

Description

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



Features

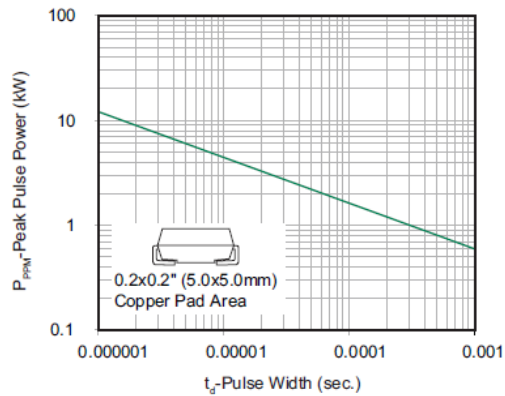
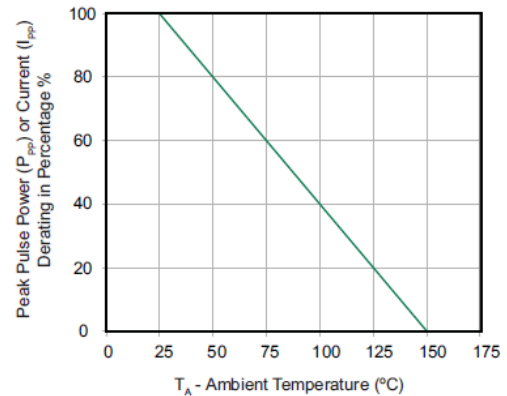
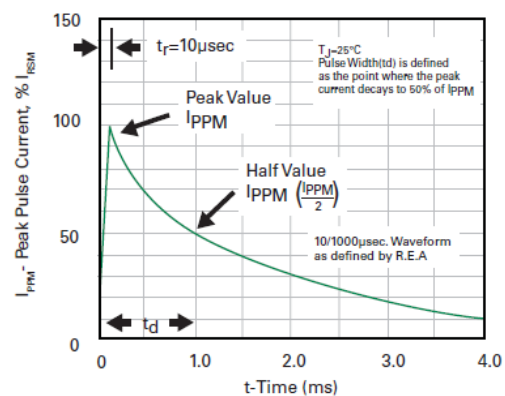
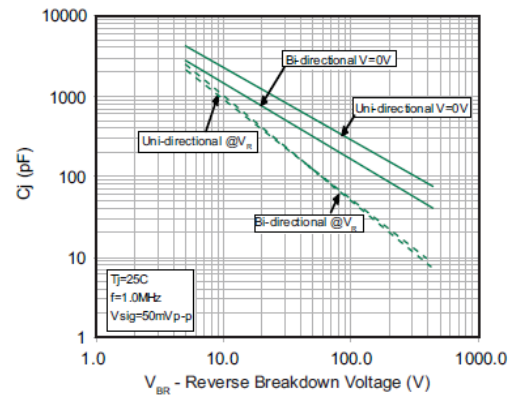
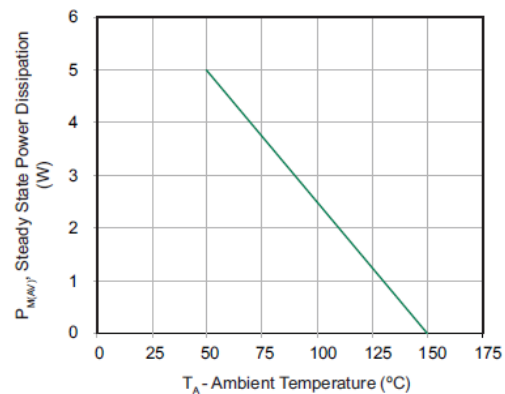
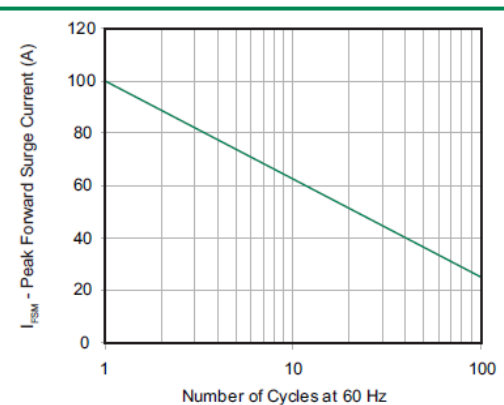
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-O
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0 Volts to V_{BR} min

Maximum Ratings And Electrical Characteristics

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at $T_A=25^{\circ}\text{C}$ by 10x1000 μs waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	600	W
Power Dissipation on infinite heat sink at $T_A=50^{\circ}\text{C}$	$P_{M(AV)}$	5	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	3.5V/5	V
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-65 to 150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	20	$^{\circ}\text{C/W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100	$^{\circ}\text{C/W}$

Notes:

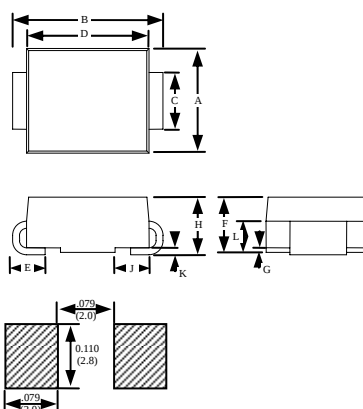
1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^{\circ}\text{C}$ per Fig. 2.
2. Mounted on 5.0x5.0mm copper pad to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only.
4. $V_F < 3.5\text{V}$ for $V_{BR} \leq 200\text{V}$ and $V_F < 6.5\text{V}$ for $V_{BR} \geq 201\text{V}$.

Rating And Characteristic Curves
Figure 1 - Peak Pulse Power Rating

Figure 2 - Pulse Derating Curve

Figure 3 - Pulse Waveform

Figure 4 - Typical Junction Capacitance

Figure 5 - Steady State Power Dissipation Derating Curve

Figure 6 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only


Part Number (Bi)	Reverse Stand Off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts)@ I_R		Test Current I_R (mA)	Maximun Clamping Voltage V_C @ I_{PP} (V)	Maximun Peak Pulse Current I_{PP} (A)	Maximun Reverse Leakage I_R @ V_R (μA)
		MIN	MAX				
SMBJ5.0CA	5.0	6.4	7.0	10	9.2	65.3	800

For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.
For parts without A (V_{BR} is $\pm 10\%$ and V_C is 5% higher than with A parts).

Dimensions



Dimension	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.134	0.155	3.40	3.94
B	0.205	0.22	5.21	5.59
C	0.075	0.083	1.90	2.11
D	0.166	0.185	4.22	4.70
E	0.036	0.056	0.91	1.42
F	0.073	0.087	1.85	2.2
G	0.002	0.008	0.05	0.20
H	0.077	0.094	1.95	2.40
J	0.043	0.053	1.09	1.35
K	0.008	0.014	0.20	0.35
L	0.039	0.049	0.99	1.24

Summary of Packing Options

Package Type	Description	Packing Quantity	Industry Standard
DO-214AA 	Embossed Carrier Reel Pack	500 PCS	EIA-481-1