

Transient Voltage Suppressors (TVS) Data Sheet

● Description

The SMBJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events

● Features

- For surface mounted applications in order to optimize board space
- Low leakage
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- 3000W peak pulse power capability at 10/1000μs waveform
- Fast response time
- High Temperature soldering: 260°C /10 seconds at terminals
- Typical maximum temperature coefficient $\Delta V_{BR} = 0.1\% \times V_{BR}@25^{\circ}\text{C} \times \Delta T$
- Plastic package has Underwriters Laboratory Flammability 94V-0
- Matte tin lead-free Plated
- Meets MSL level 1, per J-STD-020
- Halogen free and RoHS compliant
- Whisker test is conducted based on JEDEC JESD201A per its table 4a and 4c
- IEC 61000-4-2 ESD 30KV(Air),30KV(contact)

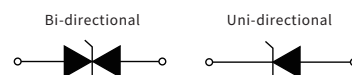
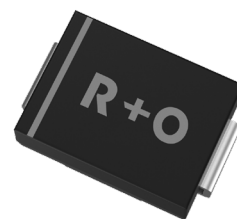
Breakdown Voltage

58 V

Peak Pulse Power

3000 W

DO-214AA(SMB)



● Applications

TVS devices are ideal for the protection of I/O interfaces, AC/DC power supply, Low frequency signal transmission line (RS232, RS485, etc.)

● Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	VALUE	SYMBOL
Peak Pulse Power Dissipation with a 10/1000μs waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	3000	W
Peak Pulse Current with a 10/1000μs waveform.(Note1, Fig.3)	I_{PP}	See Next Table	A
Power Dissipation on Infinite Heat Sink at Ta=75° C(Fig.5)	$P_{M(AV)}$	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3, Fig.6)	I_{FSM}	200	A
Operating junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C
Typical thermal resistance junction to lead	$R_{\theta J-L}$	15	°C /W
Typical thermal resistance junction to ambient	$R_{\theta J-A}$	75	°C /W

Note :

(1) Non-repetitive current pulse, per Fig. 3 and derated above Ta = 25°C per Fig. 2.

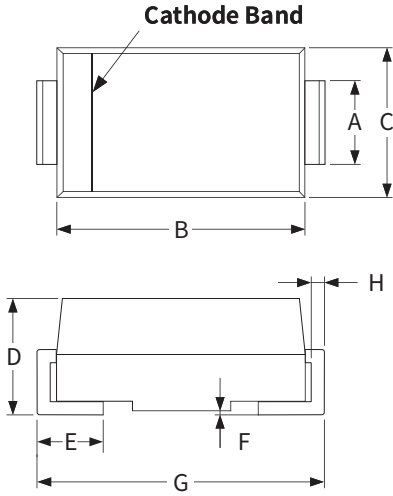
(2) Mounted on 5.0mm x 5.0mm Copper Pads to each terminal.

(3) 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

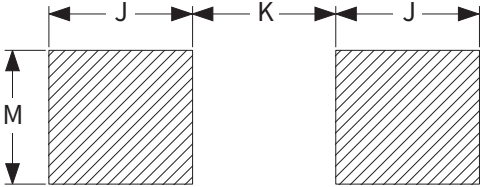
3.0SMBJ58CA

3000W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

Package Outline Dimensions (SMB/DO-214AA)

 Note: (1) Cathode Band: unidirectional only. (2) Bidirectional devices without this marking.	Symbol	Dimensions			
		Millimeters		Inches	
		Min.	Max.	Min.	Max.
	A	1.85	2.21	0.073	0.087
	B	4.25	4.85	0.167	0.191
	C	3.30	3.94	0.130	0.155
	D	2.15	2.65	0.085	0.104
	E	0.75	1.52	0.030	0.060
	F	-	0.203	-	0.008
	G	5.08	5.59	0.200	0.220
	H	0.15	0.31	0.006	0.012

Suggested Pad Layout

	Symbol	Dimensions			
		Millimeters		Inches	
		Min.	Max.	Min.	Max.
	M	2.26	-	0.089	-
	J	2.10	-	0.085	-
	K	-	2.74	-	0.107

Electrical Characteristics (Ta=25°C Unless otherwise specified)

Part Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} (V) @ I_T		Test Current	Maximum Clamping Voltage@ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}
Uni	Bi	Uni	Bi	V_{RWM} (V)	Min.	Max.	I_T (mA)	V_C (V)	I_{PP} (A)	I_R (μ A)
3.0SMBJ58A	3.0SMBJ58CA	58A	58CA	58	64.4	71.2	1	93.6	32.1	5

Note :
(1) Suffix 'A ' denotes 5% tolerance device.
(2) Add suffix ' CA ' after part number to specify Bi-directional devices.
(3) For Bi-Directional devices having VR of 12 volts and less, the IR limit is double.

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

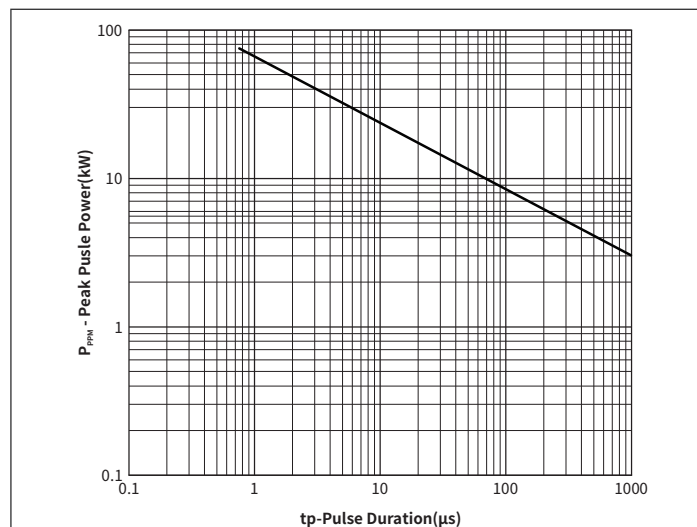


Fig. 1 Peak Pulse Power Rating Curve

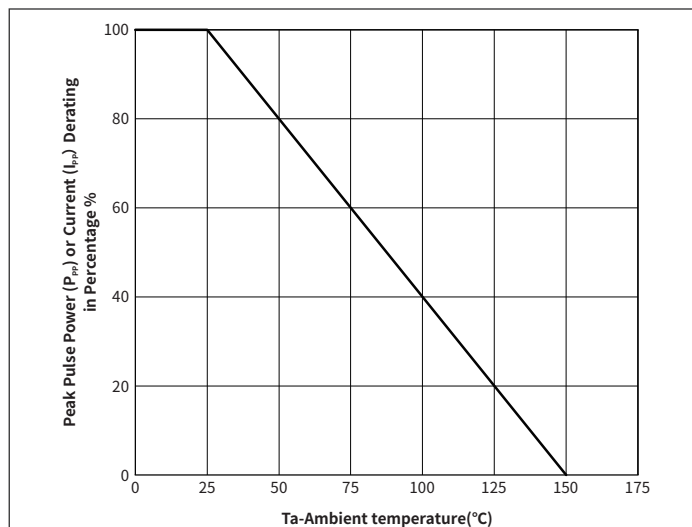


Fig. 2 Pulse Derating Curve

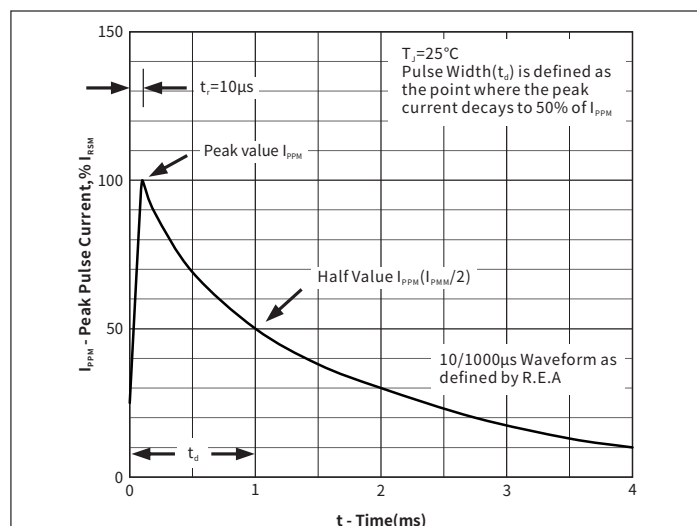


Fig. 3 Pulse Waveform

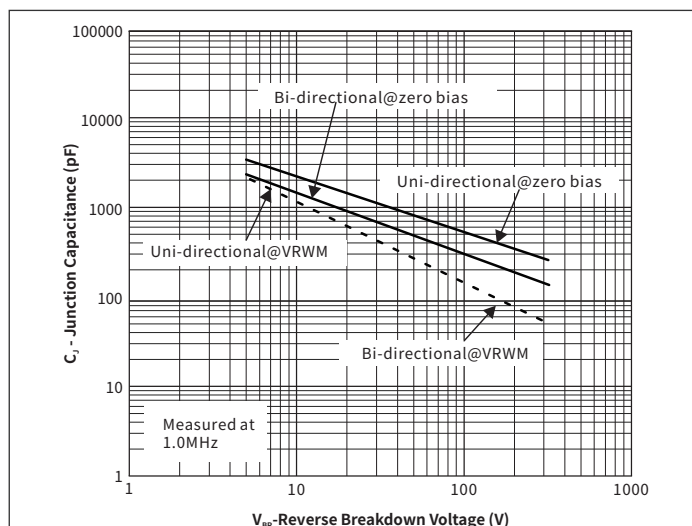


Fig. 4 Typical Junction Capacitance

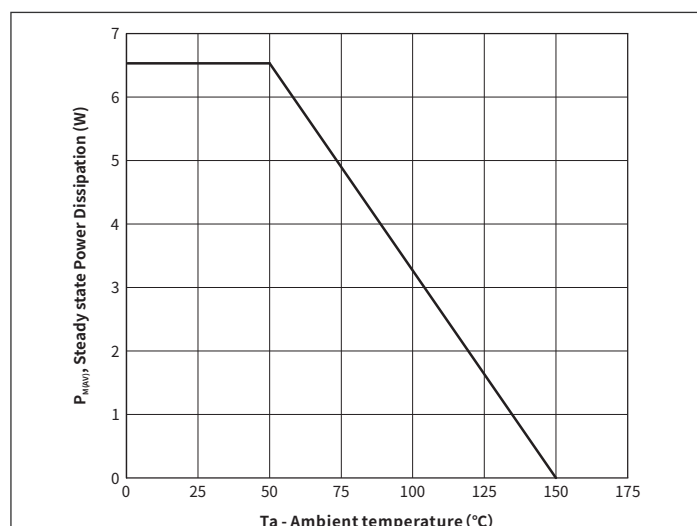


Fig. 5 Steady State Power Dissipation Derating Curve

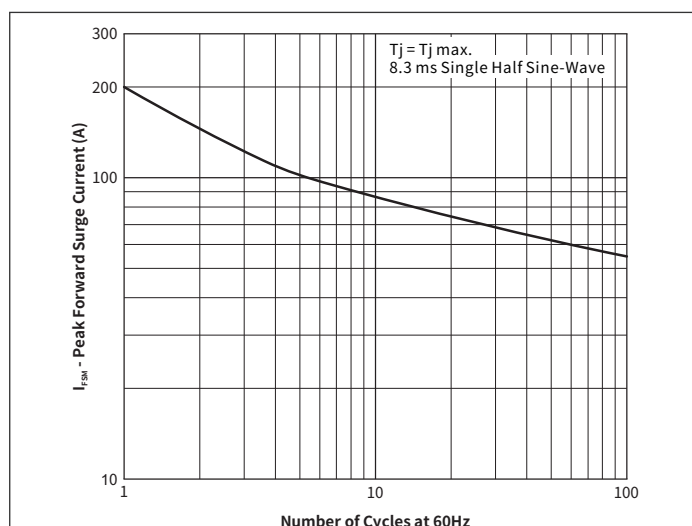
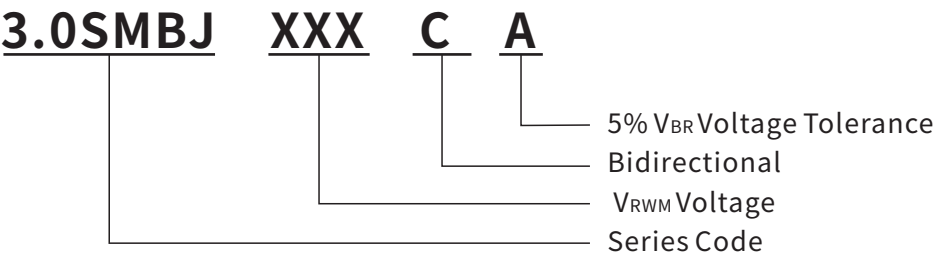


Fig. 6 Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

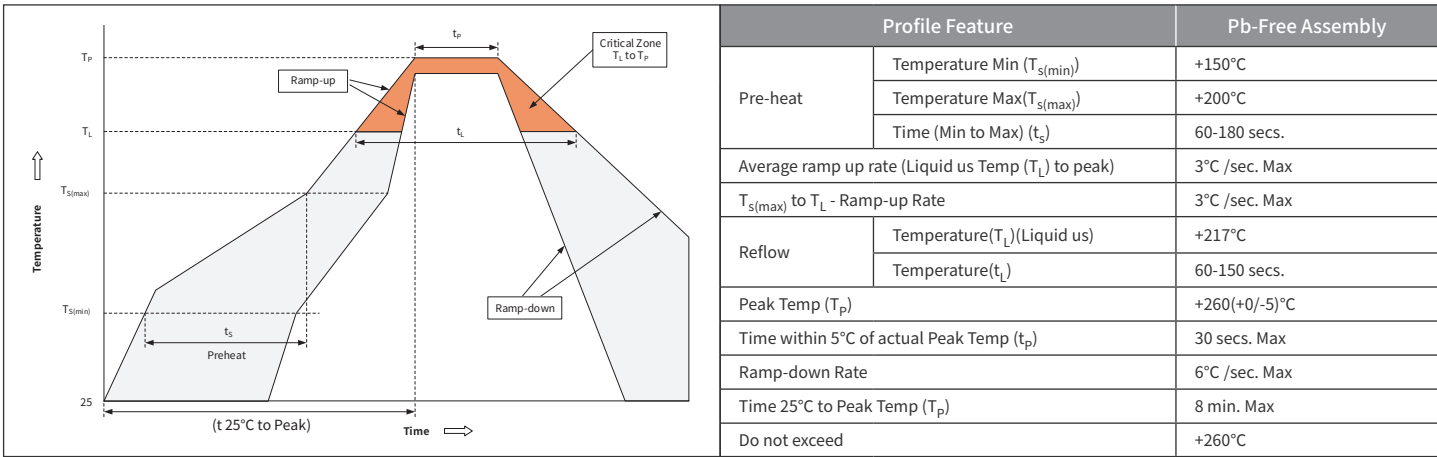
● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SMB	R3	0.098	3000	6000	48000	13"

● Part Numbering



● Soldering Parameters



● Packaging (SMB/DO-214AA)

