Technical Data
Data Sheet N0069 Rev. D

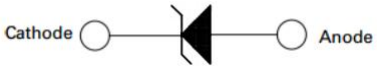
5.0 SMLJ SERIES
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

SMC

Features

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Repetition rate (duty cycle):0.01%
- Fast response time: typically less than 1.0 ps from 0 volts to BV for unidirectional types
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- High temperature soldering: 260˚C/40 seconds at terminals

Circuit Diagram



Unipolar

Bipolar

Mechanical Data

- Case: SMC Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Color band denoted positive end (cathode) except Bidirectional

Maximum Ratings and Thermal Characteristics@T_A=25˚C unless otherwise specified

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us waveform (NOTE 1, 2, Fig.1)	P_{PPM}	5000	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Unidirectional Device only (Note 2),(Note 3)	I_{FSM}	300	A
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	15	˚C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	75	˚C/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 150	˚C

Notes: 1. Non-repetitive current pulse , per Fig. 3 and derated above T_L= 25˚C per Fig. 2.
2. Mounted on 8.0x8.0mm Copper Pads to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

Technical Data
Data Sheet N0069 Rev. D

RoHS

Electrical Characteristics@T_A=25°C unless otherwise specified

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		REVERSE STAND-OFF VOLTAGE V_{RWM} (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @I_T	BREAKDOWN VOLTAGE VBR (V) MAX. @I_T	TEST CURRENT IT(MA)	MAXMUM CLAMPING VOLTAGE @I_{PP} V_C(V)	PEAK PULSE CURRENT I_{PP}(A)	REVERSE LEAKAGE @V_{RWM} I_R(uA)	
		UNI	BI							T_J= 25°C	T_J= 150°C
5.0SMLJ12A	5.0SMLJ12CA	5PEP	5BEP	12	13.3	14.7	1	19.9	252	100	300
5.0SMLJ13A	5.0SMLJ13CA	5PEQ	5BEQ	13	14.4	15.9	1	21.5	233	80	300
5.0SMLJ14A	5.0SMLJ14CA	5PER	5BER	14	15.6	17.2	1	23.2	216	50	300
5.0SMLJ15A	5.0SMLJ15CA	5PES	5BES	15	16.7	18.5	1	24.4	205	20	300
5.0SMLJ16A	5.0SMLJ16CA	5PET	5BET	16	17.8	19.7	1	26	193	10	300
5.0SMLJ17A	5.0SMLJ17CA	5PEU	5BEU	17	18.9	20.9	1	27.6	181	5	50
5.0SMLJ18A	5.0SMLJ18CA	5PEV	5BEV	18	20	22.1	1	29.2	172	5	50
5.0SMLJ20A	5.0SMLJ20CA	5PEW	5BEW	20	22.2	24.5	1	32.4	155	5	50
5.0SMLJ22A	5.0SMLJ22CA	5PEX	5BEX	22	24.4	26.9	1	35.5	141	2	50
5.0SMLJ24A	5.0SMLJ24CA	5PEZ	5BEZ	24	26.7	29.5	1	38.9	129	2	50
5.0SMLJ26A	5.0SMLJ26CA	5PFE	5BFE	26	28.9	31.9	1	42.1	119	2	50
5.0SMLJ28A	5.0SMLJ28CA	5PFG	5BFG	28	31.1	34.4	1	45.4	110	2	50
5.0SMLJ30A	5.0SMLJ30CA	5PFK	5BFK	30	33.3	36.8	1	48.4	103	2	50
5.0SMLJ33A	5.0SMLJ33CA	5PFM	5BFM	33	36.7	40.6	1	53.3	93.9	2	50
5.0SMLJ36A	5.0SMLJ36CA	5PFP	5BFP	36	40	44.2	1	58.1	86.1	2	50
5.0SMLJ40A	5.0SMLJ40CA	5PFR	5BFR	40	44.4	49.1	1	64.5	77.6	2	50
5.0SMLJ43A	5.0SMLJ43CA	5PFT	5BFT	43	47.8	52.8	1	69.4	72.1	2	50
5.0SMLJ45A	5.0SMLJ45CA	5PFV	5BFV	45	50	55.3	1	72.7	68.8	2	50
5.0SMLJ48A		5PFX		48	53.3	58.9	1	77.4	64.7	2	50
5.0SMLJ51A		5PFZ		51	56.7	62.7	1	82.4	60.7	2	50
5.0SMLJ54A		5PGE		54	60	66.3	1	87.1	57.5	2	50
5.0SMLJ58A		5PGG		58	64.4	71.2	1	93.6	53.5	2	50
5.0SMLJ60A		5PGK		60	66.7	73.7	1	96.8	51.7	2	50
5.0SMLJ64A		5PGM		64	71.1	78.6	1	103	48.6	2	50
5.0SMLJ70A		5PGP		70	77.8	86	1	113	44.3	2	50
5.0SMLJ75A		5PGR		75	83.3	92.1	1	121	41.4	2	50
5.0SMLJ78A		5PGT		78	86.7	95.8	1	126	39.7	2	50
5.0SMLJ85A		5PGV		85	94.4	104	1	137	36.5	2	50
5.0SMLJ90A		5PGX		90	100	111	1	146	34.3	2	50
5.0SMLJ100A		5PGZ		100	111	123	1	162	30.9	2	50
5.0SMLJ110A		5PHE		110	122	135	1	177	28.3	2	50
5.0SMLJ120A		5PHG		120	133	147	1	193	26	2	50
5.0SMLJ130A		5PHK		130	144	159	1	209	24	2	50
5.0SMLJ150A		5PHM		150	167	185	1	243	20.6	2	50
5.0SMLJ160A		5PHP		160	178	197	1	259	19.3	2	50
5.0SMLJ170A		5PHR		170	189	209	1	275	18.2	2	50

For bidirectional type having VRWM of 20 volts and less, the IR limit is double.
For parts without A, The VBR is + 10%.

Technical Data
Data Sheet N0069 Rev. D

Ratings and Characteristics Curves

Fig. 1 - Peak Pulse Power Rating Curve

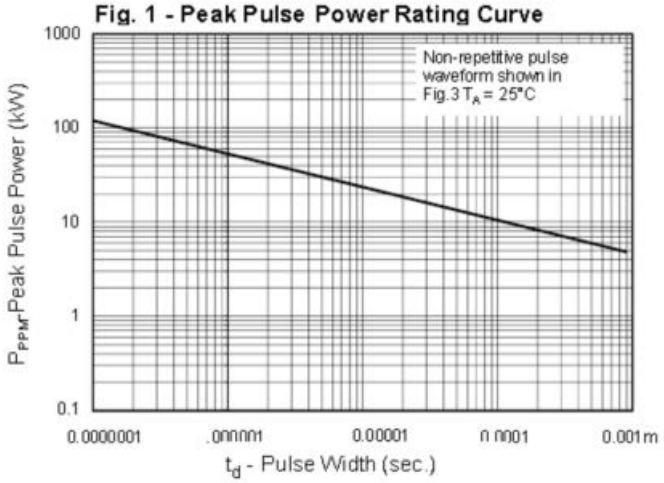


Fig.2 - Pulse Derating Curve

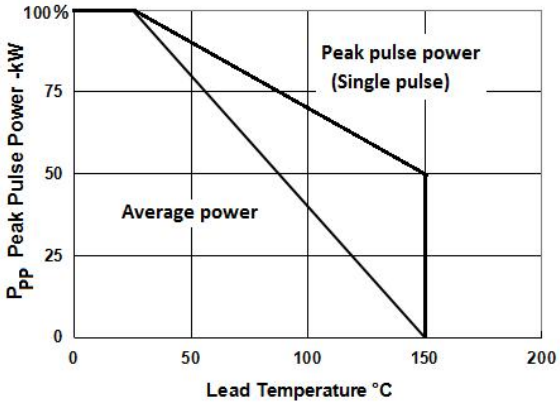


Fig.3 - Pulse Waveform

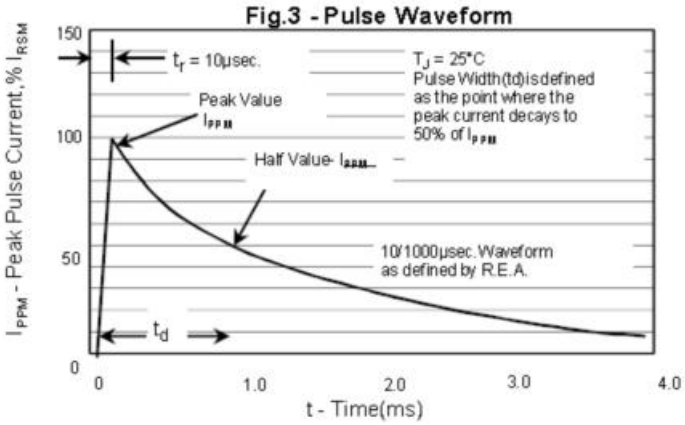


Fig. 4 - Typical Junction Capacitance

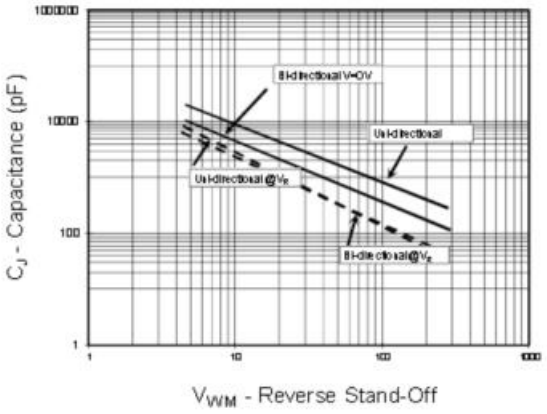


Fig. 5 - Steady State Power Derating Curve

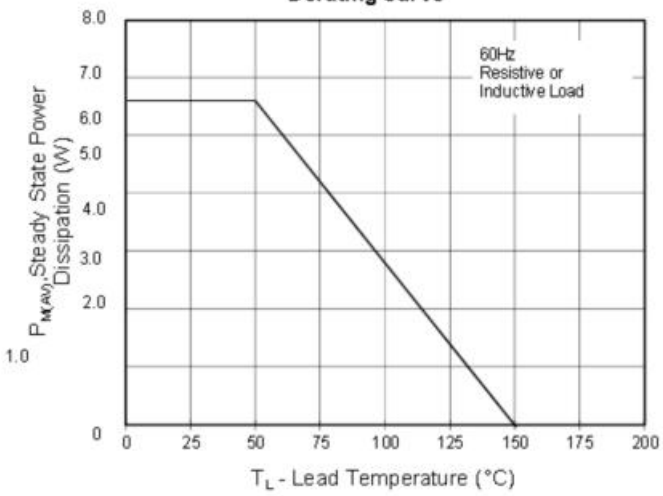
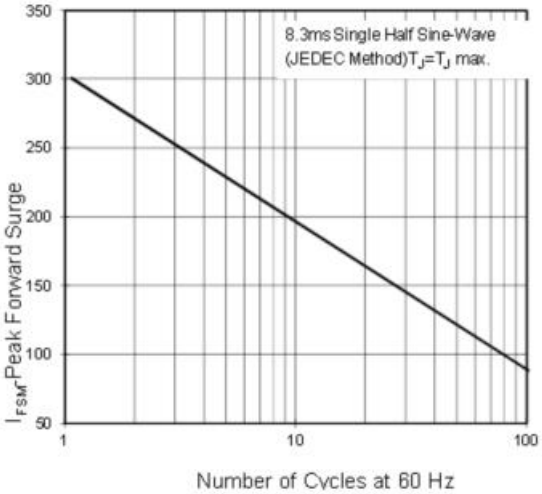


Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



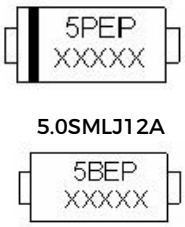
Technical Data
Data Sheet N0069 Rev. D

Ordering Information

Device	Package	Shipping
5.0SMLJ12A THRU 5.0SMLJ170A	SMC (Pb-Free)	3000pcs / reel
5.0SMLJ12ATR THRU 5.0SMLJ170ATR	SMC (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram

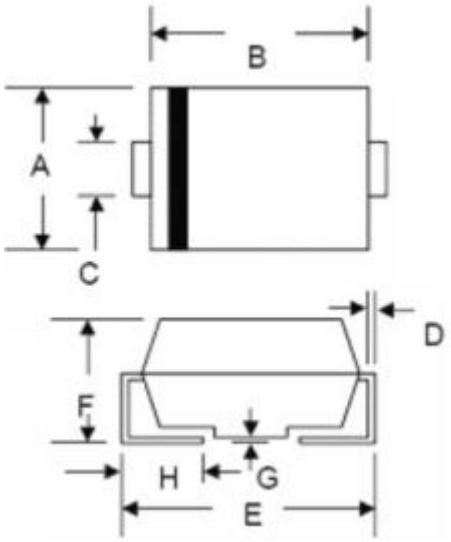


Where XXXXX is YYWWL

5PEP/5BEP = Marking code
YY = Year
WW = Week
L = Lot Number

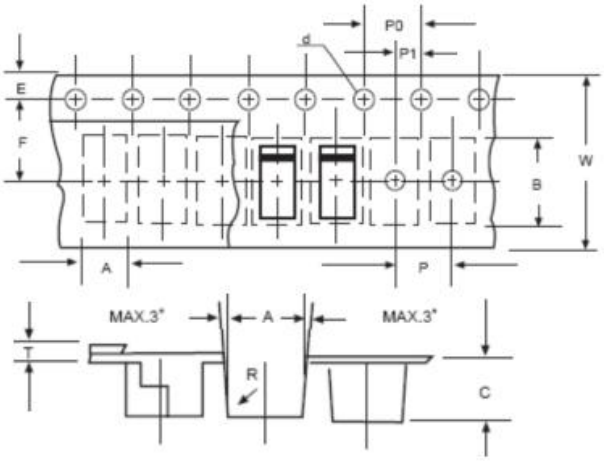
Cautions: Molding resin
Epoxy resin UL:94V-0

Mechanical Dimensions SMC



	SMC/DO-214AB			
Dim.	Min.	Max.	Min.	Max.
A	5.59	6.22	0.220	0.245
B	6.60	7.11	0.260	0.280
C	2.90	3.20	0.114	0.126
D	0.152	0.305	0.006	0.012
E	7.75	8.13	0.305	0.320
F	2.00	2.62	0.079	0.103
G	-	0.203	-	0.008
H	0.76	1.52	0.030	0.060
	In Millimeters		In inches	

Carrier Tape Specification SMC



SYMBOL	Millimeters	
	Min.	Max.
A	5.90	6.10
B	8.20	8.40
C	2.40	2.60
d	1.40	1.60
E	1.40	1.60
F	7.60	7.70
P	7.90	8.10
P0	3.90	4.10
P1	3.90	4.10
T	-	0.600
W	15.80	16.20

Technical Data
Data Sheet N0069 Rev. D

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