

5.0SMHJ10A THRU 5.0SMHJ43A SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



Features

- For surface mounted applications in order to optimize board space
- $T_J=185^{\circ}\text{C}$, 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-0
- High temperature soldering: $260^{\circ}\text{C}/40$ 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@ $T_A=25^{\circ}\text{C}$ 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 Pulse Current of on 10/1000 us waveform (Note 1, Fig 3)	I_{PPM}	SEE TABLE 1	A
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	$^{\circ}\text{C}/\text{W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100	$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-65 to 185	$^{\circ}\text{C}$

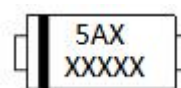
- Notes:**
1. Non-repetitive current pulse , per Fig. 3 and derated above $T_L=25^{\circ}\text{C}$ per Fig. 2.
 2. Mounted on 8.0x8.0mm Copper Pads to each terminal.
 3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

Ordering Information

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

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

Marking Diagram



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Where XXXXX is YYWWL

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

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

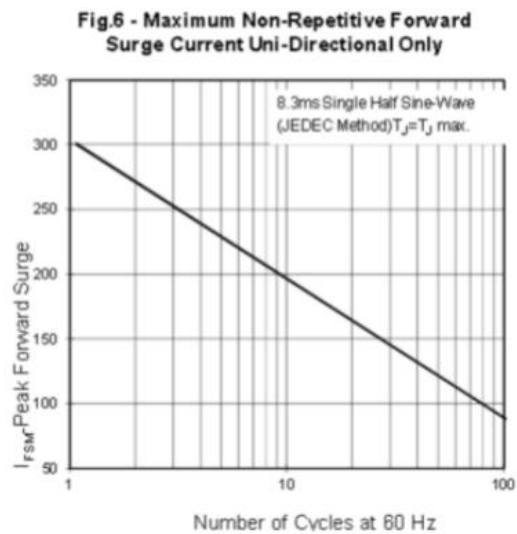
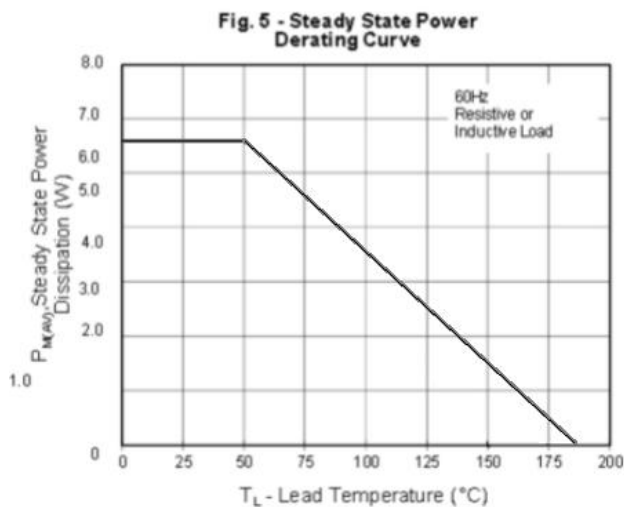
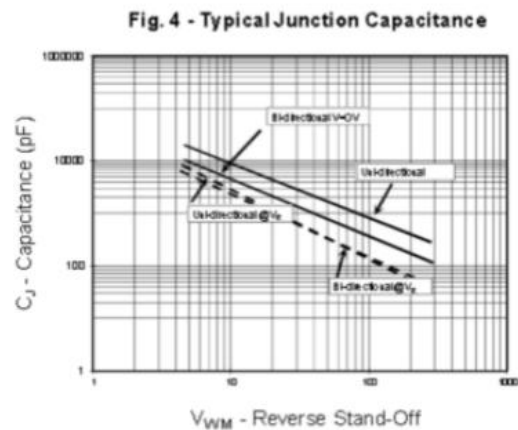
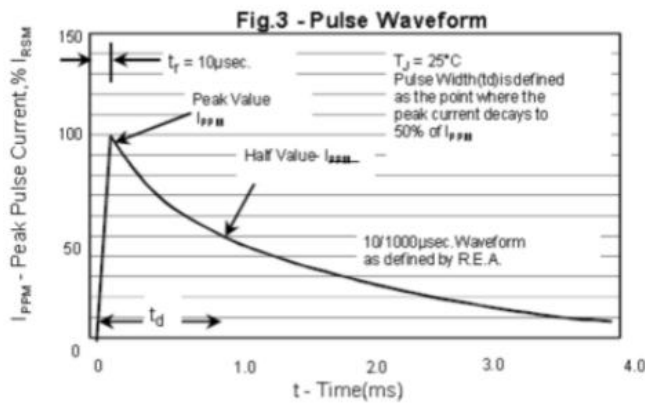
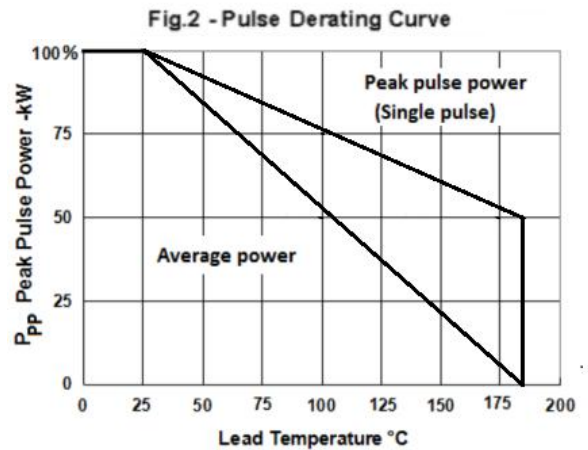
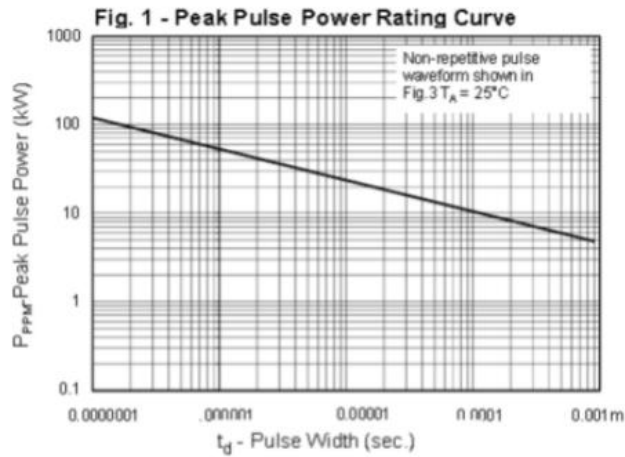
Electrical Characteristics@T_A=25°C unless otherwise specified

DEVICE TYPE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V _{BR} AT I _T ⁽¹⁾ (V)		TEST CURRENT I _T (mA)	STAND-OFF VOLTAGE V _{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V _{WM} I _R (μA)	MAXIMUM REVERSE LEAKAGE AT V _{WM} T _J = 150 °C I _D (μA)	MAXIMUM PEAK PULSE SURGE CURRENT I _{PPM} ⁽²⁾ (A)	MAXIMUM CLAMPING VOLTAGE AT I _{PPM} V _C (V)
		MIN.	MAX.						
5.0SMHJ10A	5AX	11.1	12.3	1.0	10	20.0	500	294.1	17.0
5.0SMHJ12A	5BE	13.3	14.7	1.0	12	10.0	300	251.3	19.9
5.0SMHJ13A	5BG	14.4	15.9	1.0	13	10.0	300	232.6	21.5
5.0SMHJ16A	5BP	17.8	19.7	1.0	16	2.0	50	192.3	26.0
5.0SMHJ17A	5BR	18.9	20.9	1.0	17	2.0	50	181.2	27.6
5.0SMHJ18A	5BT	20.0	22.1	1.0	18	2.0	50	171.2	29.2
5.0SMHJ20A	5BV	22.2	24.5	1.0	20	2.0	50	154.3	32.4
5.0SMHJ22A	5BX	24.4	26.9	1.0	22	2.0	50	140.8	35.5
5.0SMHJ24A	5BZ	26.7	29.5	1.0	24	2.0	50	128.5	38.9
5.0SMHJ26A	5CE	28.9	31.9	1.0	26	2.0	50	118.8	42.1
5.0SMHJ28A	5CG	31.1	34.4	1.0	28	2.0	50	110.1	45.4
5.0SMHJ30A	5CK	33.3	36.8	1.0	30	2.0	50	103.3	48.4
5.0SMHJ33A	5CM	36.7	40.6	1.0	33	2.0	50	93.8	53.3
5.0SMHJ36A	5CP	40.0	44.2	1.0	36	2.0	50	86.1	58.1
5.0SMHJ40A	5CR	44.4	49.1	1.0	40	2.0	50	77.5	64.5
5.0SMHJ43A	5CT	47.8	52.8	1.0	43	2.0	50	72.0	69.4

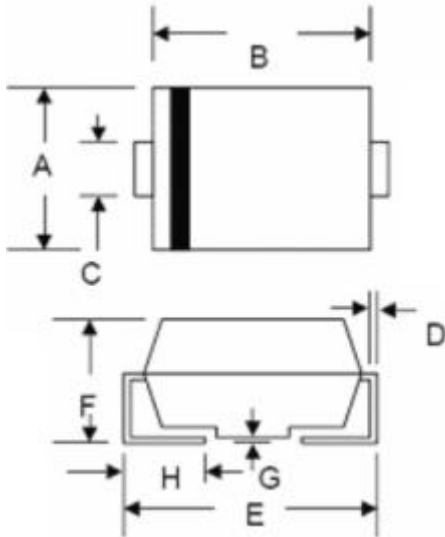
Notes

- (1) Pulse test: t_p ≤ 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

Ratings and Characteristics Curves

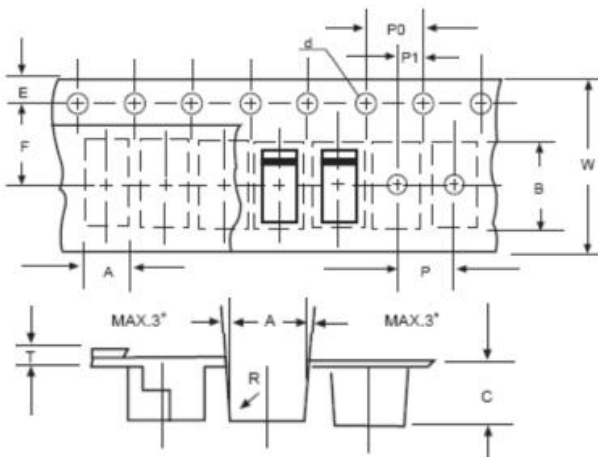


Mechanical Dimensions SMC



Dim.	SMC/DO-214AB			
	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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Technical Data
Data Sheet N1959 Rev. -



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