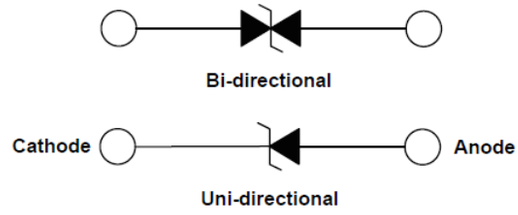
3000W Transient Voltage Suppressors

Features

- Glass passivated chip.
- 3000W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01%.
- IEC 61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- RoHS Compliant.

SMC/DO-214AB

Bi-directional **UNI-directional**



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.
- Moisture Sensitivity: Level 1 per J-STD-020.

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℃ Unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000μs waveform (1)	P_{PP}	3000	W
Peak pulse current with a 10/1000μs waveform (1)	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at T_L = 75 °C	P_D	6.0	W
ESD per IEC 61000-4-2 (Air)	V_{ESD}	±30	KV
ESD per IEC 61000-4-2 (Contact)		±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	℃

Note : (1) Non-repetitive current pulse per Fig.5 and derated above T_A= 25 °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<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>201V

Electrical Characteristics (T_A = 25℃ Unless otherwise noted)										
Part Number (UNI)	Part Number (Bi)	Marking Code		Breakdown Voltage V_{BR} @ I_T			Maximum Reverse Leakage	Working Reverse Voltage	Maximum Clamping Voltage	Maximum Reverse Current
		UNI	Bi	Min (V)	Max (V)	I_T (mA)	I_R@V_{RWM} (μA)	V_{RWM} (V)	V_C@I_{PP} (V)	I_{PP} (A)
SMDJ5.0A-T	SMDJ5.0CA-T	RDE	DDE	6.4	7	50	5000	5	9.2	326.09
SMDJ6.0A-T	SMDJ6.0CA-T	RDG	DDG	6.67	7.37	50	5000	6	10.3	291.26
SMDJ6.5A-T	SMDJ6.5CA-T	RDK	DDK	7.22	7.98	50	2000	6.5	11.2	267.86
SMDJ7.0A-T	SMDJ7.0CA-T	PDM	DDM	7.78	8.6	50	1000	7	12	250
SMDJ7.5A-T	SMDJ7.5CA-T	PDP	DDP	8.33	9.21	5	250	7.5	12.9	232.56
SMDJ8.0A-T	SMDJ8.0CA-T	PDR	DDR	8.89	9.83	5	150	8	13.6	220.59
SMDJ8.5A-T	SMDJ8.5CA-T	PDT	DDT	9.44	10.4	5	50	8.5	14.4	208.33
SMDJ9.0A-T	SMDJ9.0CA-T	PDV	DDV	10	11.1	5	20	9	15.4	194.81
SMDJ10A-T	SMDJ10CA-T	PDX	DDX	11.1	12.3	5	15	10	17	176.47
SMDJ11A-T	SMDJ11CA-T	PDZ	DDZ	12.2	13.5	5	2	11	18.2	164.84
SMDJ12A-T	SMDJ12CA-T	PEE	DEE	13.3	14.7	5	2	12	19.9	150.75
SMDJ13A-T	SMDJ13CA-T	PEG	DEG	14.4	15.9	5	2	13	21.5	139.53
SMDJ14A-T	SMDJ14CA-T	PEK	DEK	15.6	17.2	5	2	14	23.2	129.31
SMDJ15A-T	SMDJ15CA-T	PEM	DEM	16.7	18.5	5	2	15	24.4	122.95
SMDJ16A-T	SMDJ16CA-T	PEP	DEP	17.8	19.7	5	2	16	26	115.38
SMDJ17A-T	SMDJ17CA-T	PER	DER	18.9	20.9	5	2	17	27.6	108.7
SMDJ18A-T	SMDJ18CA-T	PET	DET	20	22.1	5	2	18	29.2	102.74
SMDJ19A-T	SMDJ19CA-T	PEB	DEB	21.1	23.3	5	2	19	30.8	97.47
SMDJ20A-T	SMDJ20CA-T	PEV	DEV	22.2	24.5	5	2	20	32.4	92.59
SMDJ22A-T	SMDJ22CA-T	PEX	DEX	24.4	26.9	5	2	22	35.5	84.51
SMDJ24A-T	SMDJ24CA-T	PEZ	DEZ	26.7	29.5	5	2	24	38.9	77.12
SMDJ26A-T	SMDJ26CA-T	PFE	DFE	28.9	31.9	5	2	26	42.1	71.26
SMDJ28A-T	SMDJ28CA-T	PFG	DFG	31.1	34.4	5	2	28	45.4	66.08
SMDJ30A-T	SMDJ30CA-T	PFK	DFK	33.3	36.8	5	2	30	48.4	61.98
SMDJ33A-T	SMDJ33CA-T	PFM	DFM	36.7	40.6	5	2	33	53.3	56.29
SMDJ36A-T	SMDJ36CA-T	PFP	DFP	40	44.2	5	2	36	58.1	51.64
SMDJ40A-T	SMDJ40CA-T	PFR	DFR	44.4	49.1	5	2	40	64.5	46.51
SMDJ43A-T	SMDJ43CA-T	PFT	DFT	47.8	52.8	5	2	43	69.4	43.23
SMDJ45A-T	SMDJ45CA-T	PFV	DFV	50	55.3	5	2	45	72.7	41.27
SMDJ48A-T	SMDJ48CA-T	PFX	DFX	53.3	58.9	5	2	48	77.4	38.76

Electrical Characteristics (T_A = 25℃ Unless otherwise noted)										
Part Number (UNI)	Part Number (Bi)	Marking Code		Breakdown Voltage V_{BR} @ I_T			Maximum Reverse Leakage	Working Reverse Voltage	Maximum Clamping Voltage	Maximum Reverse Current
		UNI	Bi	Min (V)	Max (V)	I_T (mA)	I_R@V_{RWM} (μA)	V_{RWM} (V)	V_C@I_{PP} (V)	I_{PP} (A)
SMDJ51A-T	SMDJ51CA-T	PFZ	DFZ	56.7	62.7	5	2	51	82.4	36.41
SMDJ54A-T	SMDJ54CA-T	RGE	DGE	60	66.3	5	2	54	87.1	34.44
SMDJ58A-T	SMDJ58CA-T	PGG	DGG	64.4	71.2	5	2	58	93.6	32.05
SMDJ60A-T	SMDJ60CA-T	PGK	DGK	66.7	73.7	5	2	60	96.8	30.99
SMDJ64A-T	SMDJ64CA-T	PGM	DGM	71.1	78.6	5	2	64	103	29.13
SMDJ70A-T	SMDJ70CA-T	PGP	DGP	77.8	86	5	2	70	113	26.55
SMDJ75A-T	SMDJ75CA-T	PGR	DGR	83.3	92.1	5	2	75	121	24.79
SMDJ78A-T	SMDJ78CA-T	PGT	DGT	86.7	95.8	5	2	78	126	23.81
SMDJ80A-T	SMDJ80CA-T	PGB	DGB	88.8	97.6	5	2	80	129.6	23.15
SMDJ85A-T	SMDJ85CA-T	PGV	DGV	94.4	104	5	2	85	137	21.9
SMDJ90A-T	SMDJ90CA-T	PGX	DGX	100	111	5	2	90	146	20.55
SMDJ100A-T	SMDJ100CA-T	PGZ	DGZ	111	123	5	2	100	162	18.52
SMDJ110A-T	SMDJ110CA-T	PHE	DHE	122	135	5	2	110	177	16.95
SMDJ120A-T	SMDJ120CA-T	PHG	DHG	133	147	5	2	120	193	15.54
SMDJ130A-T	SMDJ130CA-T	PHK	DHK	144	159	5	2	130	209	14.35
SMDJ140A-T	SMDJ140CA-T	PHB	DHB	155	171	5	2	140	226.8	13.23
SMDJ150A-T	SMDJ150CA-T	PHM	DHM	167	185	5	2	150	243	12.35
SMDJ160A-T	SMDJ160CA-T	PHP	DHP	178	197	5	2	160	259	11.58
SMDJ170A-T	SMDJ170CA-T	PHR	DHR	189	209	5	2	170	275	10.91
SMDJ180A-T	SMDJ180CA-T	PHT	DHT	200	220	5	2	180	291.6	10.29
SMDJ190A-T	SMDJ190CA-T	PHV	DHV	211	232	5	2	190	307.8	9.75
SMDJ200A-T	SMDJ200CA-T	PHW	DHW	224	247	5	2	200	324	9.26
SMDJ220A-T	SMDJ220CA-T	PHX	DHX	246	272	5	2	220	356	8.43
SMDJ250A-T	SMDJ250CA-T	PHZ	DHZ	279	309	5	2	250	405	7.41
SMDJ300A-T	SMDJ300CA-T	PJE	DJE	335	371	5	2	300	486	6.17
SMDJ350A-T	SMDJ350CA-T	PJG	DJG	391	432	5	2	350	567	5.29
SMDJ400A-T	SMDJ400CA-T	PJK	DJK	447	494	5	2	400	648	4.63
SMDJ440A-T	SMDJ440CA-T	PJM	DJM	492	543	5	2	440	713	4.21

Typical Performance Characteristics (T_A = 25℃ Unless otherwise noted)

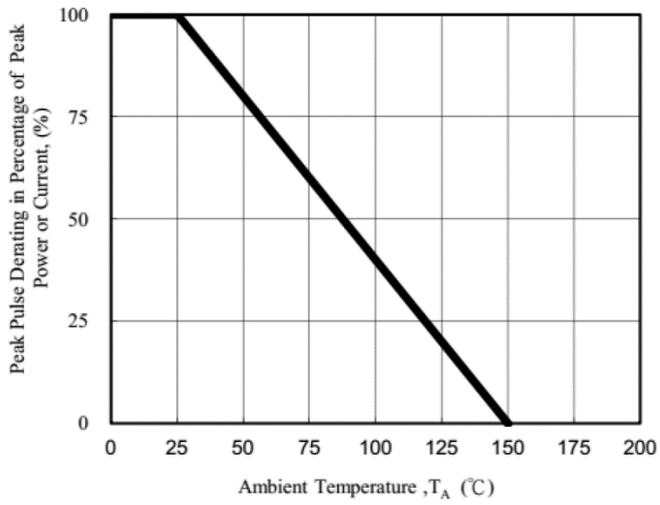


Fig 1. Pulse Derating Curve

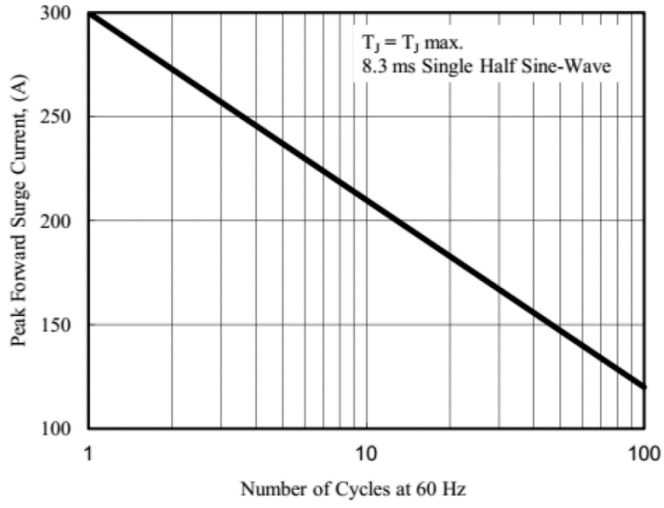


Fig 2. Maximum Non-Repetitive Surge Current

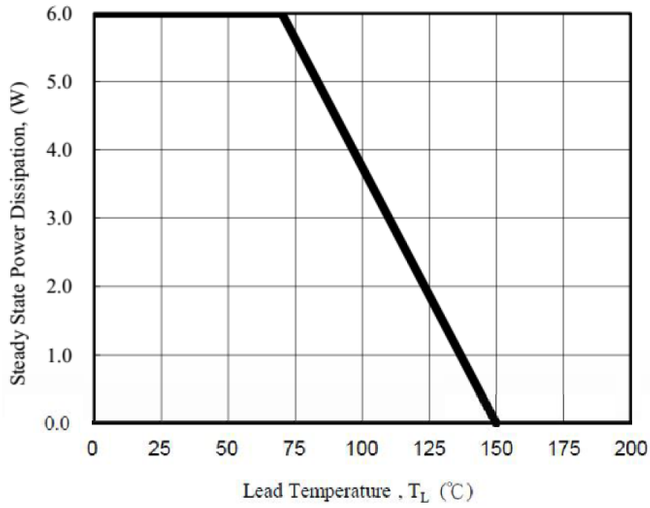


Fig 3. Steady State Power Derating Curve

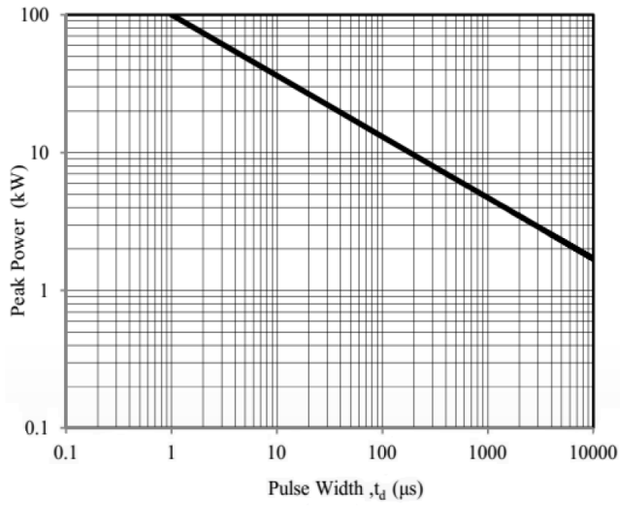


Fig 4. Peak Pulse Power Rating Curve

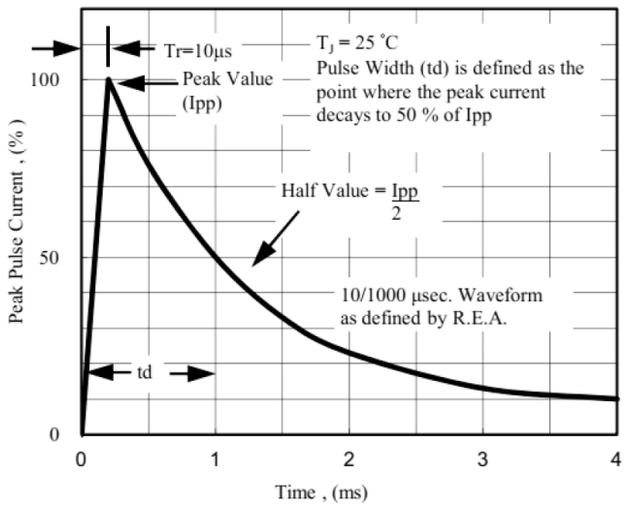


Fig 5. Pulse Waveform

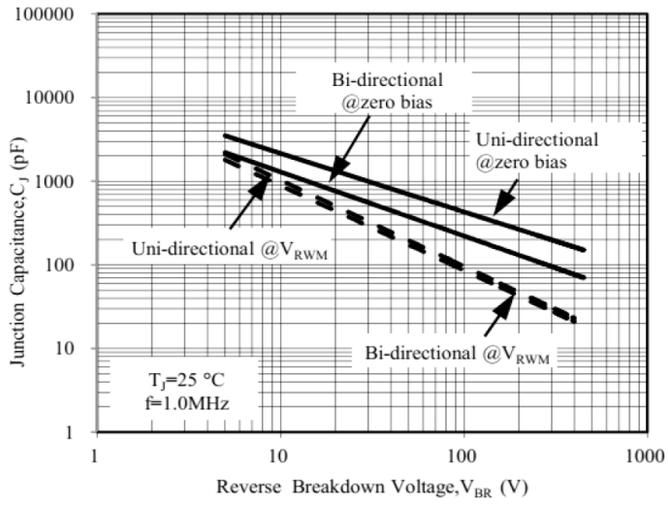
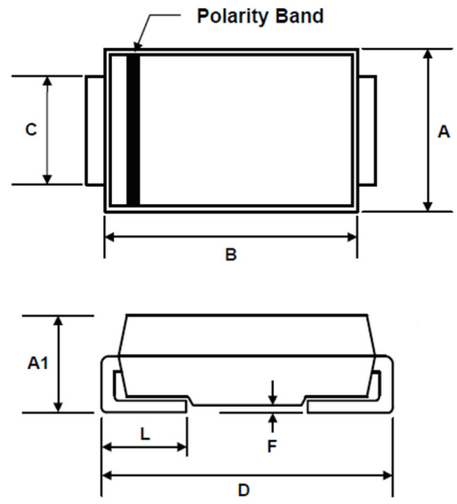


Fig 6. Typical Junction Capacitance

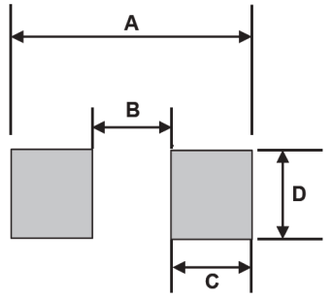
Package Outline Drawing

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)	
SMDJxxx(A)CA-T	DO-214AB(SMC)	3,000	13	Tape and reel