

# 5.0SMDJ11(C)A THRU 5.0SMDJ440(C)A

## 5000W Surface Mount Transient Voltage Suppressors

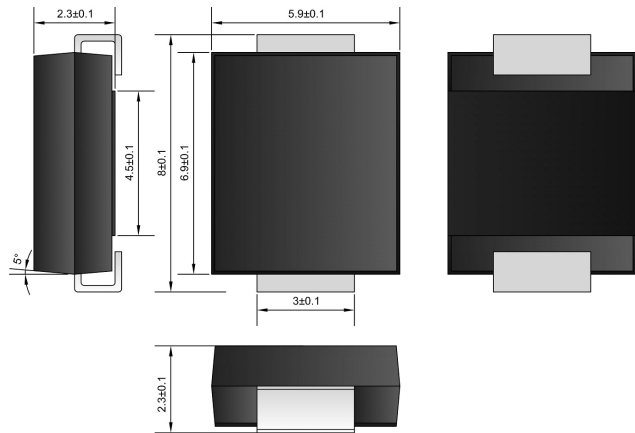
### ■ Features

- 5000W peak pulse power capability with a 10/1000us waveform, repetition rate (duty cycle): 0.01%.
- Excellent clamping capability.
- Low incremental surge resistance.
- Glass passivated chip junction.
- Ultra high-speed switching.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

### ■ Mechanical data

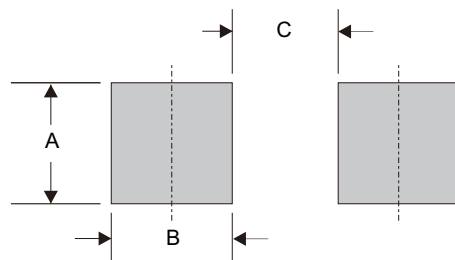
- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AB / SMC
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.007 ounce, 0.226 gram

### ■ Outline SMC(DO-214AB)



Dimensions in millimeters

### ■ SMC foot print



A	B	C
0.132 (3.30)	0.098 (2.50)	0.176 (4.40)

Dimensions in inches and (millimeters)

### ■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	5.0SMCJ series	UNIT
Peak power dissipation	with a 10/1000us waveform, note 1	$P_{PPM}$	5000	W
Peak forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method), note 2	$I_{FSM}$	300	A
Steady state power dissipation	on infinite heatsink at $T_L = 75^\circ\text{C}$	$P_D$	6.5	W
Peak pulse current	with a 10/1000us waveform, note 1	$I_{PPM}$	See Table 1	A
Maximum instantaneous forward voltage	at 100A for unidirectional only, note 3	$V_F$	3.5 / 5.0	V
Operating temperature		$T_J$	-55 ~ +150	°C
Storage temperature		$T_{STG}$	-55 ~ +150	°C

Notes : 1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_a=25^\circ\text{C}$  per Fig. 2.  
 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  $V_{BR} > 201\text{V}$ .

## RATINGS AND CHARACTERISTIC CURV 5.0SMDJ11(C)A THRU 5.0SMDJ440(C)A

■ Electrical characteristics

table 1

Part No.	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Peak Forward Surge Current	Maximum Clamping Voltage @ $I_{PP}$		Maximum Leakage Current	Marking Code	
	$V_{RWM}$	$V_{BRMin}$	$V_{BRMax}$	$I_T$	$I_{FSM}$	$V_C$	$I_{PP}$	$I_R@V_{RWM}$	UNI	BI
	Volts	Volts	Volts	mA	A	Volts	A	uA		
5.0SMDJ11(C)A	11.0	12.20	13.50	10.0	300	18.2	274.7	500	5PDX	5BDX
5.0SMDJ12(C)A	12.0	13.30	14.70	10.0	300	19.9	251.3	500	5PDZ	5BDZ
5.0SMDJ13(C)A	13.0	14.40	15.90	10.0	300	21.5	232.6	200	5PEE	5BEE
5.0SMDJ14(C)A	14.0	15.60	17.20	10.0	300	23.2	215.5	200	5PEG	5BEG
5.0SMDJ15(C)A	15.0	16.70	18.50	1.0	300	24.4	204.9	100	5PEK	5BEK
5.0SMDJ16(C)A	16.0	17.80	19.70	1.0	300	26.0	192.3	50	5PEM	5BEM
5.0SMDJ17(C)A	17.0	18.90	20.90	1.0	300	27.6	181.2	20	5PEP	5BEP
5.0SMDJ18(C)A	18.0	20.00	22.10	1.0	300	29.2	171.2	10	5PER	5BER
5.0SMDJ19(C)A	19.0	21.10	23.30	1.0	300	30.8	162.4	10	5PET	5BET
5.0SMDJ20(C)A	20.0	22.20	24.50	1.0	300	32.4	154.3	5	5PEV	5BEV
5.0SMDJ22(C)A	22.0	24.40	26.90	1.0	300	35.5	140.8	5	5PEX	5BEX
5.0SMDJ24(C)A	24.0	26.70	29.50	1.0	300	38.9	128.5	2	5PEZ	5BEZ
5.0SMDJ26(C)A	26.0	28.90	31.90	1.0	300	42.1	118.8	2	5PFE	5BFE
5.0SMDJ28(C)A	28.0	31.10	34.40	1.0	300	45.4	110.1	2	5PFG	5BFG
5.0SMDJ30(C)A	30.0	33.30	36.80	1.0	300	48.4	103.3	2	5PFK	5BFK
5.0SMDJ33(C)A	33.0	36.70	40.60	1.0	300	53.3	93.8	2	5PFM	5BFM
5.0SMDJ36(C)A	36.0	40.00	44.20	1.0	300	58.1	86.1	2	5PFP	5BFP
5.0SMDJ40(C)A	40.0	44.40	49.10	1.0	300	64.5	77.5	2	5PFR	5BFR
5.0SMDJ43(C)A	43.0	47.80	52.80	1.0	300	69.4	72.0	2	5PFT	5BFT
5.0SMDJ45(C)A	45.0	50.00	55.30	1.0	300	72.7	68.8	2	5PFV	5BFV
5.0SMDJ48(C)A	48.0	53.30	58.90	1.0	300	77.4	64.6	2	5PFX	5BFX
5.0SMDJ51(C)A	51.0	56.70	62.70	1.0	300	82.4	60.7	2	5PFZ	5BFZ
5.0SMDJ54(C)A	54.0	60.00	66.30	1.0	300	87.1	57.4	2	5PGE	5BGE
5.0SMDJ58(C)A	58.0	64.40	71.20	1.0	300	93.6	53.4	2	5PGG	5BGG
5.0SMDJ60(C)A	60.0	66.70	73.70	1.0	300	96.8	51.7	2	5PGK	5BGK
5.0SMDJ64(C)A	64.0	71.10	78.60	1.0	300	103.0	48.5	2	5PGM	5BGM
5.0SMDJ70(C)A	70.0	77.80	86.00	1.0	300	113.0	44.2	2	5PGP	5BGP

## RATINGS AND CHARACTERISTIC CURV 5.0SMDJ11(C)A THRU 5.0SMDJ440(C)A

■ Electrical characteristics

Part No.	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Peak Forward Surge Current	Maximum Clamping Voltage @ $I_{PP}$		Maximum Leakage Current	Marking Code	
	$V_{RWM}$	$V_{BR Min}$	$V_{BR Max}$	$I_T$	$I_{FSM}$	$V_C$	$I_{PP}$	$I_R @ V_{RWM}$	UNI	BI
	Volts	Volts	Volts	mA	A	Volts	A	uA		
5.0SMDJ75(C)A	75.0	83.30	92.10	1.0	300	121.0	41.3	2	5PGR	5BGR
5.0SMDJ78(C)A	78.0	86.70	95.80	1.0	300	126.0	39.7	2	5PGT	5BGT
5.0SMDJ80(C)A	80.0	88.80	97.60	1.0	300	129.6	38.6	2	5PGB	5BGB
5.0SMDJ85(C)A	85.0	94.40	104.00	1.0	300	137.0	36.5	2	5PGV	5BGV
5.0SMDJ90(C)A	90.0	100.00	111.00	1.0	300	146.0	34.2	2	5PGX	5BGX
5.0SMDJ100(C)A	100.0	111.00	123.00	1.0	300	162.0	30.9	2	5PGZ	5BGZ
5.0SMDJ110(C)A	110.0	122.00	135.00	1.0	300	177.0	28.2	2	5PHE	5BHE
5.0SMDJ120(C)A	120.0	133.00	147.00	1.0	300	193.0	25.9	2	5PHG	5BHG
5.0SMDJ130(C)A	130.0	144.00	159.00	1.0	300	209.0	23.9	2	5PHK	5BHK
5.0SMDJ140(C)A	140.0	155.00	171.00	1.0	300	226.8	22.0	2	5PHB	5BHB
5.0SMDJ150(C)A	150.0	167.00	185.00	1.0	300	243.0	20.6	2	5PHM	5BHM
5.0SMDJ160(C)A	160.0	178.00	197.00	1.0	300	259.0	19.3	2	5PHP	5BHP
5.0SMDJ170(C)A	170.0	189.00	209.00	1.0	300	275.0	18.2	2	5PHR	5BHR
5.0SMDJ180(C)A	180.0	200.00	220.00	1.0	300	291.6	17.1	2	5PHT	5BHT
5.0SMDJ190(C)A	190.0	211.00	232.00	1.0	300	307.8	16.2	2	5PHV	5BHV
5.0SMDJ200(C)A	200.0	224.00	247.00	1.0	300	324.0	15.4	2	5PHW	5BHW
5.0SMDJ220(C)A	220.0	246.00	272.00	1.0	300	356.0	14.0	2	5PHX	5BHX
5.0SMDJ250(C)A	250.0	279.00	309.00	1.0	300	405.0	12.3	2	5PHZ	5BHZ
5.0SMDJ300(C)A	300.0	335.00	371.00	1.0	300	486.0	10.3	2	5PJE	5BJE
5.0SMDJ350(C)A	350.0	391.00	432.00	1.0	300	567.0	8.8	2	5PJG	5BJG
5.0SMDJ400(C)A	400.0	447.00	494.00	1.0	300	648.0	7.7	2	5PJK	5BJK
5.0SMDJ440(C)A	440.0	492.00	543.00	1.0	300	713.0	7.0	2	5PJM	5BJM

Note 1. Suffix 'C' denotes bi-directional devices. Suffix 'A' denotes 5% tolerance devices, no suffix denotes 10% tolerance devices.  
 2. For bi-directional types having  $V_{RWM}$  of 20 volts and less, the  $I_R$  limit is doubled.

■ Rating and characteristic curves

Fig.1 - Peak Pulse Power Rating Curve

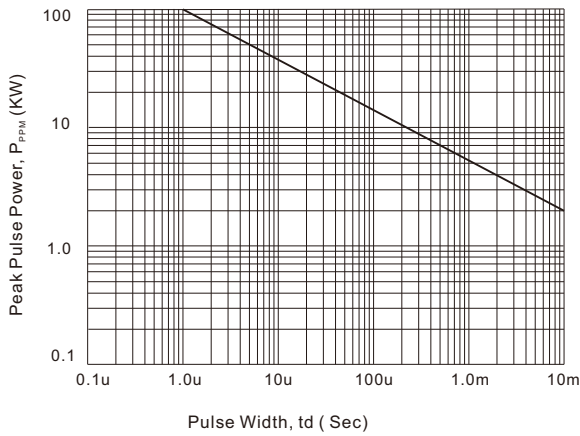


Fig.2 - Pulse Derating Curve

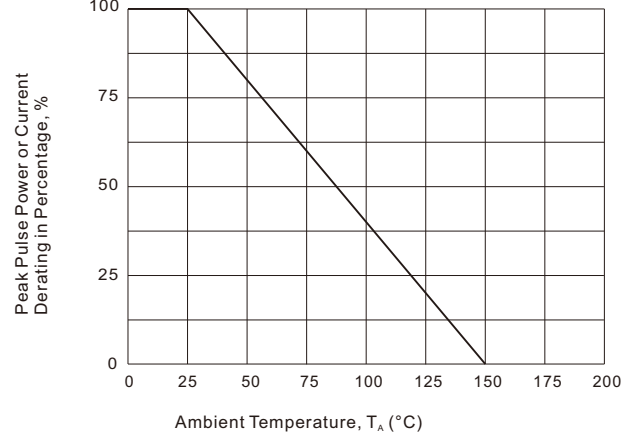


Fig.3 - Pulse Waveform

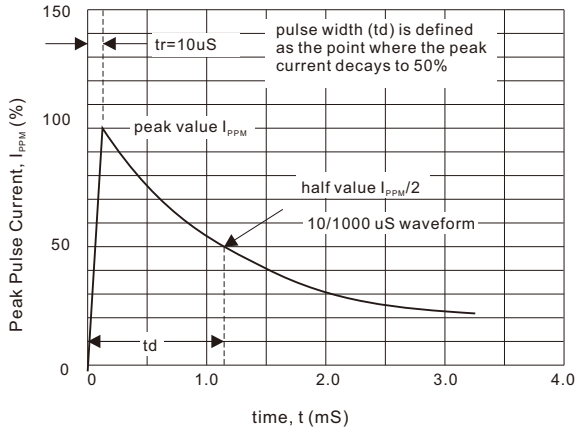


Fig.4 - Typical Junction Capacitance

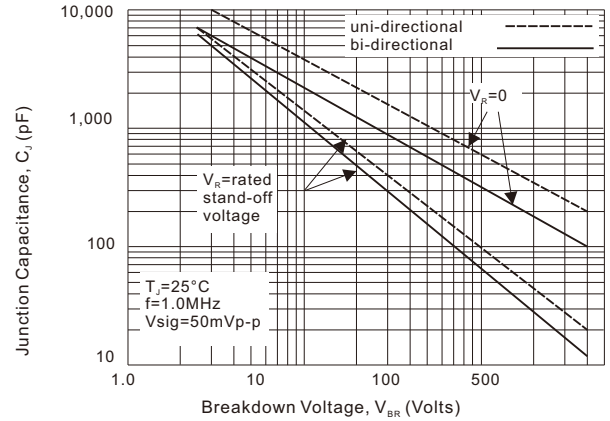


Fig.5 - Steady State Power Derating Curve

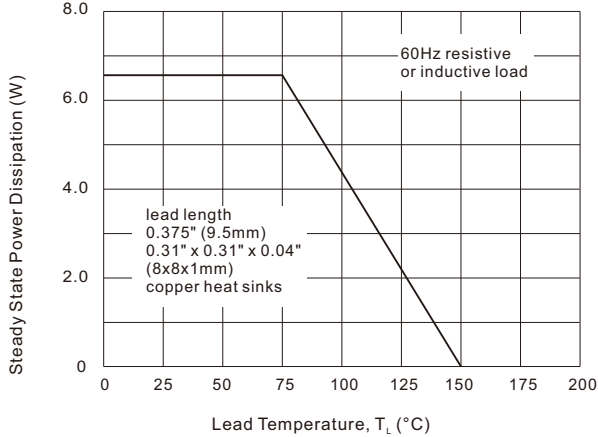


Fig.6 - Maximum Non-Repetitive Forward Surge Current

