



CH Surface Mount Varistor Series

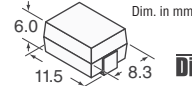


The CH series transient surge suppressors are small, metal-oxide varistors (MOV's) manufactured in leadless chip form. They are intended for use in a variety of applications from low voltage DC to off-line board-level protection. **Features:** • Leadless, Surface Mount Chip in 5 x 8mm size • No derating up to 125°C ambient

Maximum Continuous Working Voltage†		Varistor Voltage @ 1mA DC‡			Maximum Peak Current (8/20µs) (A)†	Max. Clamping Voltage @ Test Current (8/20µs)‡		Capacitance (pF)‡	Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape and Reel Pricing 1,000	Littelfuse Part No.
V(RMS)	VDC	Minimum	Nominal	Maximum		(V)	(A)			1	10	100			
14	18	18.7	22.0	26.0	100	47	5	1600	F3451CT-ND	1.21	1.11	.93	F3451TR-ND	464.76	V22CH8T
17	22	23.0	27.0	31.1	100	57	5	1300	F3452CT-ND	1.21	1.11	.93	F3452TR-ND	464.76	V27CH8T
20	26	29.5	33.0	36.5	100	68	5	750	F3453CT-ND	1.21	1.11	.93	F3453TR-ND	464.76	V33CH8T
25	31	35.0	39.0	43.0	100	79	5	700	F3454CT-ND	1.21	1.11	.93	F3454TR-ND	464.76	V39CH8T
30	38	42.0	47.0	52.0	100	92	5	650	F3455CT-ND	1.21	1.11	.93	F3455TR-ND	464.76	V47CH8T
35	45	50.0	56.0	62.0	100	107	5	600	F3456CT-ND	1.21	1.11	.93	F3456TR-ND	464.76	V56CH8T
40	56	61.0	68.0	75.0	100	127	10	500	F3457CT-ND	1.21	1.11	.93	F3457TR-ND	464.76	V68CH8T
75	102	108.0	120.0	132.0	250	200	10	300	F3460CT-ND	1.21	1.11	.93	F3460TR-ND	464.76	V120CH8T
95	127	135.0	150.0	165.0	250	250	10	250	F3458CT-ND	1.21	1.11	.93	F3458TR-ND	464.76	V150CH8T
115	153	162.0	180.0	198.0	250	295	10	120	F3459CT-ND	1.21	1.11	.93	F3459TR-ND	464.76	V180CH8T
130	175	184.0	200.0	228.0	250	340	10	110	F3461CT-ND	1.21	1.11	.93	F3461TR-ND	464.76	V200CH8T
140	180	198.0	220.0	242.0	250	360	10	105	F3462CT-ND	1.21	1.11	.93	F3462TR-ND	464.76	V220CH8T
150	200	212.0	240.0	268.0	250	395	10	100	F3463CT-ND	1.21	1.11	.93	F3463TR-ND	464.76	V240CH8T
230	300	324.0	360.0	396.0	250	595	10	70	F3464CT-ND	1.21	1.11	.93	F3464TR-ND	464.76	V360CH8T
250	330	354.0	390.0	429.0	250	650	10	60	F3465CT-ND	1.21	1.11	.93	F3465TR-ND	464.76	V390CH8T
275	369	389.0	430.0	473.0	250	710	10	50	F3466CT-ND	1.21	1.11	.93	F3466TR-ND	464.76	V430CH8T

§ V150-V430 CH Varistors are recognized under UL file #E75961. † Maximum ratings at 125°C ‡ Ratings at 25°C

SM7 Surface Mount Varistor Series



SM7 series is a plastic-encapsulated surface-mount metal oxide varistor (MOV) transient voltage surge suppressor that is designed to be operated continuously across AC power lines. Based on radial 7mm internal varistor element with similar characteristics to the Littelfuse LA / ZA series of varistors. **Features:** • AC voltage rating 275V to 510VAC rms • No de-rating up to 85°C ambient

Maximum Continuous Working Voltage†		Varistor Voltage @ 1mA DC‡		Maximum Peak Current (8/20µs) (A)†	Max. Clamping Voltage @ Test Current (8/20µs)‡		Capacitance (pF)‡	Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape and Reel Pricing 600	Littelfuse Part No.
V(RMS)	VDC	Minimum	Maximum		(V)	(A)			1	10	100			
275	369	389	473	1200	710	10	80	F3550CT-ND	1.92	1.77	1.49	F3550TR-ND	490.11	V275SM7
300	405	420	517	1200	775	10	70	F3551CT-ND	1.92	1.77	1.49	F3551TR-ND	490.11	V300SM7
320	420	462	565	1200	850	10	65	F3552CT-ND	1.92	1.77	1.49	F3552TR-ND	490.11	V320SM7
385	505	558	682	1200	1025	10	60	F3553CT-ND	2.12	1.95	1.64	F3553TR-ND	542.45	V385SM7
420	560	610	748	1200	1120	10	55	F3554CT-ND	2.12	1.95	1.64	F3554TR-ND	542.45	V420SM7
460	615	640	790	1200	1190	10	55	F3555CT-ND	2.35	2.17	1.83	F3555TR-ND	602.72	V460SM7
480	640	670	825	1200	1240	10	50	F3556CT-ND	2.35	2.17	1.83	F3556TR-ND	602.72	V480SM7
510	675	735	910	1200	1200	10	45	F3557CT-ND	2.65	2.44	2.05	F3557TR-ND	678.06	V510SM7

† Maximum ratings at 85°C ‡ Ratings at 25°C

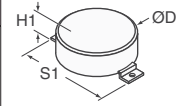
SM20 Surface Mount Varistor Series



The Littelfuse 20mm SMD series is a surface-mount metal oxide device, for use in applications requiring hi-energy / transient current capability. Based on radial 20mm internal varistor element with similar characteristics to the Littelfuse LA/LZ series of varistors. **Features:** • DC voltage rating 26VDC • AC voltage rating 175-320VAC

Maximum Continuous Working Voltage†		Varistor Voltage @ 1mA DC‡		Maximum Peak Current (8/20µs) (A)†	Max. Clamping Voltage @ Test Current (8/20µs)‡		Capacitance (pF)‡	Maximum Dimensions (mm)			Digi-Key Part No.	Cut Tape Price Each			Littelfuse Part No.
V(RMS)	VDC	Minimum	Maximum		(V)	(A)		H1	øD	S1		1	10	100	
20	26	32	40	2000	63	20	12000	10.5	26	35	F3543-ND	5.00	4.61	3.46	V26SM20
175	225	247	303	6500	455	100	1400	10.5	26	35	F3544-ND	2.96	2.73	2.05	V175SM20
230	300	324	396	6500	595	100	1100	10.5	26	35	F3545-ND	2.96	2.73	2.05	V230SM20
250	330	354	429	6500	650	100	1000	10.5	26	35	F3546-ND	2.96	2.73	2.05	V250SM20
275	369	389	473	6500	710	100	900	10.5	26	35	F3547-ND	2.96	2.73	2.05	V275SM20
300	405	420	517	6500	775	100	800	10.5	26	35	F3548-ND	4.03	3.72	2.79	V300SM20
320	420	462	540	6500	810	100	750	10.5	26	35	F3549-ND	4.03	3.72	2.79	V320SM20

† Maximum ratings at 85°C ‡ Ratings at 25°C



Varistors (MOV's) Radial Leaded — C-III, LA, ZA and UltraMOV™ Series

Dim. in mm

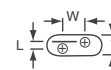
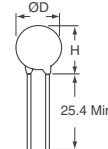


The **C-III Series** and **LA Series** of transient voltage surge suppressors are radial leaded varistors (MOV's) that are designed to be operated continuously across AC power lines. These UL recognized varistors require very little mounting space.

The **ZA Series** of transient voltage surge suppressors are radial leaded varistors (MOV's) designed for use in the protection of low and medium voltage circuits and systems. *These devices are not UL, CSA, VDE or CECC certified.*

The **UltraMOV Series** are designed for applications requiring high peak surge current ratings and high energy absorption capability. The varistors are primarily intended for use in AC line voltage applications or other products that require voltage clamping of high transient surge currents from sources such as lightning, inductive load switching, or capacitor bank switching.

Features: (LA and ZA Series) • Lead Material: Tin-Coated Copper wire • Insulating Material: Cured, flame retardant red epoxy polymer meets UL94V-0 requirements • Device Labeling: Marked with LF, voltage, UL/CSA logos, and date code
Specifications: • Temperature Coefficient of Clamping Voltage at Specified Test Current: <0.01 %/°C • Hi-Pot Encapsulation Coating Isolation Voltage Capability, (Dielectric must withstand indicated DC voltage for one minute per MIL-STD-202, Method 301): 2,500V, (C-III Series 5,000V) • Operating Ambient Temperature Range: -55°C - 85°C • Coating Insulation Resistance: 1,000MΩ
Note: See data sheet for detailed Agency Approvals.



LA Series

Disc Diameter (mm)	Maximum Continuous Working Voltage†		Varistor Voltage @ 1mA DC‡		Maximum Clamping Voltage (8x20µs)‡		Peak Current (8x20µs) I ^{PM} (A)†	Maximum Dimensions (mm)					Digi-Key Part No.	Pricing			Littelfuse Part No.
	V(RMS)	VDC	Minimum	Maximum	Vc (V)	Ip (A)		H	øD	W	L	T		1	10	100	
7	130	175	184	255	390	10	1200	12	9	6	3.5	5.6	F3001-ND	23	2.13	15.99	V130LA1P
	140	180	198	242	360	10	1200	12	9	6	3.5	5.6	F3002-ND	23	2.13	15.99	V140LA2P
	150	200	212	284	430	10	1200	12	9	6	3.5	5.6	F3004-ND	23	2.13	15.99	V150LA1P
	150	200	212	268	395	10	1200	12	9	6	3.5	5.6	F3005-ND	23	2.13	15.99	V150LA2P
	250	330	354	473	730	10	1200	12	9	6	3.5	5.6	F3006-ND	23	2.13	15.99	V250LA2P
	250	330	354	429	650	10	1200	12	9	6	3.5	5.6	F3007-ND	23	2.13	15.99	V250LA4P
	275	369	389	515	775	10	1200	12	9	6	3.5	5.6	F3008-ND	23	2.13	15.99	V275LA2P
	275	369	389	473	710	10	1200	12	9	6	3.5	5.6	F3009-ND	23	2.13	15.99	V275LA4P
	300	405	420	517	775	10	1200	12	9	6	3.5	5.6	F3010-ND	23	2.13	15.99	V300LA4P
	10	130	175	184	228	340	25	2500	16	12.5	8.5	3.5	5.6	F3011-ND	.32	2.95	22.12
150		200	212	268	395	25	2500	16	12.5	8.5	3.5	5.6	F3012-ND	.32	2.95	22.12	V150LA5P
250		330	354	429	650	25	2500	16	12.5	8.5	3.5	5.6	F3013-ND	.32	2.95	22.12	V250LA10P
275		369	389	473	710	25	2500	16	12.5	8.5	3.5	5.6	F3014-ND	.32	2.95	22.12	V275LA10P
420		560	610	748	1120	25	2500	16	12.5	8.5	3.5	5.6	F3016-ND	.32	2.95	22.12	V420LA10P
14	130	175	184	228	340	50	4500	20	17	8.5	3.5	5.6	F3015-ND	40	3.74	28.07	V130LA10AP
	140	180	198	242	360	50	4500	20	17	8.5	3.5	5.6	F3016-ND	40	3.74	28.07	V140LA10AP

Note: Average power dissipation of transients not to exceed 0.25W, 0.4W, 0.6W or 1W † Maximum ratings at 85°C ‡ Ratings at 25°C

(Continued)

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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