

1500W Surface Mount Transient Voltage Suppressor

(Pb) Lead(Pb)-Free

Features:

- * For surface mounted applications in order to optimize board space
- * Low profile package
- * Built-in strain relief
- * Glass passivated junction
- * Low inductance
- * Excellent clamping capability
- * Repetition Rate(duty cycle):0.05%
- * Fast response time: typically less than 1.0ps from 0 Volts to BV min
- * Typical IR less than 1μA above 10V
- * High temperature soldering: 250°C/10 seconds at terminals
- * Plastic package has Underwriters Laboratory Flammability 94V-O

Mechanical Data:

- * MECHANICAL DATA
- * Case: JEDEC DO214AB. Molded plastic over glass passivated junction
- * Terminal: Solder plated, solderable per MIL-STD-750, Method 2026
- * Polarity: Color band denotes positive end (cathode) except Bidirectional
- * Standard Packaging: 16mm tape(EIA STD RS-481)
- * Weight: 0.007ounce, 0.21gram

DEVICES FOR BIPOLAR APPLICATION:

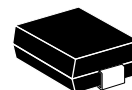
For Bidirectional use C or CA Suffix for types SMCJ5.0 thru types SMCJ170(e.g. SMCJ5.0 , SMCJ170CA)
Electrical characteristics apply in both directions

VOLTAGE

5.0 to 440 Volts

Peak Pulse Power

1500 Watt



SMC(DO-214AB)

MAXIMUM RATINGS AND CHARACTERISTICS(T_A=25°C Unless otherwise specified)

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000μs waveform (Note 1,FIG.1)	P _{PPM}	1500(Min)	W
Peak Pulse Current of on 10/1000μs waveform (Note 1,FIG.3)	I _{PPM}	SEE TABLE 1	A
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load,(JEDEC Method) (Note 3)	I _{FSM}	200	A
Operating junction Temperature Range	T _J	+150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

Notes :

1. Non-repetitive current pulse , per Fig. 3 and derated above T_A= 25°C per Fig.2.
2. Mounted on 8.0mm x 8.0mm Copper Pads to each terminal.
3. 8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

1.5SMCJ PART NUMBER		DEVICE MARKING CODE		REVERS E STAND- OFF VOLTAGE V _{RWM} (V)	BREAKDOW N VOLTAGE V _{BR} (V) MIN.@I _T	BREAKDOW N VOLTAGE V _{BR} (V) MAX.@I _T	TEST CURRENT I _T (mA)	MAXIMUN CLAMPING VOLTAGE @I _{pp} V _c (V)	PEAK PULSE CURREN T I _{pp} (A)	REVERS E LEAKAGE @V _{RWM} I _R (μA)
UNI- POLAR	BI-POLAR	UNI	BI							
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	5.0	6.40	7.00	10	9.2	163.0	800
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	6.0	6.67	7.37	10	10.3	145.7	800
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	6.5	7.22	7.98	10	11.2	134.0	500
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	7.0	7.78	8.60	10	12.0	125.0	200
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	7.5	8.33	9.21	1	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8.0	8.89	9.83	1	13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	8.5	9.44	10.40	1	14.4	104.2	20
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	9.0	10.00	11.10	1	15.4	97.4	10
SMCJ10A	SMCJ10CA	GDX	BDX	10.0	11.10	12.30	1	17.0	88.3	5
SMCJ11A	SMCJ11CA	GDZ	BDZ	11.0	12.20	13.50	1	18.2	82.5	5
SMCJ12A	SMCJ12CA	GEE	BEE	12.0	13.30	14.70	1	19.9	75.4	5
SMCJ13A	SMCJ13CA	GEG	BEG	13.0	14.40	15.90	1	21.5	69.8	5
SMCJ14A	SMCJ14CA	GEK	GEK	14.0	15.60	17.20	1	23.2	64.7	5
SMCJ15A	SMCJ15CA	GEM	GEM	15.0	16.70	18.50	1	24.4	61.5	5
SMCJ16A	SMCJ16CA	GEP	BEP	16.0	17.80	19.70	1	26.0	57.7	5
SMCJ17A	SMCJ17CA	GER	BER	17.0	18.90	20.90	1	27.6	54.4	5
SMCJ18A	SMCJ18CA	GET	BET	18.0	20.00	22.10	1	29.2	51.4	5
SMCJ20A	SMCJ20CA	GEV	BEV	20.0	22.20	24.50	1	32.4	46.3	5
SMCJ22A	SMCJ22CA	GEX	BEX	22.0	24.40	26.90	1	35.5	42.3	5
SMCJ24A	SMCJ24CA	GEZ	BEZ	24.0	26.70	29.50	1	38.9	38.6	5
SMCJ26A	SMCJ26CA	GFE	BF E	26.0	28.90	31.90	1	42.1	35.7	5
SMCJ28A	SMCJ28CA	GFG	BF G	28.0	31.10	34.40	1	45.4	33.1	5
SMCJ30A	SMCJ30CA	GFK	BF K	30.0	33.30	36.80	1	48.4	31.0	5
SMCJ33A	SMCJ33CA	GFM	BF M	33.0	36.70	40.60	1	53.3	28.2	5
SMCJ36A	SMCJ36CA	GFP	BF P	36.0	40.00	44.20	1	58.1	25.9	5
SMCJ40A	SMCJ40CA	GFR	BF R	40.0	44.40	49.10	1	64.5	23.3	5
SMCJ43A	SMCJ43CA	GFT	BF T	43.0	47.80	52.80	1	69.4	21.7	5
SMCJ45A	SMCJ45CA	GFV	BF V	45.0	50.00	55.30	1	72.7	20.6	5
SMCJ48A	SMCJ48CA	GFX	BF X	48.0	53.30	58.90	1	77.4	19.4	5
SMCJ51A	SMCJ51CA	GFZ	BF Z	51.0	56.70	62.70	1	82.4	18.2	5
SMCJ54A	SMCJ54CA	GGE	BGE	54.0	60.00	66.30	1	87.1	17.3	5
SMCJ58A	SMCJ58CA	GGG	BGG	58.0	64.40	71.20	1	93.6	16.1	5
SMCJ60A	SMCJ60CA	GGK	BG K	60.0	66.70	73.70	1	96.8	15.5	5
SMCJ64A	SMCJ64CA	GGM	BG M	64.0	71.10	78.60	1	103.0	14.6	5
SMCJ70A	SMCJ70CA	GGP	BG P	70.0	77.80	86.00	1	113.0	13.3	5
SMCJ75A	SMCJ75CA	GGR	BG R	75.0	83.30	92.10	1	121.0	12.4	5
SMCJ78A	SMCJ78CA	GGT	BG T	78.0	86.70	95.80	1	126.0	11.9	5
SMCJ85A	SMCJ85CA	GGV	BG V	85.0	94.40	104.00	1	137.0	11.0	5
SMCJ90A	SMCJ90CA	GGX	BG X	90.0	100.00	111.00	1	146.0	10.3	5
SMCJ100A	SMCJ100CA	GGZ	BG Z	100.0	111.00	123.00	1	162.0	9.3	5
SMCJ110A	SMCJ110CA	GHE	BHE	110.0	122.00	135.00	1	177.0	8.5	5
SMCJ120A	SMCJ120CA	GHG	BHG	120.0	133.00	147.00	1	193.0	7.8	5
SMCJ130A	SMCJ130CA	GHK	BHK	130.0	144.00	159.00	1	209.0	7.2	5
SMCJ150A	SMCJ150CA	GHM	BHM	150.0	167.00	185.00	1	243.0	6.2	5
SMCJ160A	SMCJ160CA	GHP	BHP	160.0	178.00	197.00	1	259.0	5.8	5
SMCJ170A	SMCJ170CA	GHR	BHR	170.0	189.00	209.00	1	275.0	5.5	5
SMCJ180A	SMCJ180CA	GHT	BHT	180.0	201.00	222.00	1	292.0	5.1	5
SMCJ200A	SMCJ200CA	GHV	BHV	200.0	224.00	247.00	1	324.0	4.6	5
SMCJ220A	SMCJ220CA	GHX	BHX	220.0	246.00	272.00	1	356.0	4.2	5
SMCJ250A	SMCJ250CA	GHZ	BHZ	250.0	279.00	309.00	1	405.0	3.7	5
SMCJ300A	SMCJ300CA	GJE	BJE	300.0	335.00	371.00	1	486.0	3.1	5
SMCJ350A	SMCJ350CA	GJG	BJG	350.0	391.00	432.00	1	567.0	2.6	5
SMCJ400A	SMCJ400CA	GJK	BJK	400.0	447.00	494.00	1	648.0	2.3	5
SMCJ440A	SMCJ440CA	GJM	BJM	440.0	492.00	543.00	1	713.0	2.1	5

For bidirectional type having V_{rwm} of 10 volts and less, the IR limit is double.

For parts without A , the V_{BR} is ± 10%

Ratings and Characteristic Curves $T_A=25^\circ\text{C}$ unless otherwise noted

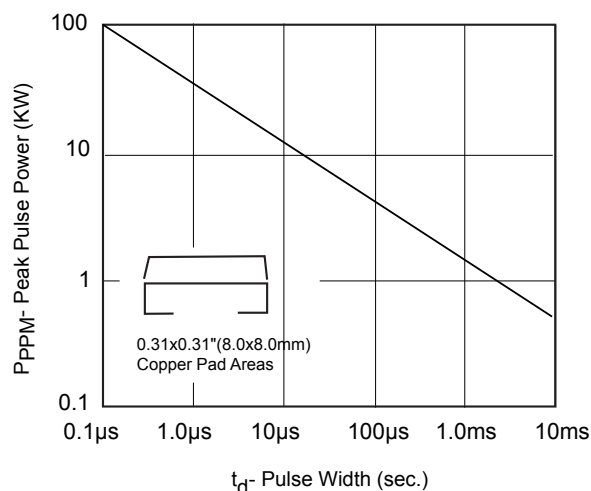


Fig.1 Peak Pulse Power Rating

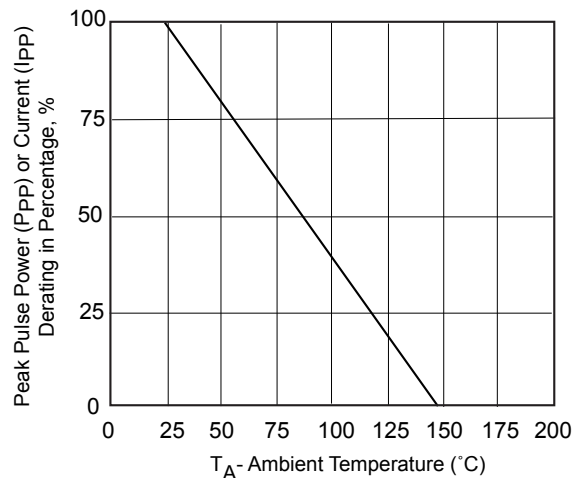


Fig.2 Pulse Derating Curve

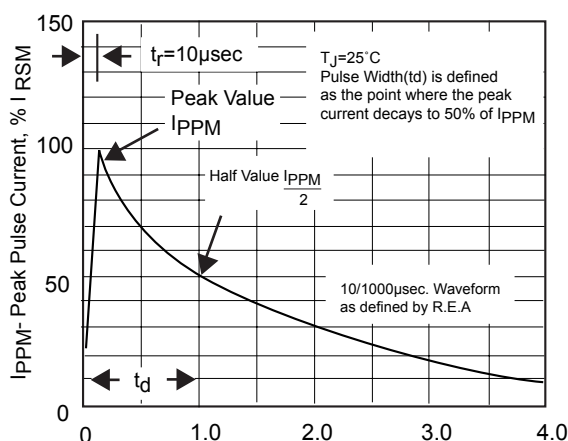


Fig.3 Pulse Waveform

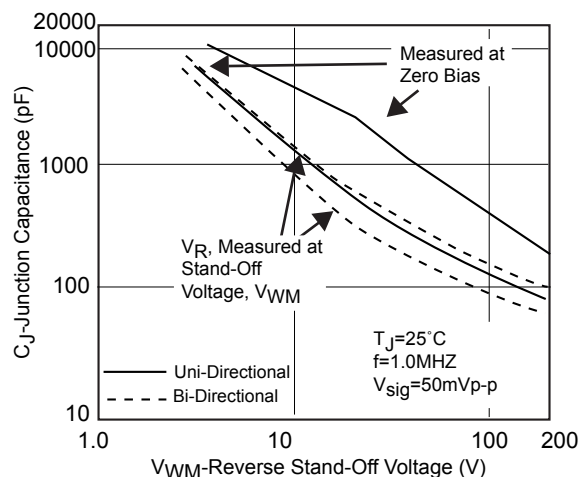


Fig.4 Typical Junction Capacitance

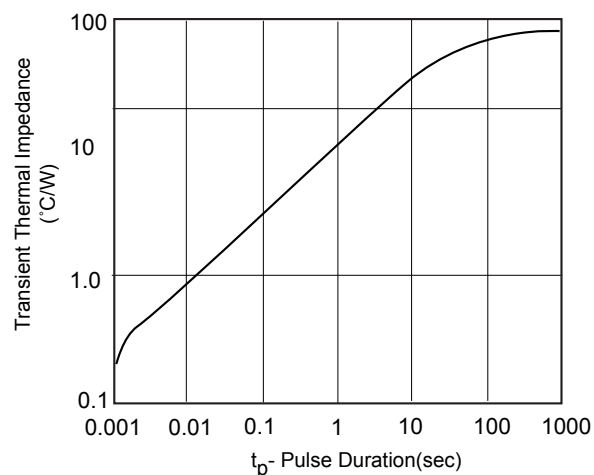


Fig.5 Typ. Transient Thermal Impedance

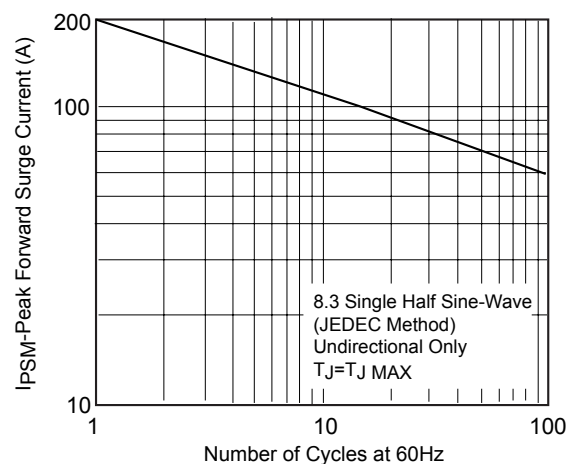
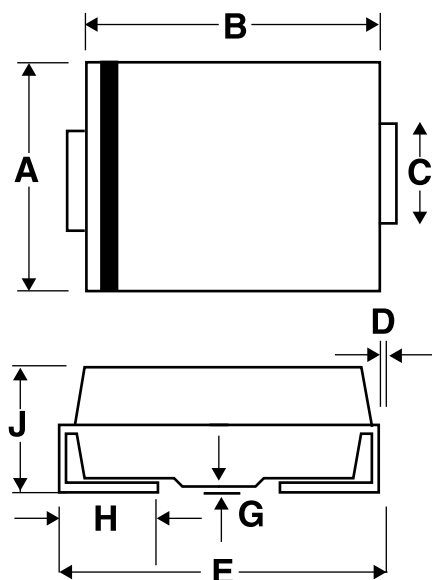


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

SMC Outline Dimension

Unit:mm



SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62