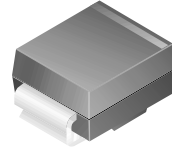


# 600W Transient Voltage Suppressors

# SMBJ5V0(C)A - SMBJ170(C)A iS Electronics

## Features

- Glass passivated junction.
- 600W Peak Pulse Power capability on 10/1000  $\mu$ s waveform.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time; typically less than 1.0 ps from 0 volts to BV for unidirectional and 5.0 ns for bidirectional.
- Typical  $I_R$  less than 1.0  $\mu$ A above 10V.



### SMB/DO-214AA

COLOR BAND DENOTES CATHODE ON UNIDIRECTIONAL DEVICES ONLY. NO COLOR BAND ON BIDIRECTIONAL DEVICES.

## DEVICES FOR BIPOLAR APPLICATIONS

Bidirectional types use CA suffix.  
Electrical Characteristics apply in both directions.

### Absolute Maximum Ratings\* $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$P_{PPM}$	Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform	600	W
$I_{PPM}$	Peak Pulse Current on 10/1000 $\mu$ s waveform	see table	A
$I_{FSM}$	Non-repetitive Peak Forward Surge Current superimposed on rated load (JEDEC method) (Note 1)	100	A
$T_{stg}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature	+ 150	$^\circ\text{C}$

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Note 1: Measured on 8.3 ms single half-sine wave or equivalent square wave; Duty cycle = 4 pulses per minute maximum.

Electrical Characteristics @  $T_A = 25^\circ\text{C}$  unless otherwise noted

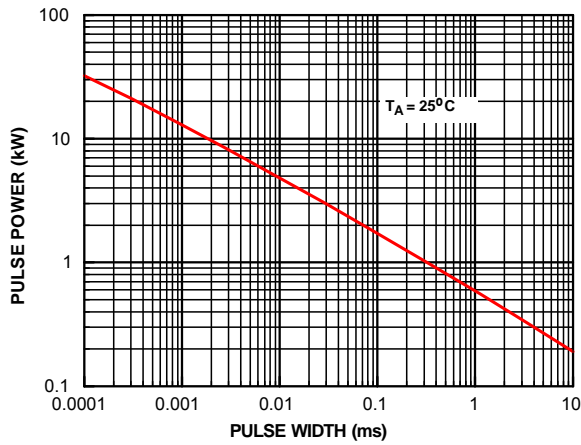
Uni-directional Bi-directional (C) Device 型号	Reverse Stand-off Voltage $V_{RWM}$ (V) 反向对峙电压	Breakdown Voltage $V_{BR}$ (V) 崩溃电压		Test Current $I_T$ (mA) 测试电流	Clamping Voltage @IPPM $V_C$ (V) 嵌位电压	Peak Pulse Current $I_{PPM}$ (A) 峰值脉冲电流	Reverse Leakage @ $V_{RWM}$ $I_R$ ( $\mu\text{A}$ )** 反向漏电流
		min	max				
SMBJ5V0(C)A	5.0	6.40	7.0	10	9.2	65.2	800
SMBJ6V0(C)A	6.0	6.67	7.37	10	10.3	58.3	800
SMBJ6V5(C)A	6.5	7.22	7.98	10	11.2	53.6	500
SMBJ7V0(C)A	7.0	7.78	8.60	10	12.0	50.0	200
SMBJ7V5(C)A	7.5	8.33	9.21	1	12.9	46.5	100
SMBJ8V0(C)A	8.0	8.89	9.83	1	13.6	44.1	50
SMBJ8V5(C)A	8.5	9.44	10.4	1	14.4	41.7	20
SMBJ9V0(C)A	9.0	10.0	11.1	1	15.4	39.0	10
SMBJ10(C)A	10	11.1	12.8	1	17.0	35.3	5
SMBJ11(C)A	11	12.2	13.5	1	18.2	33.0	5
SMBJ12(C)A	12	13.3	14.7	1	19.9	30.2	5
SMBJ13(C)A	13	14.4	15.9	1	21.5	27.9	5
SMBJ14(C)A	14	15.6	17.2	1	23.2	25.9	5
SMBJ15(C)A	15	16.7	18.5	1	24.4	24.6	5
SMBJ16(C)A	16	17.8	19.7	1	26.0	23.1	5
SMBJ17(C)A	17	18.9	20.9	1	27.6	21.7	5
SMBJ18(C)A	18	20.0	22.1	1	29.2	20.5	5
SMBJ20(C)A	20	22.2	24.5	1	32.4	18.5	5
SMBJ22(C)A	22	24.4	26.9	1	35.5	16.9	5
SMBJ24(C)A	24	26.7	29.5	1	38.9	15.4	5
SMBJ26(C)A	26	28.9	31.9	1	42.1	14.3	5
SMBJ28(C)A	28	31.1	34.4	1	45.4	13.2	5
SMBJ30(C)A	30	33.3	36.8	1	48.4	12.4	5
SMBJ33(C)A	33	36.7	40.6	1	53.3	11.3	5
SMBJ36(C)A	36	40.0	44.2	1	58.1	10.3	5
SMBJ40(C)A	40	44.4	49.1	1	64.5	9.3	5
SMBJ43(C)A	43	47.8	52.8	1	69.4	8.6	5
SMBJ45(C)A	45	50.0	55.3	1	72.7	8.3	5
SMBJ48(C)A	48	53.3	58.9	1	77.4	7.8	5
SMBJ51(C)A	51	56.7	62.7	1	82.4	7.3	5
SMBJ54(C)A	54	60.0	66.3	1	87.1	6.9	5
SMBJ58(C)A	58	64.4	71.2	1	93.6	6.4	5
SMBJ60(C)A	60	66.7	73.7	1	96.8	6.2	5
SMBJ64(C)A	64	71.1	78.6	1	103.0	5.8	5
SMBJ70(C)A	70	77.8	86.0	1	113.0	5.3	5
SMBJ75(C)A	75	83.3	92.1	1	121.0	5.0	5
SMBJ78(C)A	78	86.7	95.8	1	126.0	4.8	5
SMBJ85(C)A	85	94.4	104.0	1	137.0	4.4	5
SMBJ90(C)A	90	100.0	111.0	1	146.0	4.1	5
SMBJ100(C)A	100	111.0	123.0	1	162.0	3.7	5
SMBJ110(C)A	110	122.0	135.0	1	177.0	3.4	5
SMBJ120(C)A	120	133.0	147.0	1	193.0	3.1	5
SMBJ130(C)A	130	144.0	159.0	1	209.0	2.9	5
SMBJ150(C)A	150	167.0	185.0	1	243.0	2.5	5
SMBJ160(C)A	160	178.0	197.0	1	259.0	2.3	5
SMBJ170(C)A	170	189.0	209.0	1	275.0	2.2	5

\* Color band denotes cathode on unidirectional devices only. No color band on bidirectional devices.

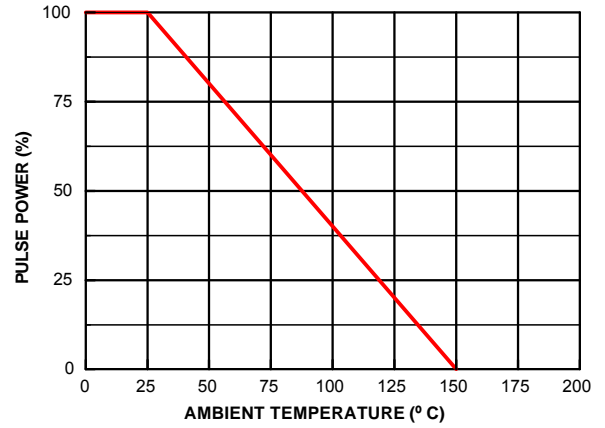
\*\* For bidirectional parts with  $V_{RWM} < 10\text{V}$ , the  $I_R$  max limit is doubled.



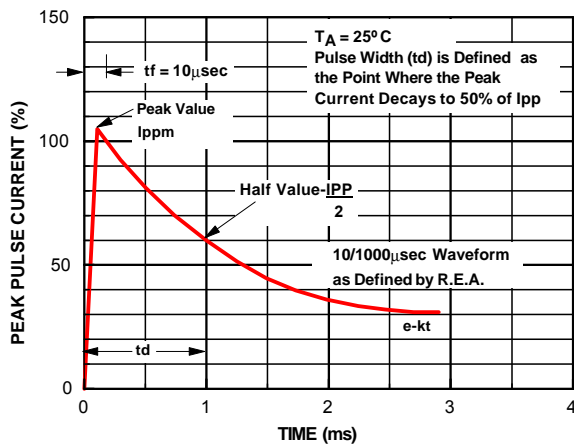
### Peak Pulse Power Rating Curve



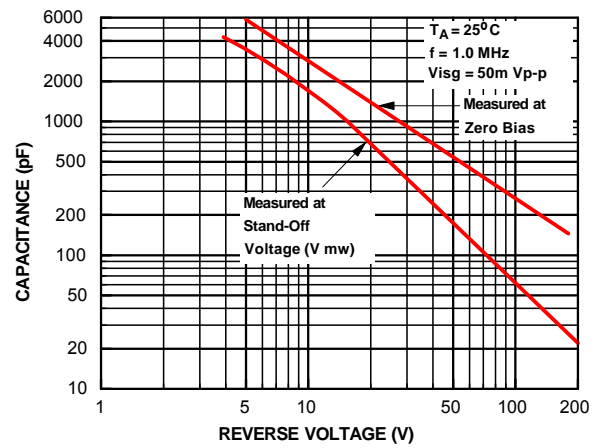
### Pulse Derating Curve



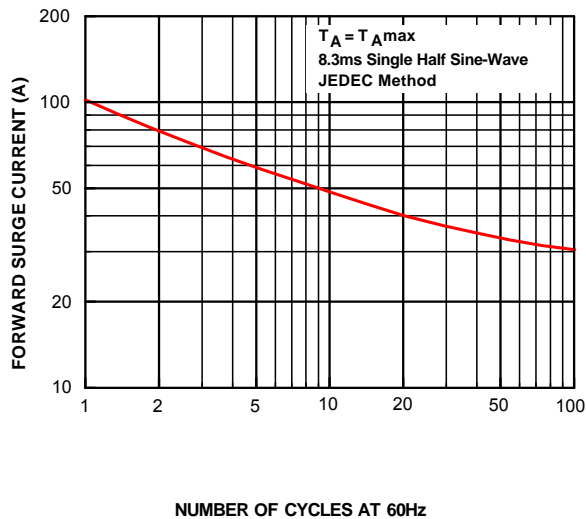
### Pulse Waveform



### Junction Capacitance



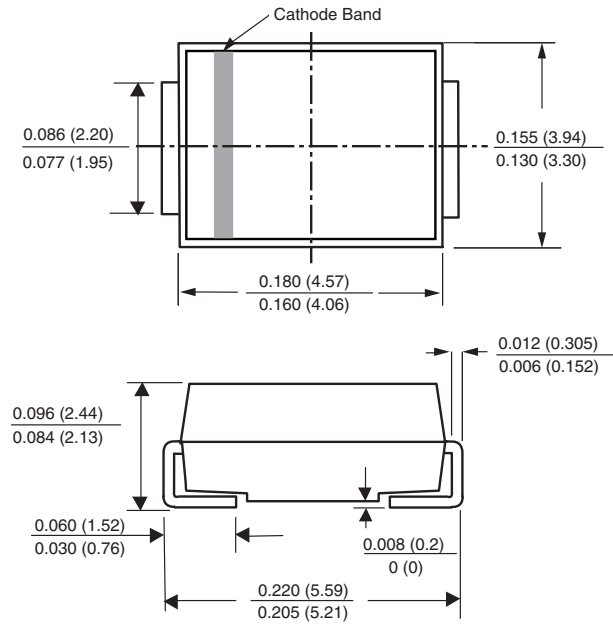
### Non-Repetitive Surge Current





**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-214AA (SMB-J-Bend)**



**Mounting Pad Layout**

