

# SMBJ33A

## Transient Voltage Suppressors

Pppm: 600W

IFSM: 100A

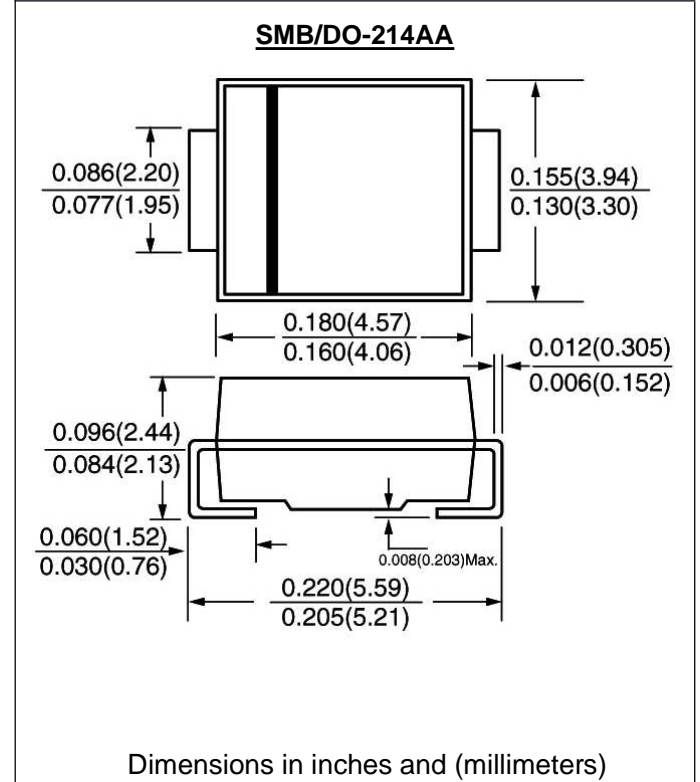


### FEATURE

Low profile package  
Ideal for surface mount pick and place applications  
Excellent clamping capability  
Very fast response time  
Low incremental surge resistance  
Glass passivated chip junction  
High temperature soldering guaranteed  
260°C/10sec/at terminals

### MECHANICAL DATA

Terminal: Plated axial leads solderable per MIL-STD 202E, method 208C  
Case: Molded with UL-94 Class V-0 recognized Flame Retardant Epoxy  
Polarity: color band denotes cathode end  
Mounting position: any



### MAXIMUM RATINGS (TA = 25 °C unless otherwise noted)

Parameter	Symbol	SMBJ33A	units
Peak pulse power dissipation with a 10/1000 $\mu$ s waveform <sup>(1,2)</sup> (Fig. 1)	P <sub>PPM</sub>	600	W
Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	I <sub>PPM</sub>	11.3	A
Breakdown Voltage at I <sub>T</sub> =1mA	V <sub>BR</sub>	36.7min 40.6max	V
Maximum Reverse Leakage at V <sub>WM</sub> =33V	I <sub>R</sub>	1.0	$\mu$ A
Maximum Clamping Voltage at IPPM	V <sub>C</sub>	53.3	V
Peak forward surge current 8.3 ms single half sine-wave uni-directional only <sup>(2)</sup>	I <sub>FSM</sub>	100	A
Maximum instantaneous forward voltage at 50A for uni-directional only	V <sub>F</sub>	3.5	V
Typical thermal resistance, junction-to-lead	R <sub>th(jl)</sub>	20	°C/W
Typical thermal resistance, junction-to--ambient	R <sub>th(ja)</sub>	100	°C/W
Operating junction and Storage temperature range	T <sub>j</sub> , T <sub>stg</sub>	-55 to +150	°C

Note:  
(1) Non-repetitive current pulse, per Fig. 3 and derated above TA = 25 °C per Fig. 2  
(2) Mounted on 0.2x0.2"(5.0x5.0mm) copper pads to each terminal

# RATINGS AND CHARACTERISTIC CURVES SMBJ33A

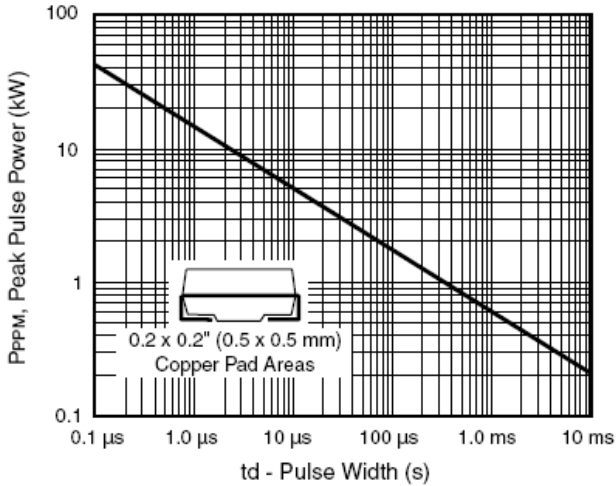


Figure 1. Peak Pulse Power Rating Curve

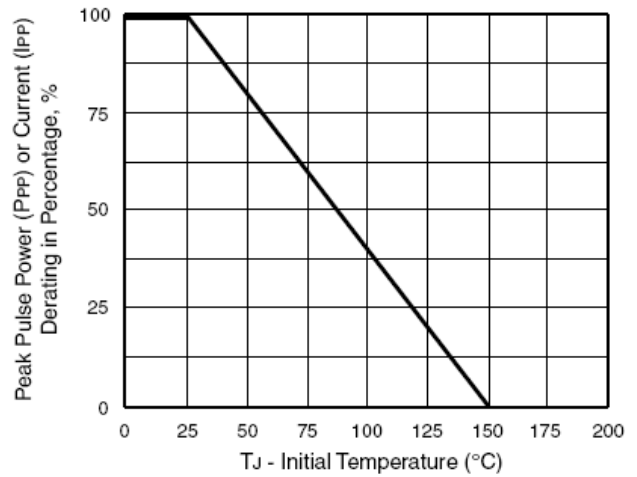


Figure 2. Pulse Power or Current versus Initial Junction Temperature

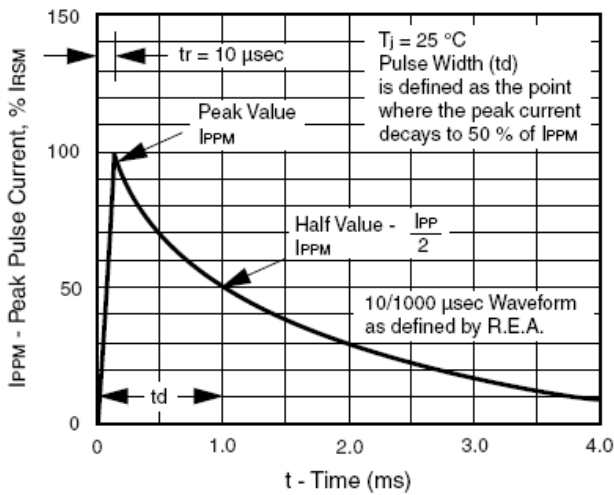


Figure 3. Pulse Waveform

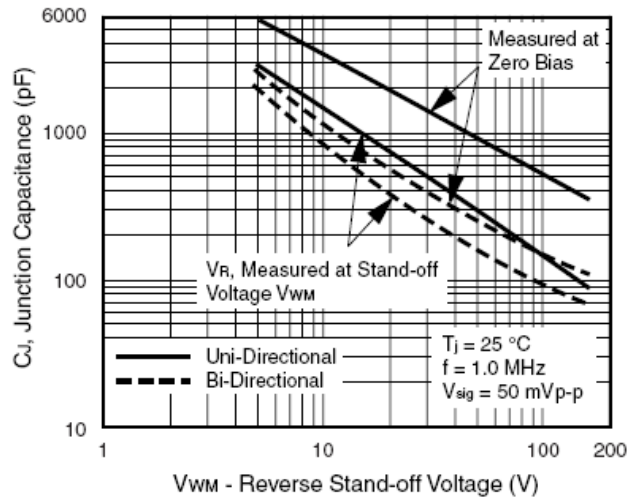


Figure 4. Typical Junction Capacitance

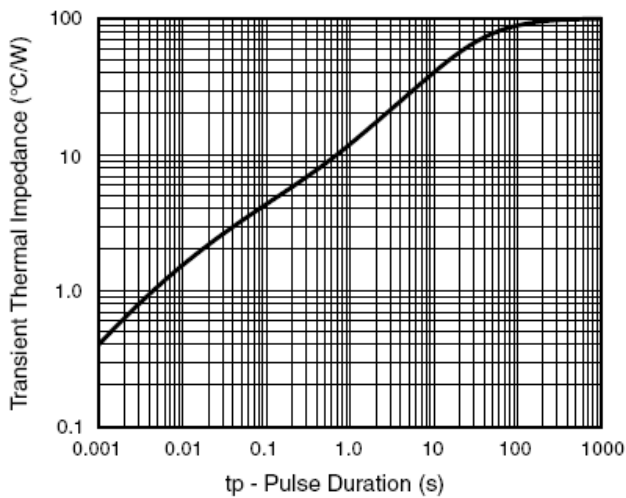


Figure 5. Typical Transient Thermal Impedance

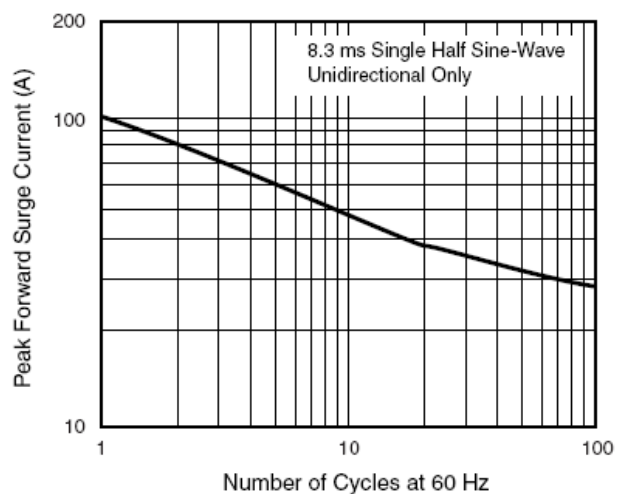


Figure 6. Maximum Non-Repetitive Peak Forward Surge Current