8.0SMDJ Series

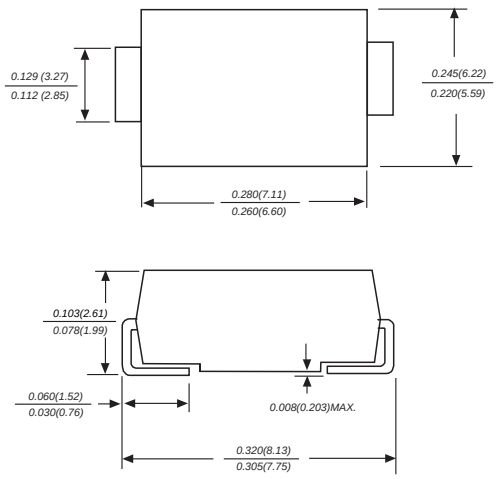
8000W Surface Mount Transient Voltage Suppressors- 13V - 440V

Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- 8000W peak pulse power capability with a 10/1000us waveform
- Low incremental surge resistance, excellent clamping capabilitys waveform
- Very fast response time
- High temperature soldering guaranteed: 260°C/10s at terminals
- Compliant to Halogen-free

Package outline

SMC/DO-214AB



Dimensions in inches and (millimeters)

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AB / SMC
- Terminals : Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
- Polarity : Indicated by cathode band
- Mounting Position : Any

Maximum ratings (AT T_A=25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Peak pulse power dissipation with 10/1000us waveform (1)(2) (fig.1)		P_{PPM}	8000	W
Power dissipation on infinite heatsink at T_L = 75℃		P_D	6.5	W
Peak pulse current with 10/1000us waveform (1)		I_{PPM}	See next table	A
Peak forward surge current 8.3ms single half sine-wave (3)		I_{FSM}	300	A
Instantaneous forward voltage (4) (for Uni-directional types only)	@ 100A	V_F	3.5/5.0	V
	@ 1A		1.5	V
Electrostatic Discharge	IEC61000-4-2 air discharge	ESD	±30	kV
	IEC61000-4-2 contact discharge		±30	kV
Thermal resistance Junction to Lead		$R th_{JL}$	15	℃/W
Thermal resistance Junction to Ambient (5)		Rth_{JA}	75	℃/W
Operating junction and storge temperature range		T_J, T_{STG}	-55 to +150	℃

Notes:
(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A = 25℃ per Fig.2.
(2) Mounted on 0.6 x 0.6" (16.0 x 16.0 mm) copper pads to each terminal
(3) Measured on 8.3ms single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.
(4) V_F=3.5V Max for devices of $V_{BR} \leqslant 220V$, and V_F=5.0V Max for devices of V_{BR} > 220V.
(5) Mounted on minimum recommended pad layout

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Electrical characteristics (at T_A=25°C unless otherwise noted)

Device Type	Marking Code		Breakdown Voltage V_{BR} (V) @ I_T		Test Current I_T (mA)	Max. Clamping Voltage V_C (V) @ I_{PPM}	Max. Peak Pulse Current I_{PPM}(A)	Max. Reverse Leakage Current I_R(uA) @ V_R	Max. Reverse Stand off Voltage V_R (V)
	Uni	Bi	Min.	Max.					
8.0SMDJ13(C)A	8PEQ	8BEQ	14.4	15.9	1	21.5	372.1	5	13
8.0SMDJ14(C)A	8PER	8BER	15.6	17.2	1	23.2	344.8	5	14
8.0SMDJ15(C)A	8PES	8BES	16.7	18.5	1	24.4	327.9	5	15
8.0SMDJ16(C)A	8PET	8BET	17.8	19.7	1	26	307.7	5	16
8.0SMDJ17(C)A	8PEU	8BEU	18.9	20.9	1	27.6	289.9	5	17
8.0SMDJ18(C)A	8PEV	8BEV	20	22.1	1	29.2	274.0	5	18
8.0SMDJ20(C)A	8PEW	8BEW	22.2	24.5	1	32.4	246.9	5	20
8.0SMDJ22(C)A	8PEX	8BEX	24.4	26.9	1	35.5	225.4	5	22
8.0SMDJ24(C)A	8PEZ	8BEZ	26.7	29.5	1	38.9	205.7	5	24
8.0SMDJ26(C)A	8PFE	8BFE	28.9	31.9	1	42.1	190.0	5	26
8.0SMDJ28(C)A	8PFG	8BFG	31.1	34.4	1	45.4	176.2	5	28
8.0SMDJ30(C)A	8PFK	8BFK	33.3	36.8	1	48.4	165.3	5	30
8.0SMDJ33(C)A	8PFM	8BFM	36.7	40.6	1	53.3	150.1	5	33
8.0SMDJ36(C)A	8PFP	8BFP	40	44.2	1	58.1	137.7	5	36
8.0SMDJ40(C)A	8PFR	8BFR	44.4	49.1	1	64.5	124.0	5	40
8.0SMDJ43(C)A	8PFT	8BFT	47.8	52.8	1	69.4	115.3	5	43
8.0SMDJ45(C)A	8PFV	8BFV	50	55.3	1	72.7	110.0	5	45
8.0SMDJ48(C)A	8PFX	8BFX	53.3	58.9	1	77.4	103.4	5	48
8.0SMDJ51(C)A	8PFZ	8BFZ	56.7	62.7	1	82.4	97.1	5	51
8.0SMDJ54(C)A	8PGE	8BGE	60	66.3	1	87.1	91.8	5	54
8.0SMDJ58(C)A	8PGG	8BGG	64.4	71.2	1	93.6	85.5	5	58
8.0SMDJ60(C)A	8PGK	8BGK	66.7	73.7	1	96.8	82.6	5	60
8.0SMDJ64(C)A	8PGM	8BGM	71.1	78.6	1	103	77.7	5	64
8.0SMDJ70(C)A	8PGP	8BGB	77.8	86	1	113	70.8	5	70
8.0SMDJ75(C)A	8PGR	8BGR	83.3	92.1	1	121	66.1	5	75
8.0SMDJ78(C)A	8PGT	8BGT	86.7	95.8	1	126	63.5	5	78
8.0SMDJ85(C)A	8PGV	8BGV	94.4	104	1	137	58.4	5	85
8.0SMDJ90(C)A	8PGX	8BGX	100	111	1	146	54.8	5	90
8.0SMDJ100(C)A	8PGZ	8BGZ	111	123	1	162	49.4	5	100
8.0SMDJ110(C)A	8PHE	8BHE	122	135	1	177	45.2	5	110
8.0SMDJ120(C)A	8PHG	8BHG	133	147	1	193	41.5	5	120
8.0SMDJ130(C)A	8PHK	8BHK	144	159	1	209	38.3	5	130
8.0SMDJ150(C)A	8PHM	8BHM	167	185	1	243	32.9	5	150
8.0SMDJ160(C)A	8PHP	8BHP	178	197	1	259	30.9	5	160
8.0SMDJ170(C)A	8PHR	8BHR	189	209	1	275	29.1	5	170
8.0SMDJ180(C)A	8PHT	8BHT	201	222	1	292	27.4	5	180
8.0SMDJ200(C)A	8PHW	8BHW	224	247	1	324	24.7	5	200

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Electrical characteristics (at T_A=25°C unless otherwise noted)

Device Type	Marking Code		Breakdown Voltage V_{BR} (V) @ I_T		Test Current I_T (mA)	Max. Clamping Voltage V_C (V) @ I_{PPM}	Max. Peak Pulse Current I_{PPM}(A)	Max. Reverse Leakage Current I_R(uA) @ V_R	Max. Reverse Stand off Voltage V_R (V)
	Uni	Bi	Min.	Max.					
8.0SMDJ220(C)A	8PHX	8BHX	246	272	1	356	22.5	5	220
8.0SMDJ250(C)A	8PHZ	8BHZ	279	309	1	405	19.8	5	250
8.0SMDJ300(C)A	8PJE	8BJE	335	371	1	486	16.5	5	300
8.0SMDJ350(C)A	8PJG	8BJG	391	432	1	567	14.1	5	350
8.0SMDJ400(C)A	8PJK	8BJK	447	494	1	648	12.3	5	400
8.0SMDJ440(C)A	8PJM	8BJM	492	543	1	713	11.2	5	440

Notes:
(1) Pulse Test: tp≤50ms
(2) Surge current waveform per Fig. 3 and derated per Fig.2
(3) V_{RWM} of 10V and less, the I_R limit is doubled.

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Rating and characteristic curves

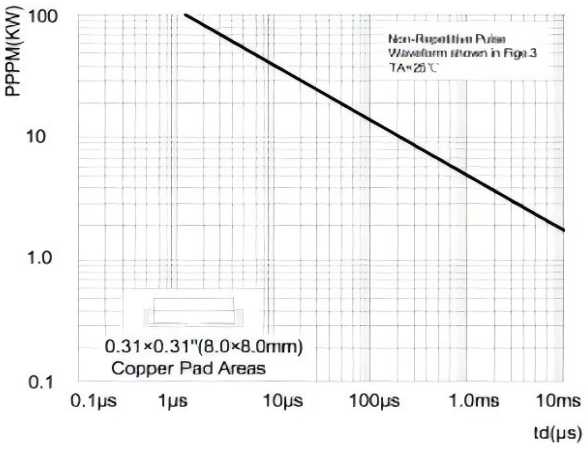

Fig. 1 - Power Derating Curve

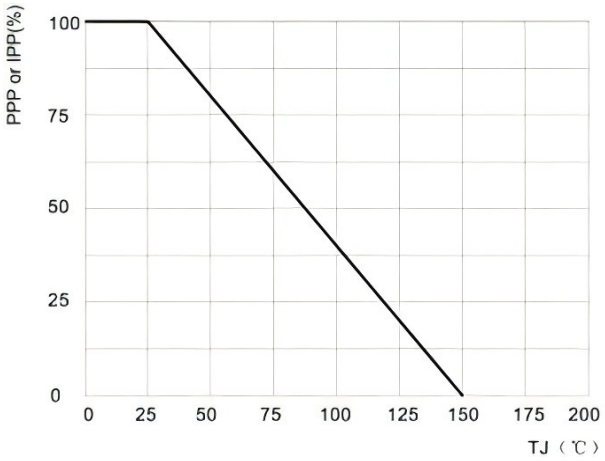

Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

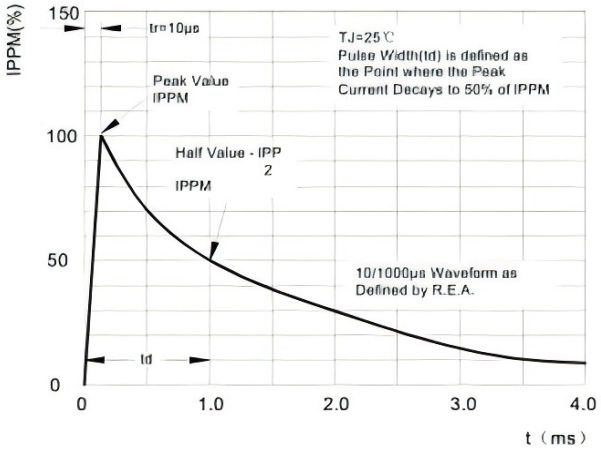

Fig. 3 - Pulse Waveform

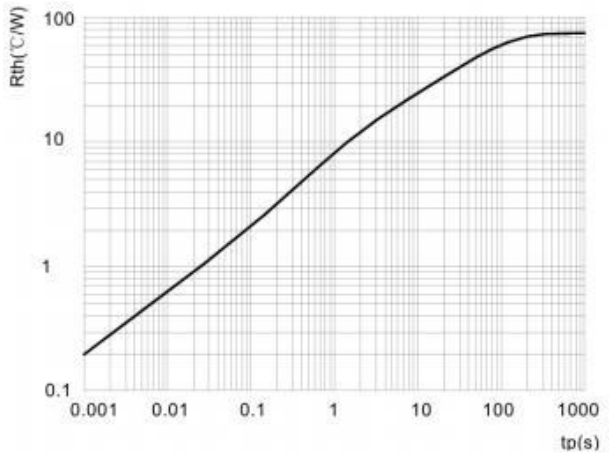

Fig. 4 - Typical Transient Thermal Impedance

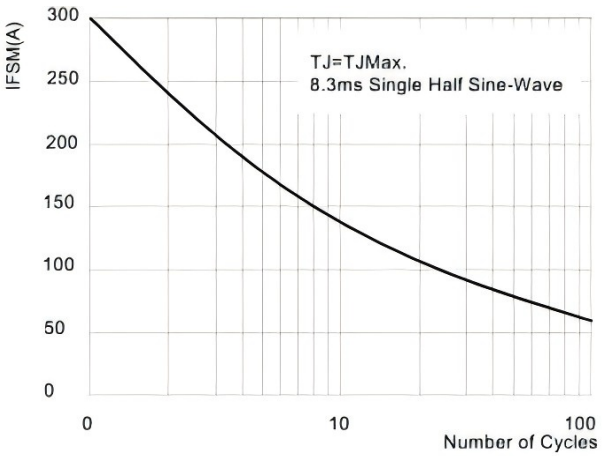

Fig. 5 - Maximum Non-Repetitive Surge Current

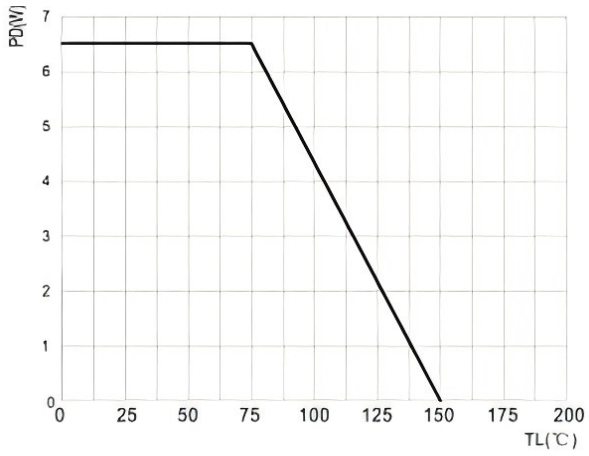

Fig. 6 - Steady State Power Dissipation

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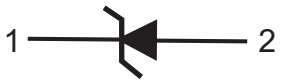
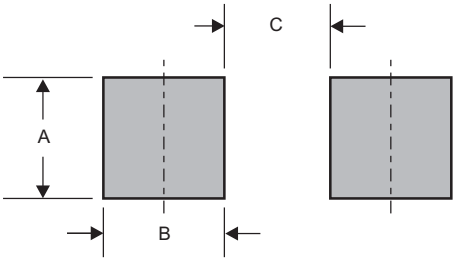
Pinning information

Pin	Simplified outline	Symbol
Uni-Directional Pin1 cathode Pin2 anode		
Bi-Directional		

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMC	0.150 (3.82)	0.119 (3.03)	0.151(3.84)