

Transient Voltage Suppressors (TVS) Data Sheet

● Description

The SMBJ6.8CA 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
- 600W peak pulse power capability at 10/1000 μ s waveform
- Fast response time
- Typical IR less than 5 μ A above 12.8V
- High Temperature soldering: 260°C /40 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
- Halogen free and RoHS compliant
- Typical failure mode is short from over-specified voltage or current
- Whisker test is conducted based on JEDEC JESD201A per its table 4a and 4c
- IEC 61000-4-2 ESD 30KV(Air),30KV(contact)

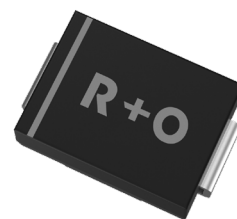
Breakdown Voltage

5.8 V

Peak Pulse Power

600 W

DO-214AA(SMB)



Bi-directional



Uni-directional



● Applications

TVS devices are ideal for the protection of I/O interfaces, VCC bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications

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

PARAMETER	SYMBOL	VALUE	SYMBOL
Peak Pulse Power Dissipation with a 10/1000 μ s waveform (Fig.1)(Note 1), (Note 2)	P _{PPM}	600	W
Peak Pulse Current with a 10/1000 μ s waveform.(Note1, Fig.3)	I _{PP}	See Next Table	A
Power Dissipation on Infinite Heat Sink at T _L =75° C	P _{M(AV)}	5.0	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I _{FSM}	100	A
Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only(Note 4)	V _F	3.5/5.0	V
Operating junction and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C
Typical thermal resistance junction to lead	R _{θJ-L}	20	°C /W
Typical thermal resistance junction to ambient	R _{θJ-A}	100	°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 (0.03mm thick) Copper Pads to each terminal.

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

(4) V_F < 3.5V for V_{BR} < 200V and V_F < 6.5V for V_{BR} > 201V.

SMBJ6.8CA

600W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

● Package Outline Dimensions (SMB/DO-214AA)

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
M	2.26	-	0.089	-
J	2.10	-	0.085	-
K	-	2.74	-	0.107

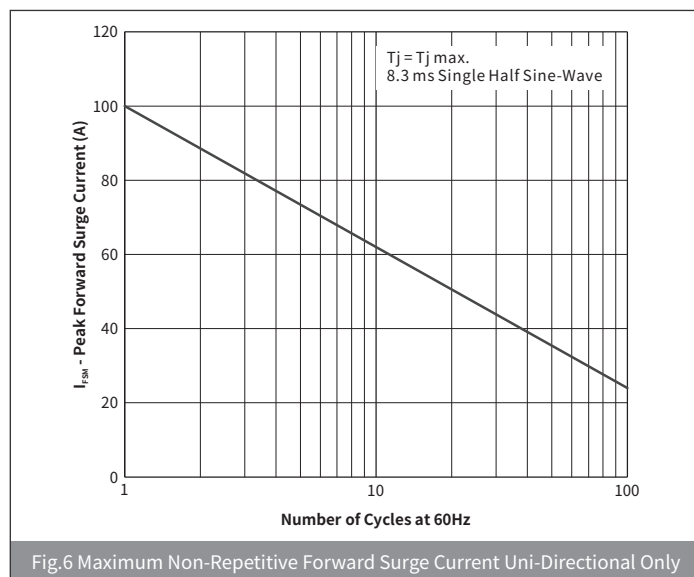
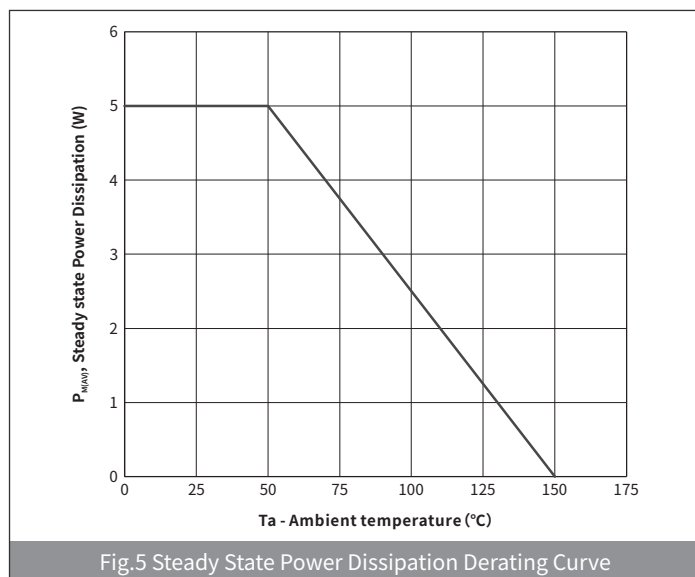
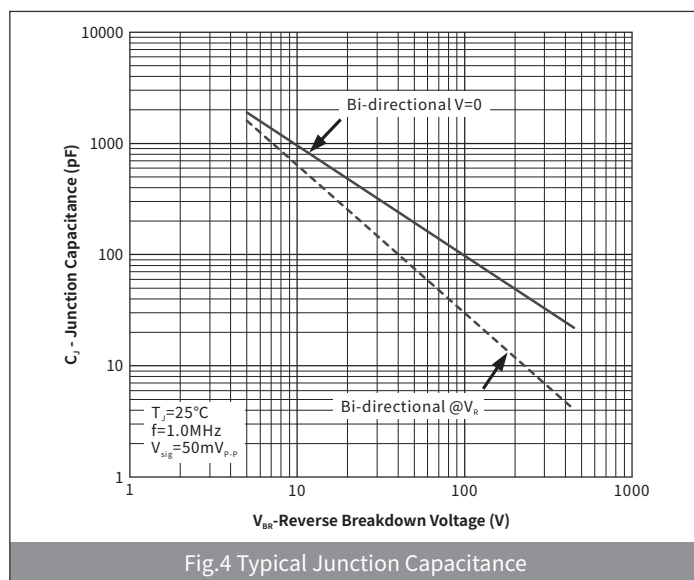
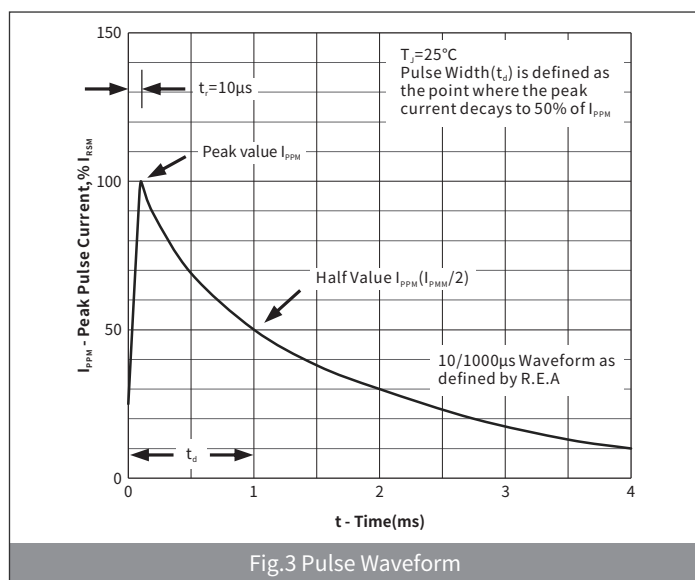
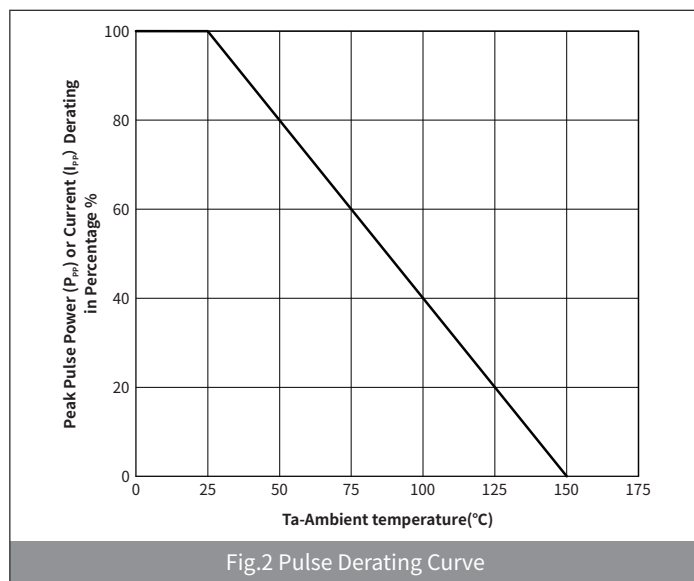
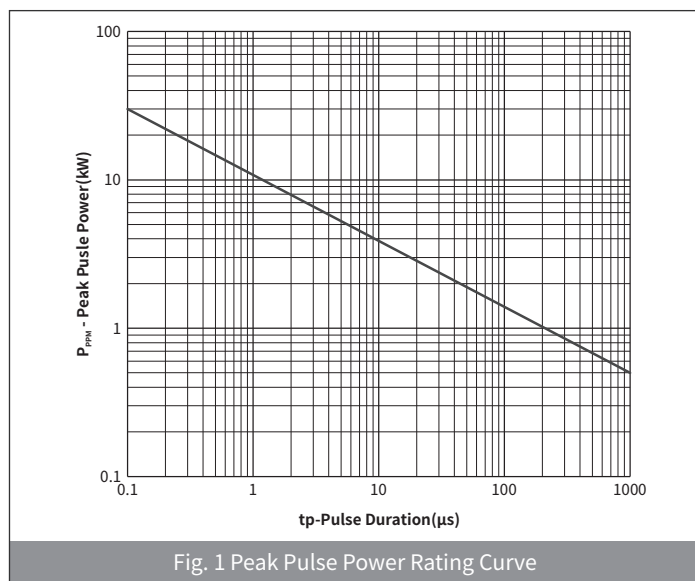
Cathode Band
(For uni-directional products only)

The diagram illustrates the mechanical dimensions of the SMBJ6.8CA package. The top view shows a rectangular component with a cathode band on one side. Dimensions A, B, and C are indicated. The side view shows the profile of the component with dimensions D, E, F, G, and H. The end view shows the width of the component with dimensions J, K, and M.

● 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}
		V_{RWM} (V)	Min.	Max.	I_T (mA)	V_C (V)	I_{PP} (A)	I_R (μ A)
SMBJ6.8CA	6V8CA	5.8	6.46	7.14	10	10.5	57.1	1000

● Ratings And Characteristics Curves ($T_a=25^\circ\text{C}$ Unless otherwise specified)



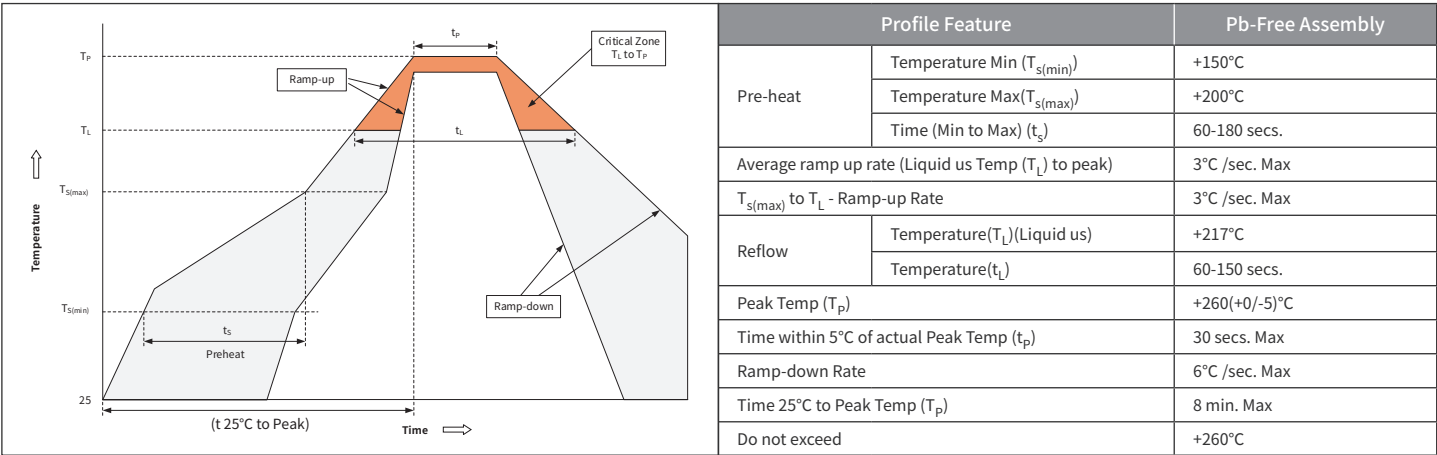
SMBJ6.8CA

600W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SMB	R1	0.098	500	2000	16000	7"
SMB	R3	0.098	3000	6000	48000	13"

Soldering Parameters



Packaging (SMB/DO-214AA)

