

5000W Transient Voltage Suppressors

Features

- Glass passivated chip.
- 5000W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.01%.
- IEC 61000-4-2 (ESD) \pm 30kV (air), \pm 30kV (contact)
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- RoHS Compliant.

Mechanical Data

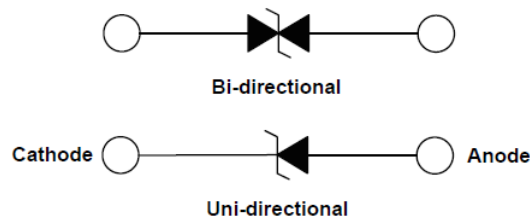
- Case: Epoxy, Molded
- Epoxy: UL 94V-0 rate flame retardant.
- Lead: Solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end except Bipolar
- Moisture Sensitivity: Level 1 per J-STD-020.

SMC/DO-214AB



Bi-directional

UNI-directional



Applications

- Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 μ s waveform ⁽¹⁾	P_{PP}	5000	W
Peak pulse current with a 10/1000 μ s waveform ⁽¹⁾	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	6.5	W
ESD per IEC 61000-4-2 (Air)	V_{ESD}	\pm 30	KV
ESD per IEC 61000-4-2 (Contact)		\pm 30	KV
Peak forward surge current, 8.3 ms single half sinewave unidirectional only ⁽²⁾	I_{FSM}	300	A
Maximum instantaneous forward voltage at 100 A for unidirectional only ⁽³⁾	V_F	3.5/5.0	V
Operating junction and storage temperature range	T_J, T_{STG}	-55 ~150	$^\circ\text{C}$

Note : (1) Non-repetitive current pulse per Fig.5 and derated above $T_A = 25^\circ\text{C}$ per Fig.1

(2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

(3) $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 201\text{V}$

Electrical Characteristics (T _A = 25°C Unless otherwise noted)										
Part Number (UNI)	Part Number (Bi)	Marking Code		Breakdown Voltage V _{BR} @ I _T			Maximum Reverse Leakage I _R @V _{RWM} (μA)	Working Reverse Voltage V _{RWM} (V)	Maximum Clamping Voltage V _C @I _{PP} (V)	Maximum Reverse Current I _{PP} (A)
		UNI	Bi	Min (V)	Max (V)	I _T (mA)				
5.0SMDJ11A-T	5.0SMDJ11CA-T	5PDX	5BDX	12.2	13.5	10	800	11	18.2	274.7
5.0SMDJ12A-T	5.0SMDJ12CA-T	5PDZ	5BDZ	13.3	14.7	10	800	12	19.9	251.3
5.0SMDJ13A-T	5.0SMDJ13CA-T	5PEE	5BEE	14.4	15.9	10	500	13	21.5	232.6
5.0SMDJ14A-T	5.0SMDJ14CA-T	5PEG	5BEG	15.6	17.2	10	200	14	23.2	215.5
5.0SMDJ15A-T	5.0SMDJ15CA-T	5PEK	5BEK	16.7	18.5	1	100	15	24.4	204.9
5.0SMDJ16A-T	5.0SMDJ16CA-T	5PEM	5BEM	17.8	19.7	1	50	16	26	192.3
5.0SMDJ17A-T	5.0SMDJ17CA-T	5PEP	5BEP	18.9	20.9	1	20	17	27.6	181.2
5.0SMDJ18A-T	5.0SMDJ18CA-T	5PER	5BER	20	22.1	1	10	18	29.2	171.2
5.0SMDJ19A-T	5.0SMDJ19CA-T	5PET	5BET	21.1	23.3	1	10	19	30.8	162.4
5.0SMDJ20A-T	5.0SMDJ20CA-T	5PEV	5BEV	22.2	24.5	1	5	20	32.4	154.3
5.0SMDJ22A-T	5.0SMDJ22CA-T	5PEX	5BEX	24.4	26.9	1	5	22	35.5	140.8
5.0SMDJ24A-T	5.0SMDJ24CA-T	5PEZ	5BEZ	26.7	29.5	1	5	24	38.9	128.5
5.0SMDJ26A-T	5.0SMDJ26CA-T	5PFE	5BFE	28.9	31.9	1	5	26	42.1	118.8
5.0SMDJ28A-T	5.0SMDJ28CA-T	5PFG	5BFG	31.1	34.4	1	5	28	45.4	110.1
5.0SMDJ30A-T	5.0SMDJ30CA-T	5PFK	5BFK	33.3	36.8	1	5	30	48.4	103.3
5.0SMDJ33A-T	5.0SMDJ33CA-T	5PFM	5BFM	36.7	40.6	1	5	33	53.3	93.8
5.0SMDJ36A-T	5.0SMDJ36CA-T	5PFP	5BFP	40	44.2	1	5	36	58.1	86.1
5.0SMDJ40A-T	5.0SMDJ40CA-T	5PFR	5BFR	44.4	49.1	1	5	40	64.5	77.5
5.0SMDJ43A-T	5.0SMDJ43CA-T	5PFT	5BFT	47.8	52.8	1	5	43	69.4	72
5.0SMDJ45A-T	5.0SMDJ45CA-T	5PFV	5BFV	50	55.3	1	5	45	72.7	68.8
5.0SMDJ48A-T	5.0SMDJ48CA-T	5PFX	5BFX	53.3	58.9	1	5	48	77.4	64.6
5.0SMDJ51A-T	5.0SMDJ51CA-T	5PFZ	5BFZ	56.7	62.7	1	5	51	82.4	60.7
5.0SMDJ54A-T	5.0SMDJ54CA-T	5PGE	5BGE	60	66.3	1	5	54	87.1	57.4
5.0SMDJ58A-T	5.0SMDJ58CA-T	5PGG	5BGG	64.4	71.2	1	5	58	93.6	53.4
5.0SMDJ60A-T	5.0SMDJ60CA-T	5PGK	5BGK	66.7	73.7	1	5	60	96.8	51.7
5.0SMDJ64A-T	5.0SMDJ64CA-T	5PGM	5BGM	71.1	78.6	1	5	64	103	48.5
5.0SMDJ70A-T	5.0SMDJ70CA-T	5PGP	5BGP	77.8	86	1	5	70	113	44.2
5.0SMDJ75A-T	5.0SMDJ75CA-T	5PGR	5BGR	83.3	92.1	1	5	75	121	41.3
5.0SMDJ78A-T	5.0SMDJ78CA-T	5PGT	5BGT	86.7	95.8	1	5	78	126	39.7
5.0SMDJ80A-T	5.0SMDJ80CA-T	5PGB	5BGB	88.8	97.6	1	5	80	129.6	38.6

Electrical Characteristics (T _A = 25°C Unless otherwise noted)										
Part Number (UNI)	Part Number (Bi)	Marking Code		Breakdown Voltage V _{BR} @ I _T			Maximum Reverse Leakage I _R @V _{RWM} (μA)	Working Reverse Voltage V _{RWM} (V)	Maximum Clamping Voltage V _C @I _{PP} (V)	Maximum Reverse Current I _{PP} (A)
		UNI	Bi	Min (V)	Max (V)	I _T (mA)				
5.0SMDJ85A-T	5.0SMDJ85CA-T	5PGV	5BGV	94.4	104	1	5	85	137	36.5
5.0SMDJ90A-T	5.0SMDJ90CA-T	5PGX	5BGX	100	111	1	5	90	146	34.2
5.0SMDJ100A-T	5.0SMDJ100CA-T	5PGZ	5BGZ	111	123	1	5	100	162	30.9
5.0SMDJ110A-T	5.0SMDJ110CA-T	5PHE	5BHE	122	135	1	5	110	177	28.2
5.0SMDJ120A-T	5.0SMDJ120CA-T	5PHG	5BHG	133	147	1	5	120	193	25.9
5.0SMDJ130A-T	5.0SMDJ130CA-T	5PHK	5BHK	144	159	1	5	130	209	23.9
5.0SMDJ140A-T	5.0SMDJ140CA-T	5PHB	5BHB	155	171	1	5	140	226.8	22
5.0SMDJ150A-T	5.0SMDJ150CA-T	5PHM	5BHM	167	185	1	5	150	243	20.6
5.0SMDJ160A-T	5.0SMDJ160CA-T	5PHP	5BHP	178	197	1	5	160	259	19.3
5.0SMDJ170A-T	5.0SMDJ170CA-T	5PHR	5BHR	189	209	1	5	170	275	18.2
5.0SMDJ180A-T	5.0SMDJ180CA-T	5PHT	5BHT	200	220	1	5	180	291.6	17.1
5.0SMDJ190A-T	5.0SMDJ190CA-T	5PHV	5BHV	211	232	1	5	190	307.8	16.2
5.0SMDJ200A-T	5.0SMDJ200CA-T	5PHW	5BHW	224	247	1	5	200	324	15.4
5.0SMDJ220A-T	5.0SMDJ220CA-T	5PHX	5BHX	246	272	1	5	220	356	14
5.0SMDJ250A-T	5.0SMDJ250CA-T	5PHZ	5BHZ	279	309	1	5	250	405	12.3
5.0SMDJ300A-T	5.0SMDJ300CA-T	5PJE	5BJE	335	371	1	5	300	486	10.3
5.0SMDJ350A-T	5.0SMDJ350CA-T	5PJG	5BJG	391	432	1	5	350	567	8.8
5.0SMDJ400A-T	5.0SMDJ400CA-T	5PJK	5BJK	447	494	1	5	400	648	7.7
5.0SMDJ440A-T	5.0SMDJ440CA-T	5PJM	5BJM	492	543	1	5	440	713	7

Typical Performance Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

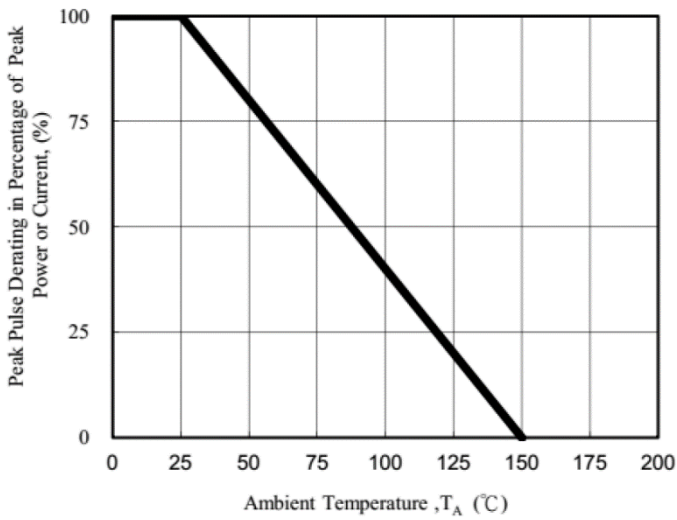


Fig 1. Pulse Derating Curve

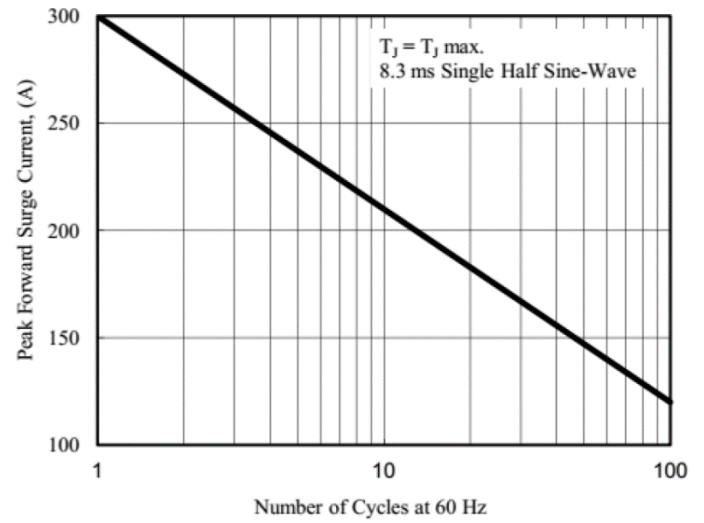


Fig 2. Maximum Non-Repetitive Surge Current

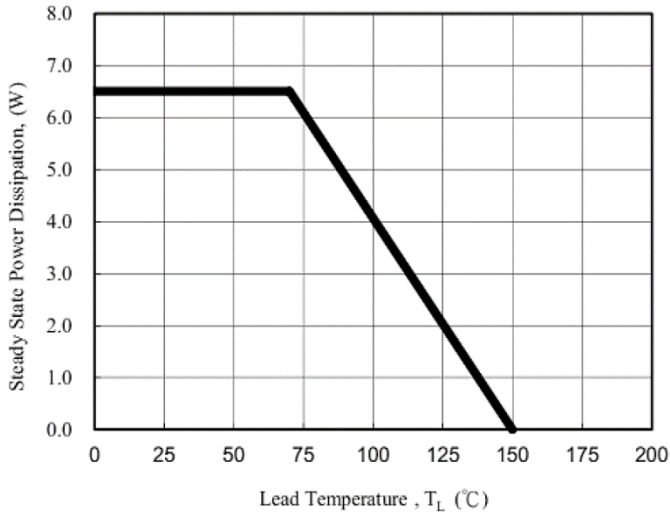


Fig 3. Steady State Power Derating Curve

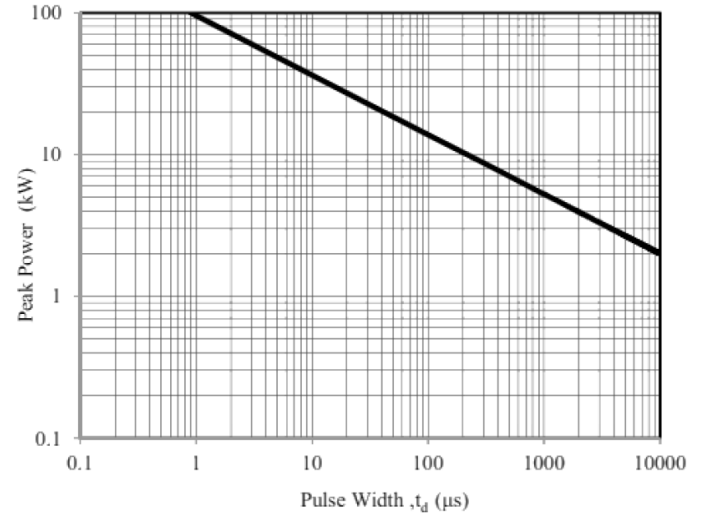


Fig 4. Peak Pulse Power Rating Curve

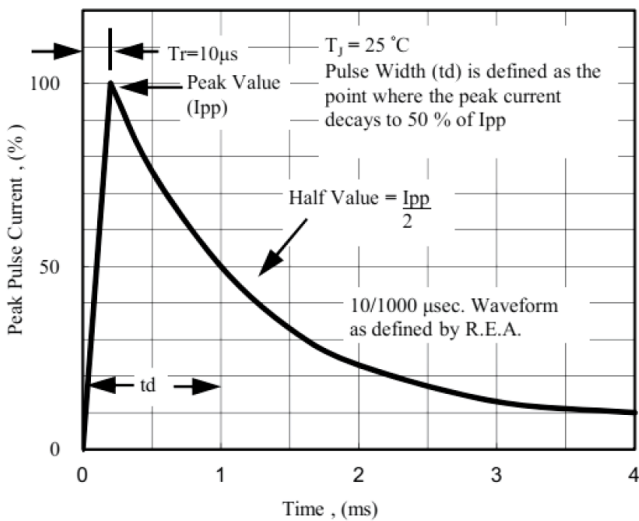


Fig 5. Pulse Waveform

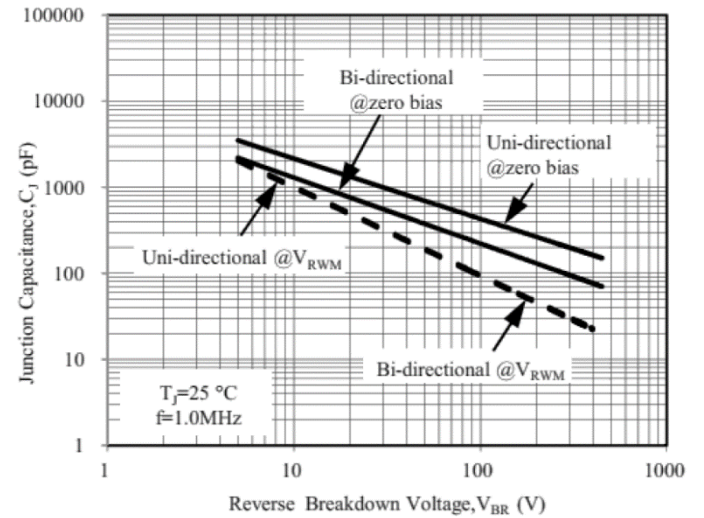
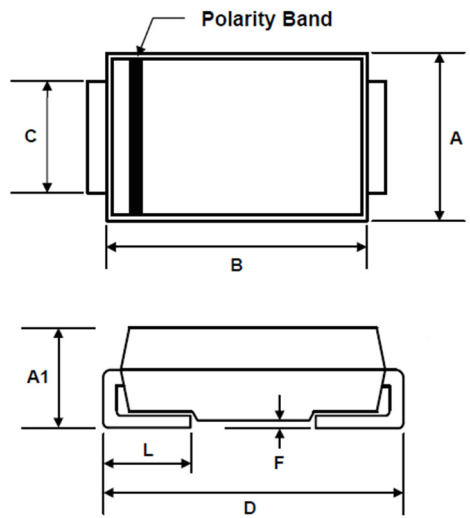
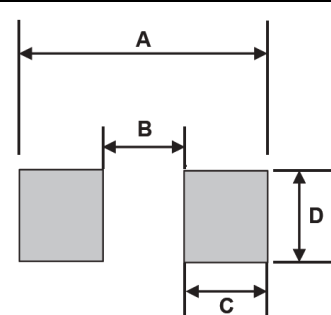


Fig 6. Typical Junction Capacitance

Package Outline Drawing

Symbol	Dimensions		
	Millimeters		
	Min.	Max.	
A	5.52	6.22	
B	6.52	7.11	
C	2.75	3.27	
A1	1.98	2.62	
D	7.64	8.13	
L	0.75	1.52	
F	0.00	0.30	

Suggested PAD Layout

Symbol	Dimensions	
	Millimeters	
A	9.90	
B	3.84	
C	3.03	
D	3.82	

Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
5.0SMDJxxx(A)CA-T	DO-214AB(SMC)	3,000	13	Tape and reel