

### 1500W Transient Voltage Suppressors

#### Features

- Glass passivated chip.
- 1500W peak pulse power capability with a 10/1000  $\mu$ 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

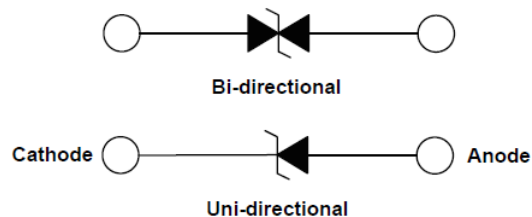
- Case: Epoxy, Molded
- Epoxy: UL 94V-0 rate flame retardant.
- Lead: Solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end.
- Moisture Sensitivity: Level 1 per J-STD-020.

#### 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 $\mu$ s waveform <sup>(1)</sup>	$P_{PP}$	1500	W
Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$I_{PP}$	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, 8.3ms single half sinewave unidirectional only <sup>(2)</sup>	$I_{FSM}$	200	A
Maximum instantaneous forward voltage at 100 A for unidirectional only <sup>(3)</sup>	$V_F$	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 <sub>A</sub> = 25°C Unless otherwise noted)										
Part Number (UNI)	Part Number (Bi)	Marking Code		Breakdown Voltage V <sub>BR</sub> @ I <sub>T</sub>			Maximum Reverse Leakage I <sub>R</sub> @V <sub>RWM</sub> (μA)	Working Reverse Voltage V <sub>RWM</sub> (V)	Maximum Clamping Voltage V <sub>C</sub> @I <sub>PP</sub> (V)	Maximum Reverse Current I <sub>PP</sub> (A)
		UNI	Bi	Min (V)	Max (V)	I <sub>T</sub> (mA)				
SMCJ5.0A-T	SMCJ5.0CA-T	GDE	BDE	6.4	7	10	800/1600	5	9.2	163.04
SMCJ6.0A-T	SMCJ6.0CA-T	GDG	BDG	6.67	7.37	10	800/1600	6	10.3	145.63
SMCJ6.5A-T	SMCJ6.5CA-T	GDK	BDK	7.22	7.98	10	500/1000	6.5	11.2	133.93
SMCJ7.0A-T	SMCJ7.0CA-T	GDM	BDM	7.78	8.6	10	200/400	7	12	125
SMCJ7.5A-T	SMCJ7.5CA-T	GDP	BDP	8.33	9.21	1	100/200	7.5	12.9	116.28
SMCJ8.0A-T	SMCJ8.0CA-T	GDR	BDR	8.89	9.83	1	50/100	8	13.6	110.29
SMCJ8.5A-T	SMCJ8.5CA-T	GDT	BDT	9.44	10.4	1	20/40	8.5	14.4	104.17
SMCJ9.0A-T	SMCJ9.0CA-T	GDV	BDV	10	11.1	1	10/20	9	15.4	97.4
SMCJ10A-T	SMCJ10CA-T	GDX	BDX	11.1	12.3	1	5	10	17	88.24
SMCJ11A-T	SMCJ11CA-T	GDZ	BDZ	12.2	13.5	1	1	11	18.2	82.42
SMCJ12A-T	SMCJ12CA-T	GEE	BEE	13.3	14.7	1	1	12	19.9	75.38
SMCJ13A-T	SMCJ13CA-T	GEG	BEG	14.4	15.9	1	1	13	21.5	69.77
SMCJ14A-T	SMCJ14CA-T	GEK	BEK	15.6	17.2	1	1	14	23.2	64.66
SMCJ15A-T	SMCJ15CA-T	GEM	BEM	16.7	18.5	1	1	15	24.4	61.48
SMCJ16A-T	SMCJ16CA-T	GEP	BEP	17.8	19.7	1	1	16	26	57.69
SMCJ17A-T	SMCJ17CA-T	GER	BER	18.9	20.9	1	1	17	27.6	54.35
SMCJ18A-T	SMCJ18CA-T	GET	BET	20	22.1	1	1	18	29.2	51.37
SMCJ19A-T	SMCJ19CA-T	GEB	BEB	21.1	23.3	1	1	19	30.8	48.73
SMCJ20A-T	SMCJ20CA-T	GEV	BEV	22.2	24.5	1	1	20	32.4	46.3
SMCJ22A-T	SMCJ22CA-T	GEX	BEX	24.4	26.9	1	1	22	35.5	42.25
SMCJ24A-T	SMCJ24CA-T	GEZ	BEZ	26.7	29.5	1	1	24	38.9	38.56
SMCJ26A-T	SMCJ26CA-T	GFE	BFE	28.9	31.9	1	1	26	42.1	35.63
SMCJ28A-T	SMCJ28CA-T	GFG	BFG	31.1	34.4	1	1	28	45.4	33.04
SMCJ30A-T	SMCJ30CA-T	GFK	BFK	33.3	36.8	1	1	30	48.4	30.99
SMCJ33A-T	SMCJ33CA-T	GFM	BFM	36.7	40.6	1	1	33	53.3	28.14
SMCJ36A-T	SMCJ36CA-T	GFP	BFP	40	44.2	1	1	36	58.1	25.82
SMCJ40A-T	SMCJ40CA-T	GFR	BFR	44.4	49.1	1	1	40	64.5	23.26
SMCJ43A-T	SMCJ43CA-T	GFT	BFT	47.8	52.8	1	1	43	69.4	21.61
SMCJ45A-T	SMCJ45CA-T	GFV	BFV	50	55.3	1	1	45	72.7	20.63
SMCJ48A-T	SMCJ48CA-T	GFX	BFX	53.3	58.9	1	1	48	77.4	19.38

Electrical Characteristics (T <sub>A</sub> = 25°C Unless otherwise noted)										
Part Number (UNI)	Part Number (Bi)	Marking Code		Breakdown Voltage V <sub>BR</sub> @ I <sub>T</sub>			Maximum Reverse Leakage I <sub>R</sub> @V <sub>RWM</sub> (μA)	Working Reverse Voltage V <sub>RWM</sub> (V)	Maximum Clamping Voltage V <sub>C</sub> @I <sub>PP</sub> (V)	Maximum Reverse Current I <sub>PP</sub> (A)
		UNI	Bi	Min (V)	Max (V)	I <sub>T</sub> (mA)				
SMCJ51A-T	SMCJ51CA-T	GFZ	BFZ	56.7	62.7	1	1	51	82.4	18.2
SMCJ54A-T	SMCJ54CA-T	GGE	BGE	60	66.3	1	1	54	87.1	17.22
SMCJ58A-T	SMCJ58CA-T	GGG	BGG	64.4	71.2	1	1	58	93.6	16.03
SMCJ60A-T	SMCJ60CA-T	GGK	BGK	66.7	73.7	1	1	60	96.8	15.5
SMCJ64A-T	SMCJ64CA-T	GGM	BGM	71.1	78.6	1	1	64	103	14.56
SMCJ70A-T	SMCJ70CA-T	GGP	BGP	77.8	86	1	1	70	113	13.27
SMCJ75A-T	SMCJ75CA-T	GGR	BGR	83.3	92.1	1	1	75	121	12.4
SMCJ78A-T	SMCJ78CA-T	GGT	BGT	86.7	95.8	1	1	78	126	11.9
SMCJ80A-T	SMCJ80CA-T	GGB	BGB	88.8	97.6	1	1	80	129.6	11.57
SMCJ85A-T	SMCJ85CA-T	GGV	BGV	94.4	104	1	1	85	137	10.95
SMCJ90A-T	SMCJ90CA-T	GGX	BGX	100	111	1	1	90	146	10.27
SMCJ100A-T	SMCJ100CA-T	GGZ	BGZ	111	123	1	1	100	162	9.26
SMCJ110A-T	SMCJ110CA-T	GHE	BHE	122	135	1	1	110	177	8.47
SMCJ120A-T	SMCJ120CA-T	GHG	BHG	133	147	1	1	120	193	7.77
SMCJ130A-T	SMCJ130CA-T	GHK	BHK	144	159	1	1	130	209	7.18
SMCJ140A-T	SMCJ140CA-T	GHB	BHB	155	171	1	1	140	226.8	6.61
SMCJ150A-T	SMCJ150CA-T	GHM	BHM	167	185	1	1	150	243	6.17
SMCJ160A-T	SMCJ160CA-T	GHP	BHP	178	197	1	1	160	259	5.79
SMCJ170A-T	SMCJ170CA-T	GHR	BHR	189	209	1	1	170	275	5.45
SMCJ180A-T	SMCJ180CA-T	GHT	BHT	200	220	1	1	180	291.6	5.14
SMCJ190A-T	SMCJ190CA-T	GHV	BHV	211	232	1	1	190	307.8	4.87
SMCJ200A-T	SMCJ200CA-T	GHW	BHW	224	247	1	1	200	324	4.6
SMCJ220A-T	SMCJ220CA-T	GHX	BHX	246	272	1	1	220	356	4.2
SMCJ250A-T	SMCJ250CA-T	GHZ	BHZ	279	309	1	1	250	405	3.7
SMCJ300A-T	SMCJ300CA-T	GJE	BJE	335	371	1	1	300	486	3.1
SMCJ350A-T	SMCJ350CA-T	GJG	BJG	391	432	1	1	350	567	2.6
SMCJ400A-T	SMCJ400CA-T	GJK	BJK	447	494	1	1	400	648	2.3
SMCJ440A-T	SMCJ440CA-T	GJM	BJM	492	543	1	1	440	713	2.1

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

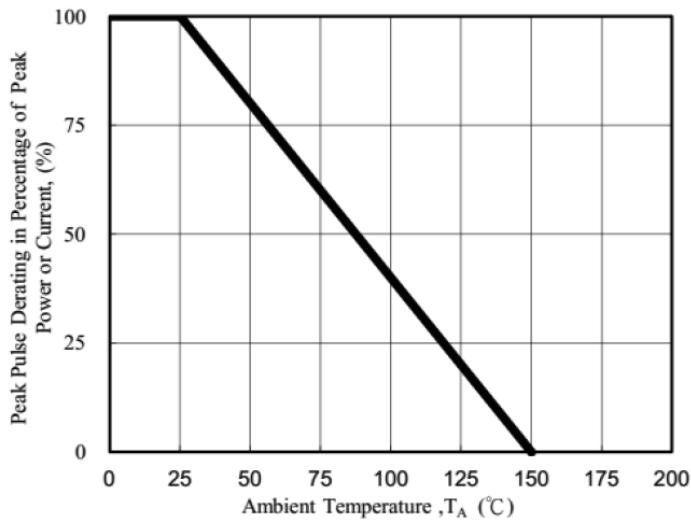


Fig 1. Pulse Derating Curve

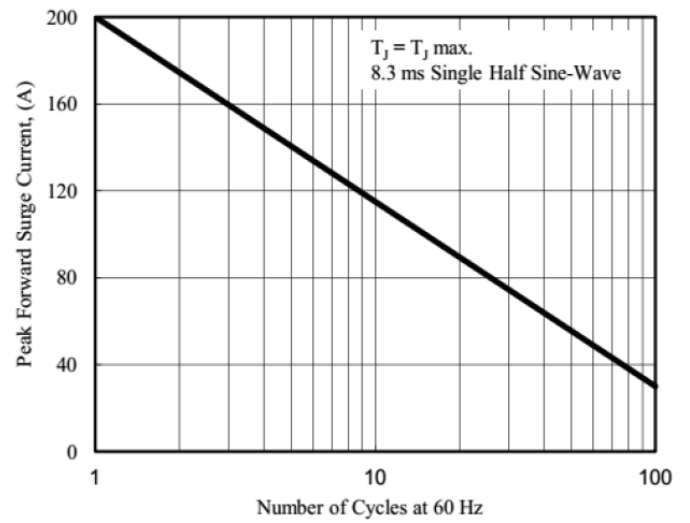


Fig 2. Maximum Non-Repetitive Surge Current

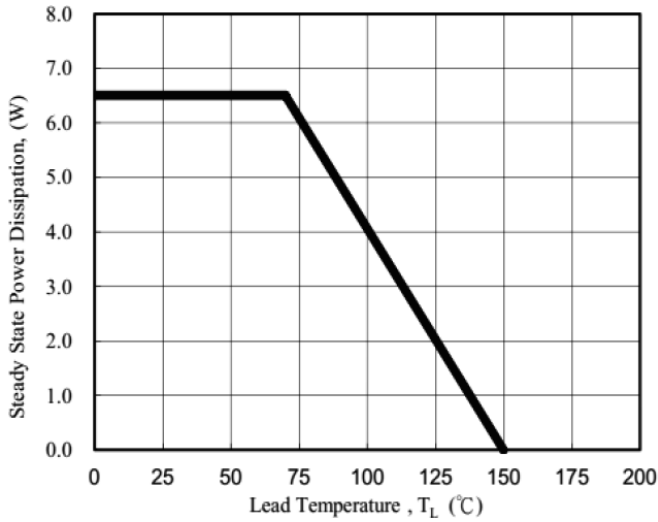


Fig 3. Steady State Power Derating Curve

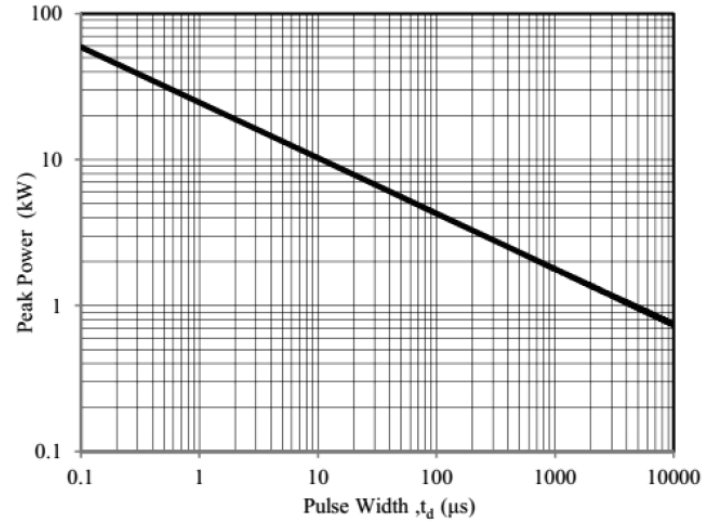


Fig 4. Peak Pulse Power Rating Curve

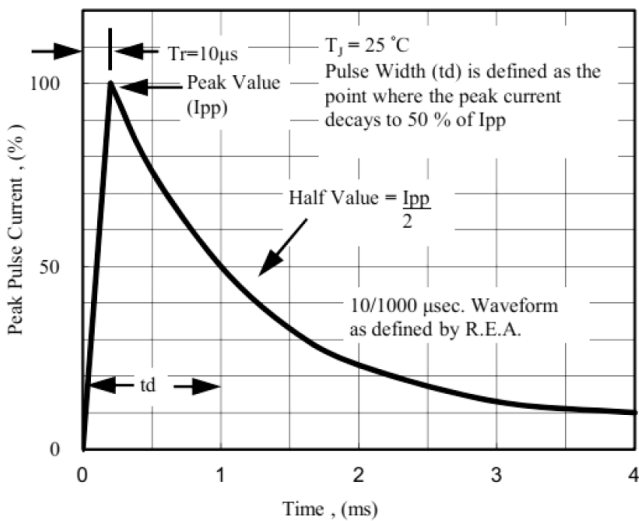


Fig 5. Pulse Waveform

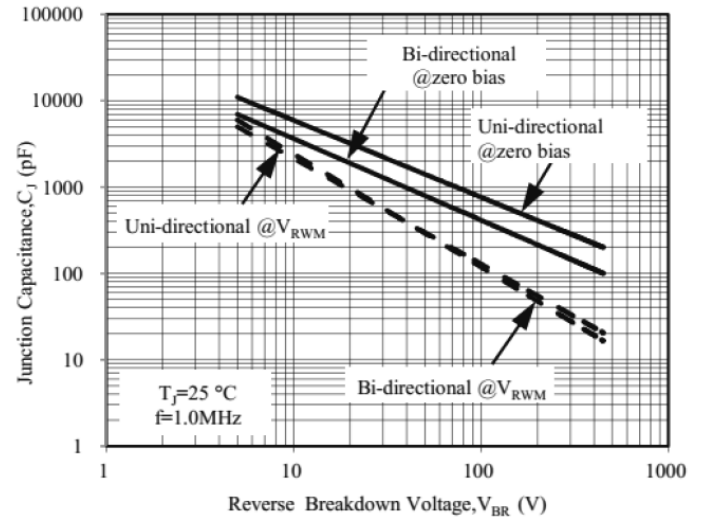
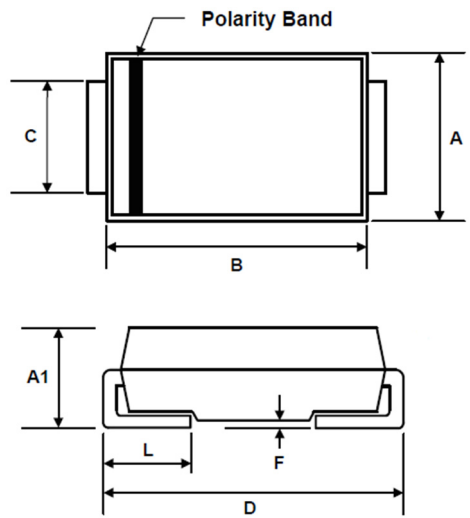
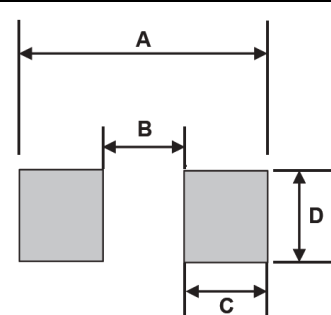


Fig 6. Typical Junction Capacitance

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