000	17.5	4.9	7.5	0.8
Z15L270H		15H270	17	22	27 (24-30)	11.0	53	10	2000	16000	17.5	5.0	7.5	0.8
Z15L330H		15H330	20	26	33 (30-36)	13.0	65	10	2000	12200	17.5	5.2	7.5	0.8
Z15L390H		15H390	25	31	39 (35-43)	15.0	77	10	2000	7000	17.5	5.4	7.5	0.8
Z15L470H		15H470	30	38	47 (42-52)	19.0	93	10	2000	6750	17.5	5.6	7.5	0.8
Z15L560H		15H560	35	45	56 (50-62)	22.0	110	10	2000	6500	17.5	5.8	7.5	0.8
Z15L680H		15H680	40	56	68 (61-75)	27.0	135	10	2000	5500	17.5	6.1	7.5	0.8
Z15L820H	RA4	15H820	50	65	82 (74-90)	31.0	135	50	6000	4300	17.5	4.4	7.5	0.8
Z15L101H	RA4	15H101	60	85	100 (90-110)	38.0	165	50	6000	3500	17.5	4.8	7.5	0.8
Z15L121H	RA4	15H121	75	100	120 (108-132)	47.0	200	50	6000	2500	17.5	4.9	7.5	0.8
Z15L151H	RA4	15H151	95	125	150 (135-165)	58.0	250	50	6000	2100	17.5	4.9	7.5	0.8
Z15L181H	RA4	15H181	115	150	180 (162-198)	71.0	300	50	6000	1250	17.5	5.0	7.5	0.8
Z21L180H		21H180	11	14	18 (14.4-21.6)	13.0	36	20	3000	40000	25.0	5.2	10.0	1.0
Z21L220H		21H220	14	18	22 (17.6-26.4)	16.0	43	20	3000	30000	25.0	5.3	10.0	1.0
Z21L270H		21H270	17	22	27 (24-30)	19.0	53	20	3000	24500	25.0	5.4	10.0	1.0
Z21L330H		21H330	20	26	33 (30-36)	24.0	65	20	3000	20000	25.0	5.6	10.0	1.0
Z21L390H		21H390	25	31	39 (35-43)	28.0	77	20	3000	13800	25.0	5.8	10.0	1.0
Z21L470H		21H470	30	38	47 (42-52)	34.0	93	20	3000	13500	25.0	6.0	10.0	1.0
Z21L560H		21H560	35	45	56 (50-62)	41.0	110	20	3000	12200	25.0	6.2	10.0	1.0
Z21L680H		21H680	40	56	68 (61-75)	49.0	135	20	3000	11500	25.0	6.5	10.0	1.0
Z21L820H	RA4	21H820	50	65	82 (74-90)	56.0	135	100	10000	8200	25.0	4.8	10.0	1.0
Z21L101H	RA4	21H101	60	85	100 (90-110)	70.0	165	100	10000	8000	25.0	5.2	10.0	1.0
Z21L121H	RA4	21H121	75	100	120 (108-132)	85.0	200	100	10000	5500	25.0	5.3	10.0	1.0
Z21L151H	RA4	21H151	95	125	150 (135-165)	106.0	250	100	10000	4200	25.0	5.3	10.0	1.0
Z21L181H	RA4	21H181	115	150	180 (162-198)	130.0	300	100	10000	2500	25.0	5.4	10.0	1.0

Radial leaded MOVs having the Underwriters Laboratory Recognized Component Mark, conform to UL 1414, UL1449 edition 3, as listed on DTI UL file number E319342. Maximum Power Dissipation: 5 mm-0.1 watt; 7 mm-0.25 watt; 10 mm-0.4 watt; 14 mm-0.6 watt, 20 mm-1 watt.

Typical response time is less than 15 nanoseconds. See page 57 for explanation of UL Surge Suppression Device Type Designations.

All devices listed are RoHS compliant.



Part Number	Agency Mark	Device Marking	Maximum Applied Voltage		Varistor Voltage @1mA DC V	Energy 2mS J	Maximum Clamping Voltage 8/20 μ S		Peak Current A	Typical Capacitance μ F	Dimensions(mm)			
			AC _{RMS}	DC			V	A			D-Max	T ± 1 mm	W	d
High Energy Series - Radial Lead MOVs												Figure 64		
Z130LA2H		1302H	130	170	205 (185-225)	17.0	340	10	1750	250	9.0	4.7	5.0	0.6
Z130LA5H		1305H	130	170	205 (185-225)	35.0	340	25	3500	570	14.0	5.1	7.5	0.8
Z130LA10AH		130H10A	130	170	205 (185-225)	69.0	340	50	6000	1150	17.5	5.1	7.5	0.8
Z130LA20AH		130H20A	130	170	205 (185-225)	140.0	340	100	10000	2300	25.0	5.5	10.0	1.0
Z130LA20BH		130H20B	130	170	200 (185-210)	140.0	325	100	10000	2300	25.0	5.5	10.0	1.0
Z140LA2H		1402H	140	180	220 (198-242)	19.0	360	10	1750	250	9.0	4.7	5.0	0.6
Z140LA5H		1405H	140	180	220 (198-242)	39.0	360	25	3500	560	14.0	5.1	7.5	0.8
Z140LA10AH		140H10A	140	180	220 (198-242)	77.0	360	50	6000	1100	17.5	5.1	7.5	0.8
Z140LA20AH		140H20A	140	180	220 (198-242)	155.0	360	100	10000	2200	25.0	5.5	10.0	1.0
Z140LA20BH		140H20B	140	180	220 (198-230)	155.0	345	100	10000	2200	25.0	5.5	10.0	1.0
Z150LA2H		1502H	150	200	240 (216-264)	21.0	395	10	1750	240	9.0	4.7	5.0	0.6
Z150LA5H		1505H	150	200	240 (216-264)	42.0	395	25	3500	550	14.0	5.1	7.5	0.8
Z150LA10AH		150H10A	150	200	240 (216-264)	83.0	395	50	6000	1050	17.5	5.1	7.5	0.8
Z150LA20AH		150H20A	150	200	240 (216-264)	168.0	395	100	10000	2200	25.0	5.5	10.0	1.0
Z150LA20BH		150H20B	150	200	240 (216-252)	168.0	375	100	10000	2200	25.0	5.5	10.0	1.0
Z175LA2H		1752H	175	225	270 (247-303)	24.0	455	10	1750	220	9.0	4.8	5.0	0.6
Z175LA5H		1755H	175	225	270 (247-303)	49.0	455	25	3500	530	14.0	5.2	7.5	0.8
Z175LA10AH		175H10A	175	225	270 (247-303)	94.0	455	50	6000	1000	17.5	5.2	7.5	0.8
Z175LA20AH		175H20A	175	225	270 (247-303)	190.0	455	100	10000	2100	25.0	5.6	10.0	1.0
Z175LA20BH		175H20B	175	225	270 (247-284)	190.0	435	100	10000	2100	25.0	5.6	10.0	1.0
Z200LA2H		2002H	195	250	300 (270-330)	26.0	500	10	1750	190	9.0	4.8	5.0	0.6
Z200LA5H		2005H	195	250	300 (270-330)	54.0	500	25	3500	500	14.0	5.2	7.5	0.8
Z200LA10AH		200H10A	195	250	300 (270-330)	103.0	500	50	6000	900	17.5	5.2	7.5	0.8
Z200LA20AH		200H20A	195	250	300 (270-330)	210.0	500	100	10000	1800	25.0	5.6	10.0	1.0
Z200LA20BH		200H20B	195	250	300 (270-315)	210.0	475	100	10000	1800	25.0	5.6	10.0	1.0
Z210LA4H		2104H	210	275	330 (297-363)	28.0	550	10	1750	170	9.0	4.9	5.0	0.6
Z210LA10H		210LH	210	275	330 (297-363)	58.0	550	25	3500	450	14.0	5.3	7.5	0.8
Z210LA20AH		210H20A	210	275	330 (297-363)	112.0	550	50	6000	850	17.5	5.3	7.5	0.8
Z210LA40AH		210H40A	210	275	330 (297-363)	228.0	550	100	10000	1750	25.0	5.7	10.0	1.0
Z210LA40BH		210H40B	210	275	330 (297-345)	228.0	525	100	10000	1750	25.0	5.7	10.0	1.0
Z230LA4H		2304H	230	300	360 (324-396)	32.0	595	10	1750	180	9.0	4.9	5.0	0.6
Z230LA10H		230H	230	300	360 (324-396)	65.0	595	25	3500	450	14.0	5.3	7.5	0.8
Z230LA20AH		230H20A	230	300	360 (324-386)	125.0	595	50	6000	850	17.5	5.3	7.5	0.8
Z230LA40AH		230H40A	230	300	360 (324-396)	255.0	595	100	10000	1700	25.0	5.7	10.0	1.0
Z230LA40BH		230H40B	230	300	360 (324-380)	255.0	565	100	10000	1700	25.0	5.7	10.0	1.0
Z250LA4H		2504H	250	320	390 (351-429)	35.0	650	10	1750	160	9.0	5.1	5.0	0.6
Z250LA10H		250H	250	320	390 (351-429)	70.0	650	25	3500	430	14.0	5.5	7.5	0.8
Z250LA20AH		250H20A	250	320	390 (351-429)	135.0	650	50	6000	800	17.5	5.5	7.5	0.8
Z250LA40AH		250H40A	250	320	390 (351-429)	275.0	650	100	10000	1400	25.0	5.9	10.0	1.0
Z250LA40BH		250H40B	250	320	390 (351-410)	275.0	620	100	10000	1400	25.0	5.9	10.0	1.0
Z275LA4H		2754H	275	350	430 (387-473)	40.0	710	10	1750	150	9.0	5.3	5.0	0.6
Z275LA10H		275H	275	350	430 (387-473)	80.0	710	25	3500	400	14.0	5.7	7.5	0.8
Z275LA20AH		275H20A	275	350	430 (387-473)	150.0	710	50	6000	650	17.5	5.7	7.5	0.8
Z275LA40AH		275H40A	275	350	430 (387-473)	305.0	710	100	10000	1350	25.0	6.1	10.0	1.0
Z275LA40BH		275H40B	275	350	430 (387-450)	305.0	675	100	10000	1350	25.0	6.1	10.0	1.0
Z300LA4H		3004H	300	385	470 (423-517)	42.0	775	10	1750	130	9.0	5.5	5.0	0.6
Z300LA10H		300H	300	385	470 (423-517)	85.0	775	25	3500	300	14.0	5.9	7.5	0.8
Z300LA20AH		300H20A	300	385	470 (423-517)	172.0	775	50	6000	550	17.5	5.9	7.5	0.8
Z300LA40AH		300H40A	300	385	470 (423-517)	350.0	775	100	10000	1200	25.0	6.3	10.0	1.0
Z300LA40BH		300H40B	300	385	470 (423-494)	350.0	735	100	10000	1200	25.0	6.3	10.0	1.0

Radial leaded MOVs having the Underwriters Laboratory Recognized Component Mark, conform to UL 1414, UL1449 edition 3, as listed on DTI UL file number E319342. Maximum Power Dissipation: 5 mm-0.1 watt; 7 mm-0.25 watt; 10 mm-0.4 watt; 14 mm-0.6 watt, 20 mm-1 watt.

Typical response time is less than 15 nanoseconds.

See page 57 for explanation of UL Surge Suppression Device Type Designations.

All devices listed are RoHS compliant.



Part Number	Agency Mark	Device Marking	Maximum Applied Voltage		Varistor Voltage @1mA DC V	Energy 2mS J	Maximum Clamping Voltage 8/20 μS		Peak Current A	Typical Capacitance pF	Dimensions(mm) ±1mm			
			AC _{RMS}	DC			V	A			D-Max	T	W	d
High Energy Series - Radial Lead MOVs											Figure 64			
Z320LA4H		3204H	320	410	510 (459-561)	32	845	10	1750	120	9.0	5.7	5.0	0.6
Z320LA10H		320H	320	410	510 (459-561)	67	845	25	3500	260	14.0	6.1	7.5	0.8
Z320LA20AH		320H20A	320	410	510 (459-561)	136	845	50	6000	450	17.5	6.1	7.5	0.8
Z320LA40AH		320H40A	320	410	510 (459-561)	273	845	100	10000	1050	25.0	6.5	10.0	1.0
Z320LA40BH		320H40B	320	410	510 (459-535)	273	805	100	10000	1050	25.0	6.5	10.0	1.0
Z350LA4H		3504H	350	460	560 (504-616)	32	915	10	1750	120	9.0	6.0	5.0	0.6
Z350LA10H		350H	350	460	560 (504-616)	67	915	25	3500	200	14.0	6.0	7.5	0.8
Z350LA20AH		350H20A	350	460	560 (504-616)	136	915	50	6000	400	14.0	6.4	7.5	0.8
Z350LA40AH		350H40A	350	460	560 (504-616)	273	915	100	10000	850	25.0	6.8	10.0	1.0
Z350LA40BH		350H40B	350	460	560 (504-590)	273	870	100	10000	850	25.0	6.8	10.0	1.0
Z385LA4H		3854H	385	505	620 (558-682)	32	1025	10	1750	120	9.0	6.3	5.0	0.6
Z385LA10H		385H	385	505	620 (558-682)	67	1025	25	3500	170	14.0	6.7	7.5	0.8
Z385LA20AH		385H20A	385	505	620 (558-682)	136	1025	50	6000	350	17.5	6.7	7.5	0.8
Z385LA40AH		385H40A	385	505	620 (558-682)	273	1025	100	10000	570	25.0	7.1	10.0	1.0
Z385LA40BH		385H40B	385	505	620 (558-650)	273	975	100	10000	570	25.0	7.1	10.0	1.0
Z420LA10H		420H	420	560	680 (612-748)	67	1120	25	3500	160	14.0	7.0	7.5	0.8
Z420LA20AH		420H20A	420	560	680 (612-748)	136	1120	50	6000	350	17.5	7.0	7.5	0.8
Z420LA40AH		420H40A	420	560	680 (612-748)	273	1120	100	10000	550	25.0	7.4	10.0	1.0
Z420LA40BH		420H40B	420	560	680 (612-715)	273	1065	100	10000	550	25.0	7.4	10.0	1.0
Z460LA10H		460H	460	615	750 (675-825)	70	1240	25	3500	150	14.0	7.4	7.5	0.8
Z460LA20AH		460H20A	460	615	750 (675-825)	150	1240	50	6000	330	17.5	7.4	7.5	0.8
Z460LA40AH		460H40A	460	615	750 (675-825)	300	1240	100	10000	530	25.0	7.8	10.0	1.0
Z460LA40BH		460H40B	460	615	750 (675-790)	300	1180	100	10000	530	25.0	7.8	10.0	1.0
Z480LA20H		480H	485	640	780 (702-858)	75	1290	25	3500	150	14.0	7.4	7.5	0.8
Z480LA40AH		480H40A	485	640	780 (702-858)	160	1290	50	6000	330	17.5	7.4	7.5	0.8
Z480LA80AH		480H80A	485	640	780 (702-858)	315	1290	100	10000	530	25.0	7.8	10.0	1.0
Z480LA80BH		480H80B	485	640	780 (702-820)	315	1225	100	10000	530	25.0	7.8	10.0	1.0
Z510LA20H		510H	510	670	820 (738-902)	80	1355	25	3500	150	14.0	7.8	7.5	0.8
Z510LA40AH		510H40A	510	670	820 (738-902)	165	1355	50	6000	330	17.5	7.8	7.5	0.8
Z510LA80AH		510H80A	510	670	820 (738-902)	325	1355	100	10000	530	25.0	8.2	10.0	1.0
Z510LA80BH		510H80B	510	670	820 (738-860)	325	1290	100	10000	530	25.0	8.2	10.0	1.0
Z550LA20H		550H	550	745	910 (819-1001)	90	1500	25	3500	140	14.0	8.2	7.5	0.8
Z550LA40AH		550H40A	550	745	910 (819-1001)	180	1500	50	6000	300	17.5	8.2	7.5	0.8
Z550LA80AH		550H80A	550	745	910 (819-1001)	360	1500	100	10000	480	25.0	8.6	10.0	1.0
Z550LA80BH		550H80B	550	745	910 (819-955)	360	1425	100	10000	480	25.0	8.6	10.0	1.0
Z600LA20H		625H	625	825	1000 (900-1100)	100	1650	25	3500	140	14.0	8.7	7.5	0.8
Z600LA50AH		600H50A	625	825	1000 (900-1100)	200	1650	50	6000	300	17.5	8.7	7.5	0.8
Z600LA100AH		600H100A	625	825	1000 (900-1100)	400	1650	100	10000	480	25.0	9.1	10.0	1.0
Z600LA100BH		600H100B	625	825	1000 (900-1050)	400	1570	100	10000	480	25.0	9.1	10.0	1.0
Z660LA20H		660H	680	895	1100 (990-1210)	110	1815	25	3500	130	14.0	9.2	7.5	0.8
Z660LA50AH		660H50A	680	895	1100 (990-1210)	220	1815	50	6000	200	17.5	9.2	7.5	0.8
Z660LA100AH		660H100A	680	895	1100 (990-1210)	440	1815	100	10000	400	25.0	9.6	10.0	1.0
Z660LA100BH		660H100B	680	895	1100 (990-1155)	440	1725	100	10000	400	25.0	9.6	10.0	1.0
Z1000LA20H		1000H	1000	1465	1800 (1620-1980)	183	2970	25	3500	70	14.0	9.2	7.5	0.8
Z1000LA80AH		1000H80A	1000	1465	1800 (1620-1980)	360	2970	50	6000	150	17.5	13.9	7.5	0.8
Z1000LA160AH		1000H160A	1000	1465	1800 (1620-1980)	720	2970	100	10000	250	25.0	14.3	10.0	1.0
Z1000LA160BH		1000H160B	1000	1465	1800(1620-1890)	720	2820	100	1000	250	25.0	14.3	10.0	1.0

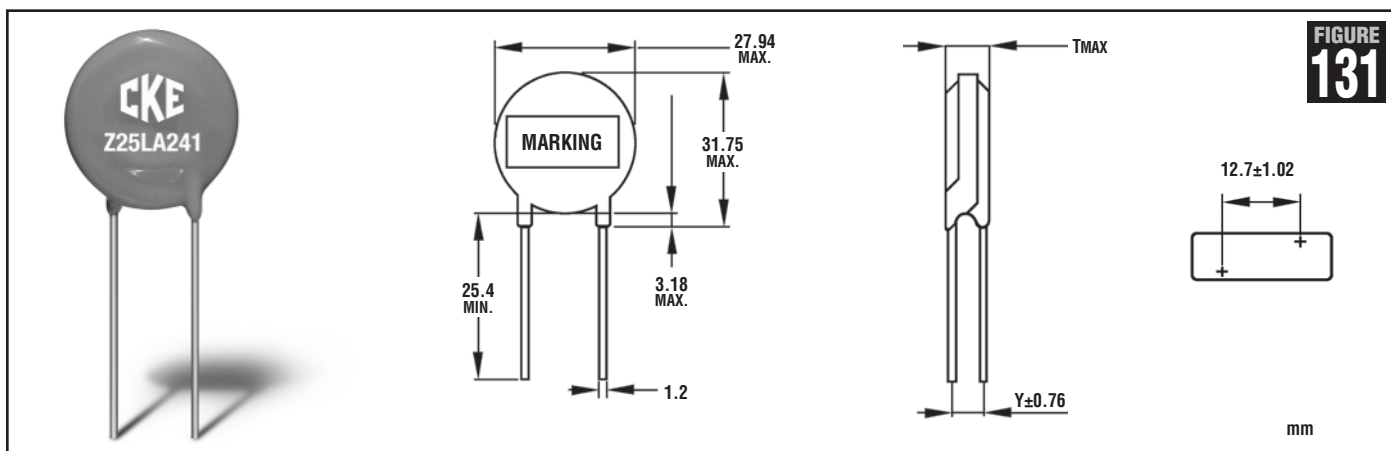
Radial leaded MOVs having the Underwriters Laboratory Recognized Component Mark, conform to UL 1414, UL1449 edition 3, as listed on DT1 UL file number E319342.

Maximum Power Dissipation: 5 mm-0.1 watt; 7 mm-0.25 watt; 10 mm-0.4 watt; 14 mm-0.6 watt, 20 mm-1 watt.

Typical response time is less than 15 nanoseconds.

See page 57 for explanation of UL Surge Suppression Device Type Designations.

All devices listed are RoHS compliant.



Part Number	Agency Mark	Maximum Applied Voltage		Varistor Voltage @ 1mA DC V	Maximum Energy Joules 2mS	Maximum Clamping Voltage 8/20uS		Peak Current I _P		Typical Capacitance @1kHz pf	Dimensions in mm		
		AC _{RMS} V	DC V			VC V	IP A	1 Time A	2 Times A		T	Y	Figure
Z25LA Series - MOVs													
Z25LA201	UL2	130	170	205(185-225)	140	340	150	20000	15000	3700	8.2	3.7	131
Z25LA221	UL2	140	180	220(198-242)	150	360	150	20000	15000	3400	8.2	3.7	131
Z25LA241	UL2	150	200	240(216-264)	160	395	150	20000	15000	3100	8.4	3.9	131
Z25LA271	UL2	175	225	270(243-297)	180	455	150	20000	15000	2600	8.5	4.2	131
Z25LA301	UL2	190	250	300(270-330)	200	500	150	20000	15000	2100	8.6	4.2	131
Z25LA331	UL2	210	275	330(297-363)	220	550	150	20000	15000	2200	8.7	4.3	131
Z25LA361	UL2	230	300	360(324-396)	240	595	150	20000	15000	2100	8.9	4.5	131
Z25LA391	UL2	250	320	390(351-429)	260	650	150	20000	15000	1900	9.1	4.7	131
Z25LA431	UL2	275	350	430(387-473)	280	710	150	20000	15000	1800	9.3	5	131
Z25LA471	UL2	300	385	470(423-517)	300	775	150	20000	15000	1600	9.5	5.2	131
Z25LA511	UL2	320	415	510(459-561)	300	845	150	20000	15000	1500	9.8	5.5	131
Z25LA561	UL2	350	460	560(504-616)	300	925	150	20000	15000	1300	10.1	5.8	131
Z25LA621	UL2	385	505	620(558-682)	300	1025	150	20000	15000	1200	10.4	6.2	131
Z25LA681	UL2	420	560	680(612-748)	320	1120	150	20000	15000	1100	10.8	6.6	131
Z25LA751	UL2	460	615	750(675-825)	350	1240	150	20000	15000	1000	11.2	6.8	131
Z25LA781	UL2	485	640	780(702-858)	360	1290	150	20000	15000	990	11.4	7	131
Z25LA821	UL2	510	670	820(738-902)	380	1355	150	20000	15000	930	11.6	7.6	131
Z25LA911	UL2	550	745	910(819-1001)	430	1500	150	20000	15000	860	12.1	7.8	131
Z25LA102	UL2	625	825	1000(900-1100)	460	1650	150	20000	15000	760	12.6	8.7	131
Z25LA112	UL2	680	895	1100(990-1210)	500	1815	150	20000	15000	690	13.1	9.3	131
Z25LA122	UL2	750	970	1200(1080-1320)	580	2000	150	20000	15000	620	14.2	10.4	131
Z25LA142	UL2	880	1150	1400(1260-1540)	645	2290	150	20000	15000	540	15.2	11.6	131
Z25LA162	UL2	900	1200	1600(1440-1760)	725	2550	150	20000	15000	470	16.3	12.8	131

Radial leaded MOVs having the Underwriters Laboratory Recognized Component Mark, conform to UL 1414, UL1449 edition 3, as listed on DTI UL file number E319342.

Maximum Power Dissipation: 1 watt.

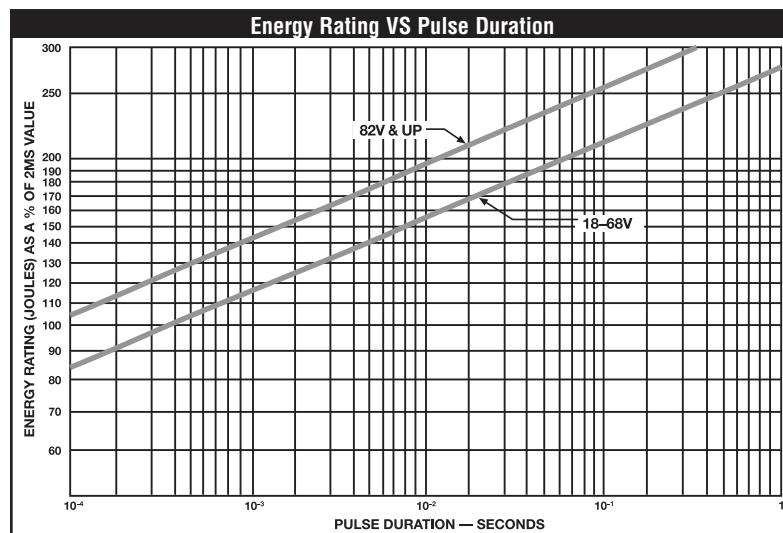
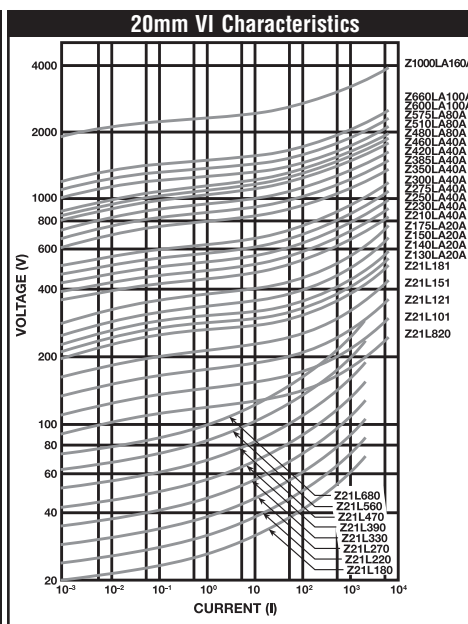
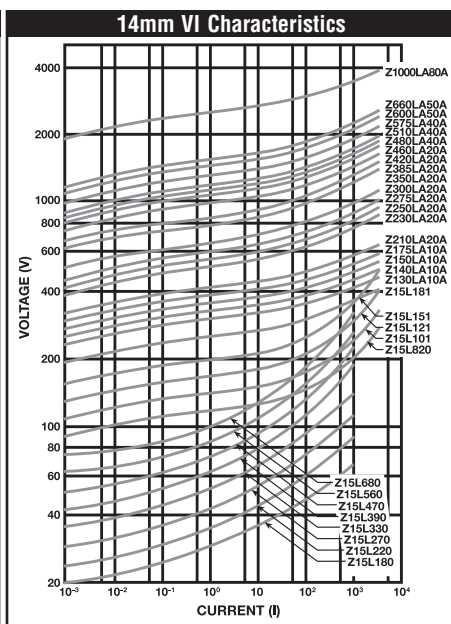
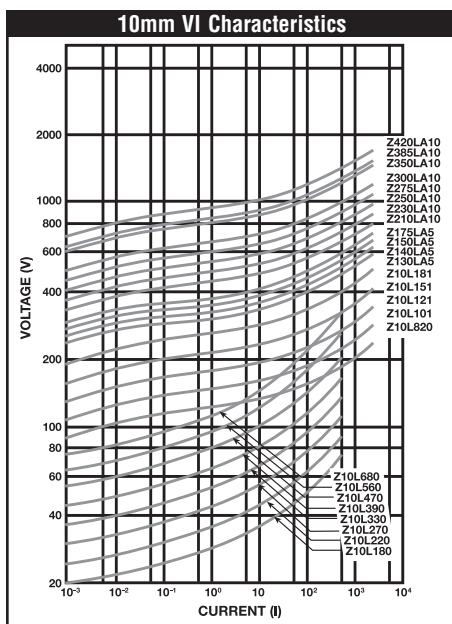
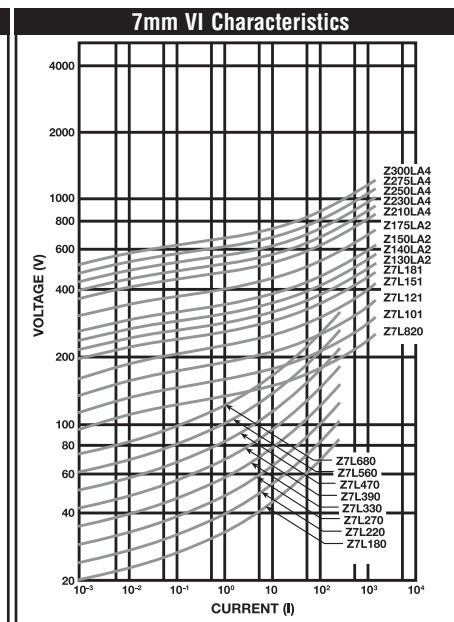
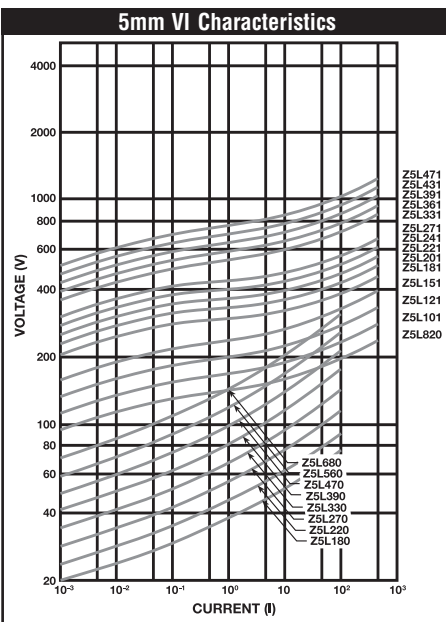
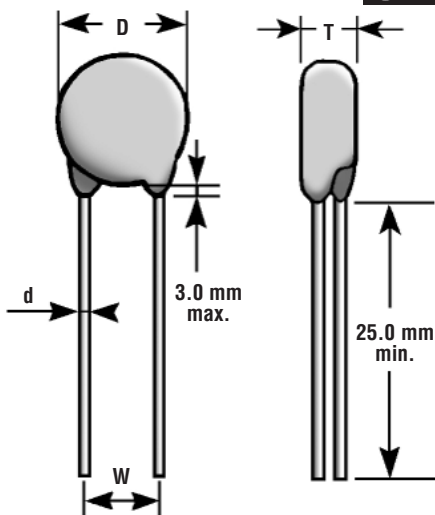
Typical response time is less than 15 nanoseconds.

See page 57 for explanation of UL Surge Suppression Device Type Designations.

All devices listed are RoHS compliant.

Radial Lead Series

FIGURE
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See website www.dean-technology.com
or contact factory for
additional information on
characteristic curves