Technical Data
Data Sheet N1959 Rev. -

5.0SMHJ10A THRU 5.0SMHJ43A
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

SMC

Features

- For surface mounted applications in order to optimize board space
- T_J=185°C, diodes are suitable for high temperature applications
- 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

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)

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 (Note 2),(Note 3)	I_{FSM}	300	A
Typical Thermal Resistance Junction to Mount	$R_{\theta JM}$	20.8	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100	°C/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-65 to 185	°C

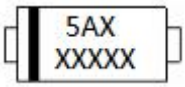
Notes: 1. Non-repetitive current pulse , per Fig. 3 and derated above T_L= 25°C per Fig. 2.
2. Mounted on 8.0x8.0mm Copper Pads to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

Ordering Information

Device	Package	Shipping
5.0SMHJ10A THRU 5.0SMHJ43A	SMC (Pb-Free)	3000pcs / reel
5.0SMHJ10ATR THRU 5.0SMHJ43ATR	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

5AX	= Marking Code
YY	= Year
WW	= Week
L	= Lot Number

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

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RoHS

Electrical Characteristics@T_A=25°C unless otherwise specified

DEVICE TYPE	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE V_{RWM} (V)	BREAKDOWN VOLTAGE V_{BR} (V) MIN. @I_T(1)	BREAKDOWN VOLTAGE V_{BR} (V) MAX. @I_T(1)	TEST CURRENT I_T(mA)	MAXMUM CLAMPING VOLTAGE @I_{PP} V_C(V)	PEAK PULSE CURRENT I_{PP}(A)(2)	REVERSE LEAKAGE @V_{RWM} I_R(uA)	REVERSE LEAKAGE @V_{RWM} T_J=150°C I_R(uA)
5.0SMHJ10A	5AX	10	11.1	12.3	1	17	294.1	20	500
5.0SMHJ12A	5BE	12	13.3	14.7	1	19.9	251.3	10	300
5.0SMHJ13A	5BG	13	14.4	15.9	1	21.5	232.6	10	300
5.0SMHJ16A	5BP	16	17.8	19.7	1	26	192.3	2	50
5.0SMHJ17A	5BR	17	18.9	20.9	1	27.6	181.2	2	50
5.0SMHJ18A	5BT	18	20	22.1	1	29.2	171.2	2	50
5.0SMHJ20A	5BV	20	22.2	24.5	1	32.4	154.3	2	50
5.0SMHJ22A	5BX	22	24.4	26.9	1	35.5	140.8	2	50
5.0SMHJ24A	5BZ	24	26.7	29.5	1	38.9	128.5	2	50
5.0SMHJ26A	5CE	26	28.9	31.9	1	42.1	118.8	2	50
5.0SMHJ28A	5CG	28	31.1	34.4	1	45.4	110.1	2	50
5.0SMHJ30A	5CK	30	33.3	36.8	1	48.4	103.3	2	50
5.0SMHJ33A	5CM	33	36.7	40.6	1	53.3	93.8	2	50
5.0SMHJ36A	5CP	36	40	44.2	1	58.1	86.1	2	50
5.0SMHJ40A	5CR	40	44.4	49.1	1	64.5	77.5	2	50
5.0SMHJ43A	5CT	43	47.8	52.8	1	69.4	72.0	2	50

Notes
(1) Pulse test: $t_p \leq 50$ ms
(2) Surge current waveform per fig. 3 and derated per fig. 2
(3) All terms and symbols are consistent with ANSI/IEEE C62.35

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Ratings and Characteristics Curves

Fig. 1 - Peak Pulse Power Rating Curve

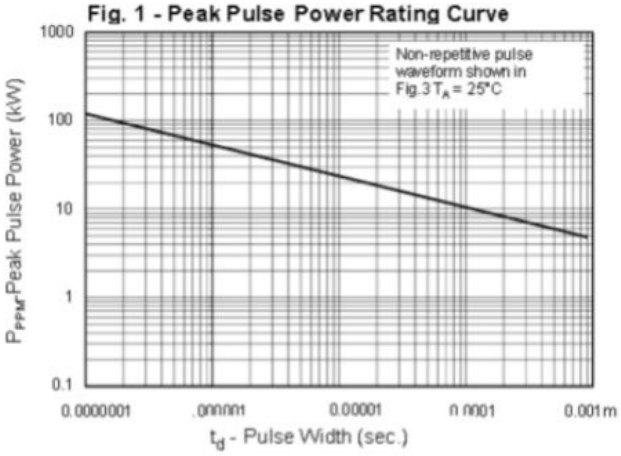


Fig.2 - Pulse Derating Curve

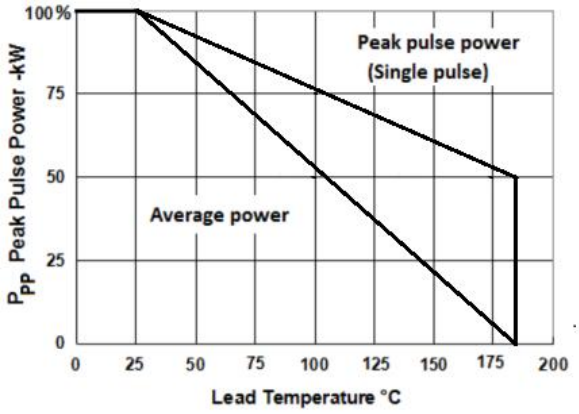


Fig.3 - Pulse Waveform

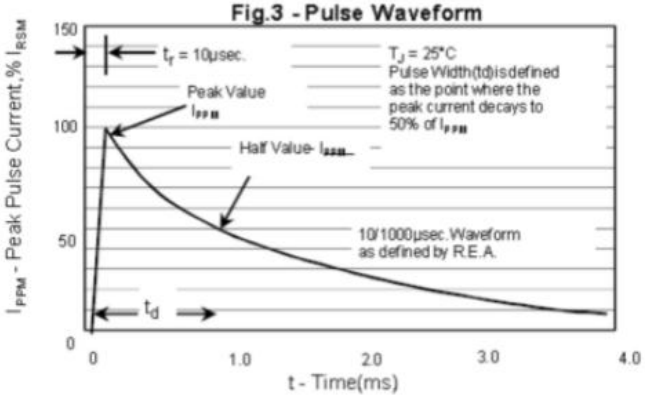


Fig. 4 - Typical Junction Capacitance

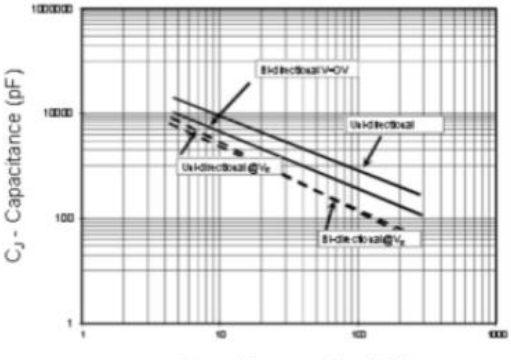


Fig. 5 - Steady State Power Derating Curve

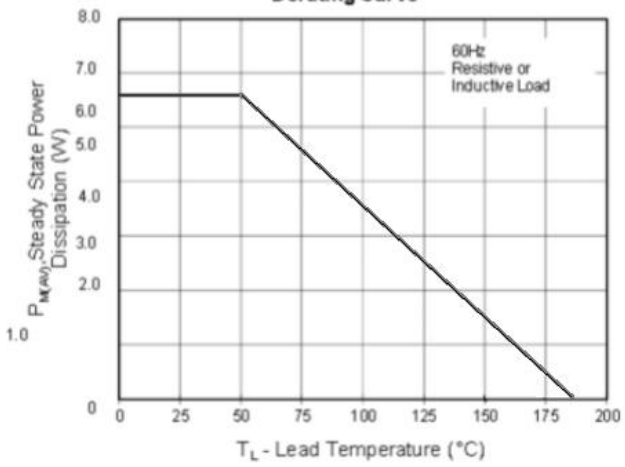
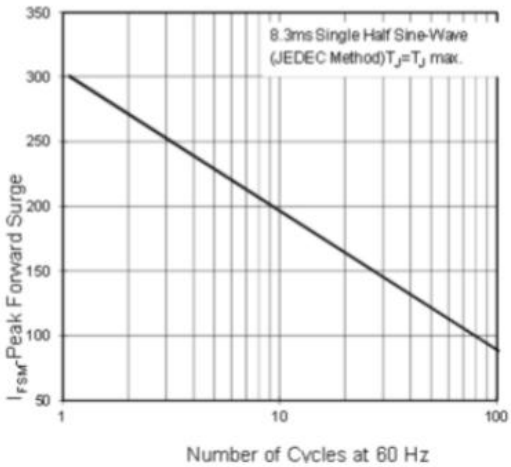


Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



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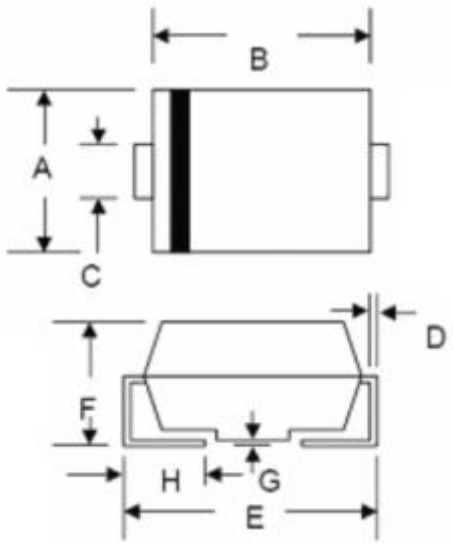
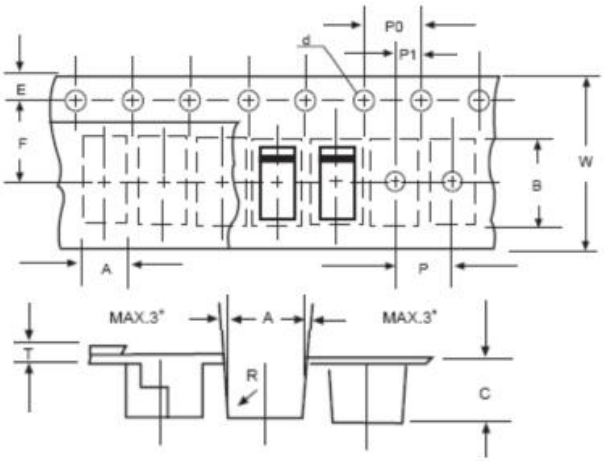
Mechanical Dimensions SMC



	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

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