Technical Data
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3.0SMI SERIES
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

SMC

Features

- Glass Passivated Die Construction
- 3000W Peak Pulse Power Dissipation
- 5.0V- 170V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- "-A" suffix is for Automotive qualified
- This is a Pb – Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

Circuit Diagram

Unipolar

Bipolar

Mechanical Data

- Case: SMC Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Weight:0.21 grams(approx.)

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

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000us waveform (NOTE 1, 2, Fig.1)	P_{PPM}	3000	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (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_A = 25˚C per Fig. 2.
2. Mounted on 8.0mm² copper pads to each terminal
3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

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RoHS

Electrial 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							
3.0SMI5.0A	3.0SMI5.0CA	HDE	IDE	5	6.4	7	10	9.2	326.1	2000
3.0SMI6.0A	3.0SMI6.0CA	HDG	IDG	6	6.67	7.37	10	10.3	291.3	2000
3.0SMI6.5A	3.0SMI6.5CA	HDK	IDK	6.5	7.22	7.98	10	11.2	267.9	1000
3.0SMI7.0A	3.0SMI7.0CA	HDM	IDM	7	7.78	8.6	10	12	250	400
3.0SMI7.5A	3.0SMI7.5CA	HDP	IDP	7.5	8.33	9.21	1	12.9	232.6	200
3.0SMI8.0A	3.0SMI8.0CA	HDR	IDR	8	8.89	9.83	1	13.6	220.6	100
3.0SMI8.5A	3.0SMI8.5CA	HDT	IDT	8.5	9.44	10.4	1	14.4	208.3	50
3.0SMI9.0A	3.0SMI9.0CA	HDV	IDV	9	10	11.1	1	15.4	194.8	20
3.0SMI10A	3.0SMI10CA	HDX	IDX	10	11.1	12.3	1	17	176.5	5
3.0SMI11A	3.0SMI11CA	HDZ	IDZ	11	12.2	13.5	1	18.2	164.8	5
3.0SMI12A	3.0SMI12CA	HEE	IEE	12	13.3	14.7	1	19.9	150.8	5
3.0SMI13A	3.0SMI13CA	HEG	IEG	13	14.4	15.9	1	21.5	139.5	5
3.0SMI14A	3.0SMI14CA	HEK	IEK	14	15.6	17.2	1	23.2	129.3	5
3.0SMI15A	3.0SMI15CA	HEM	IEM	15	16.7	18.5	1	24.4	123	5
3.0SMI16A	3.0SMI16CA	HEP	IEP	16	17.8	19.7	1	26	115.4	5
3.0SMI17A	3.0SMI17CA	HER	IER	17	18.9	20.9	1	27.6	108.7	5
3.0SMI18A	3.0SMI18CA	HET	IET	18	20	22.1	1	29.2	102.7	5
3.0SMI20A	3.0SMI20CA	HEV	IEV	20	22.2	24.5	1	32.4	92.6	5
3.0SMI22A	3.0SMI22CA	HEX	IEX	22	24.4	26.9	1	35.5	84.5	5
3.0SMI24A	3.0SMI24CA	HEZ	IEZ	24	26.7	29.5	1	38.9	77.1	5
3.0SMI26A	3.0SMI26CA	HFE	IFE	26	28.9	31.9	1	42.1	71.3	5
3.0SMI28A	3.0SMI28CA	HFG	IFG	28	31.1	34.4	1	45.4	66.1	5
3.0SMI30A	3.0SMI30CA	HFK	IFK	30	33.3	36.8	1	48.4	62	5
3.0SMI33A	3.0SMI33CA	HFM	IFM	33	36.7	40.6	1	53.3	56.3	5
3.0SMI36A	3.0SMI36CA	HFP	IFP	36	40	44.2	1	58.1	51.6	5
3.0SMI40A	3.0SMI40CA	HFR	IFR	40	44.4	49.1	1	64.5	46.5	5
3.0SMI43A	3.0SMI43CA	HFT	IFT	43	47.8	52.8	1	69.4	43.2	5
3.0SMI45A	3.0SMI45CA	HFV	IFV	45	50	55.3	1	72.7	41.3	5
3.0SMI48A	3.0SMI48CA	HFX	IFX	48	53.3	58.9	1	77.4	38.8	5
3.0SMI51A	3.0SMI51CA	HFZ	IFZ	51	56.7	62.7	1	82.4	36.4	5

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		UNI	BI							
3.0SMI54A	3.0SMI54CA	HGE	IGE	54	60	66.3	1	87.1	34.4	5
3.0SMI58A	3.0SMI58CA	HGG	IGG	58	64.4	71.2	1	93.6	32.1	5
3.0SMI60A	3.0SMI60CA	HGK	IGK	60	66.7	73.7	1	96.8	31	5
3.0SMI64A	3.0SMI64CA	HGM	IGM	64	71.1	78.6	1	103	29.1	5
3.0SMI70A	3.0SMI70CA	HGP	IGP	70	77.8	86	1	113	26.5	5
3.0SMI75A	3.0SMI75CA	HGR	IGR	75	83.3	92.1	1	121	24.8	5
3.0SMI78A	3.0SMI78CA	HGT	IGT	78	86.7	95.8	1	126	23.8	5
3.0SMI85A	3.0SMI85CA	HGV	IGV	85	94.4	104	1	137	21.9	5
3.0SMI90A	3.0SMI90CA	HGX	IGX	90	100	111	1	146	20.5	5
3.0SMI100A	3.0SMI100CA	HGZ	IGZ	100	111	123	1	162	18.5	5
3.0SMI110A	3.0SMI110CA	HHE	IHE	110	122	135	1	177	16.9	5
3.0SMI120A	3.0SMI120CA	HHG	IHG	120	133	147	1	193	15.5	5
3.0SMI130A	3.0SMI130CA	HHK	IHK	130	144	159	1	209	14.4	5
3.0SMI150A	3.0SMI150CA	HHM	IHM	150	167	185	1	243	12.3	5
3.0SMI160A	3.0SMI160CA	HHP	IHP	160	178	197	1	259	11.6	5
3.0SMI170A	3.0SMI170CA	HHR	IHR	170	189	209	1	275	10.9	5

For bidirectional type having V_{RWM} of 10 volts and less, the IR limit is double.
For parts without A , the VBR is ± 10%

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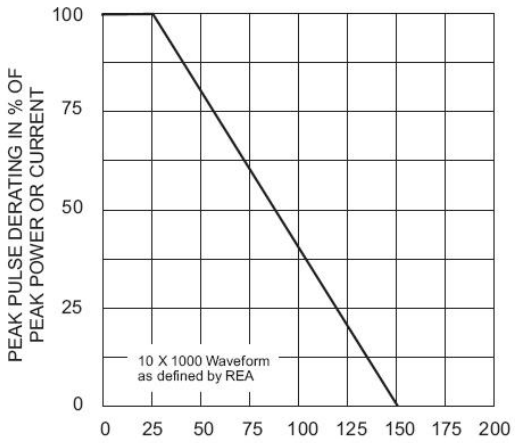
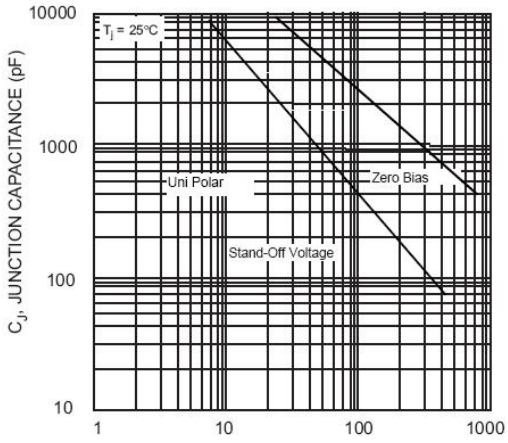
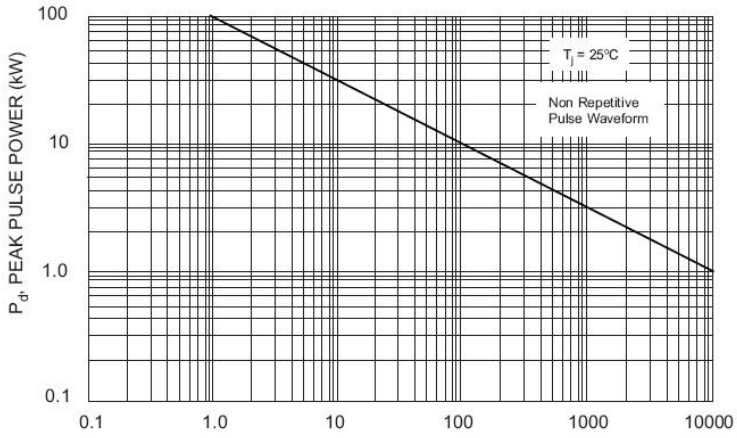
Ratings and Characteristics Curves



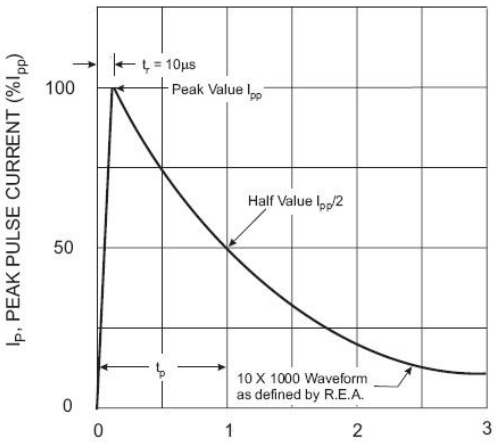
T_A, AMBIENT TEMPERATURE (°C)
Fig. 1 Pulse Derating Curve



V_{WM}, STANDOFF VOLTAGE (V)
Fig. 2 Typical Junction Capacitance



t_p PULSE WIDTH (µs)
Fig. 3 Pulse Rating Curve



t, TIME (ms)
Fig. 4 Pulse Waveform

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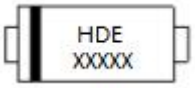
Ordering Information

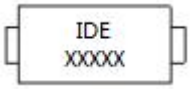
Device	Package	Plating	Shipping
3.0SMI5.0A THRU 3.0SMI170A	SMC (Pb-Free)	Pure Sn	3000pcs / reel
3.0SMI5.0ATR THRU 3.0SMI170ATR	SMC (Pb-Free)	Pure Sn	3000pcs / reel

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

Marking Diagram



3.0SMI5.0A



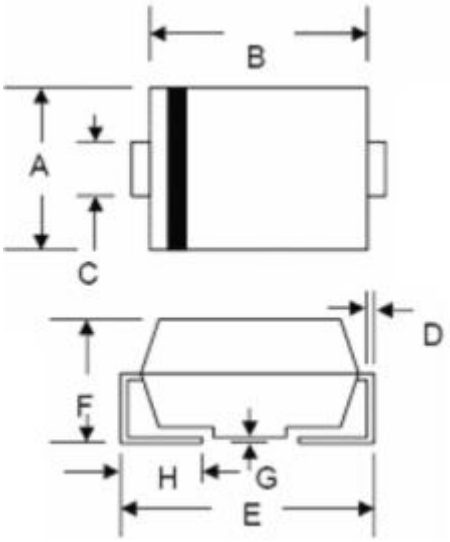
3.0SMI5.0CA

Where XXXXX is YYWWL

HDE/IDE = Marking code
YY = Year
WW = Week
L = Lot Number

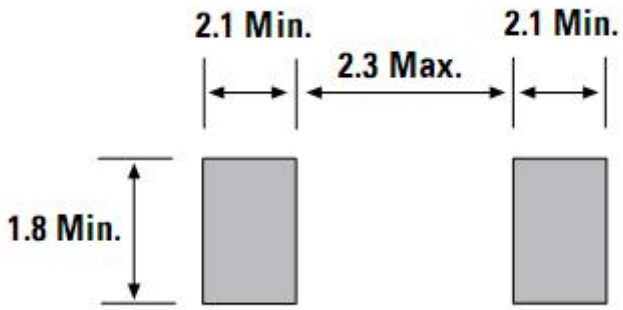
Autions: Molding resin
Epoxy resin UL:94V-0

Mechanical Dimensions SMC



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.59	6.22	0.220	0.245
B	6.60	7.11	0.260	0.280
C	2.75	3.25	0.108	0.128
D	0.152	0.305	0.006	0.012
E	7.75	8.25	0.305	0.325
F	2.00	2.95	0.079	0.116
G	0.051	0.203	0.002	0.008
H	0.76	1.60	0.030	0.063

Soldering Pad Layout (Millimeters)



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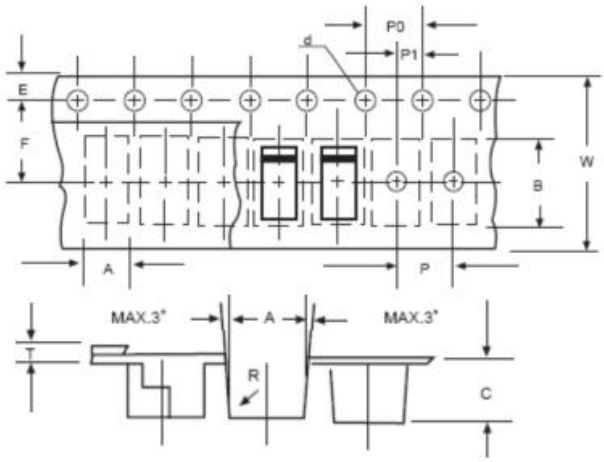
Carrier Tape Specification SMC



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