

Unidirectional and Bidirectional Surface Mount Transient Voltage Suppressor



Features:

- Rating to 200V V_{BR}
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL recognition 94V-0
- Typical IR less than 1 μ A above 10V
- Fast response time : typically less than 1ns for Uni-direction, less than 5ns of Bi-direction, from 0 Volts to BV min

Mechanical Data:

Case	: Molded Plastic
Polarity	: Cathode band denotes uni-directional device No cathode band denotes bi-directional device
Weight	: 0.007 ounces, 0.21 grams
Reverse Voltage	: 5 to 440 Volts
Power Dissipation	: 1500 Watts

Maximum Ratings and Electrical Characteristics:

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Characteristics	Symbol	Values	Unit
Peak pulse power dissipation with a 10/1000 μ s waveform	PPPM	1500	Watts
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method)	I_{FSM}	200	Amps
Typical Thermal Resistance, Junction to Ambient (Note1)	$R_{\theta JA}$	75	°C/W
Typical Thermal Resistance, Junction to Lead (Note1)	$R_{\theta JL}$	15	
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}		

Notes:

1. Mounted on P.C.B. with 0.32" × 0.32" (8mm × 8mm) copper pad areas.

2. The typical data above is for reference only

Part Number		Marking		Reverse Stand off Voltage	Breakdown Voltage V_{BR} Volts @ I_T		Test Current I_T	Max. Clamping Voltage $V_C@I_{PP}$	Max. Reak Pulse Current	Max. Reverse Leakage at V_R
Uni.	Bi.	Uni.	Bi.	V_R (V)	Min. (V)	Max. (V)	@ I_T (mA)	V_C (V)	I_{PP} (A)	I_R (μ A)
SMCJ15A+	-	GEM	-	15	16.7	18.5	1	24.4	61.5	1
SMCJ17A+	-	GER	-	17	18.9	20.9	1	27.6	54.3	1

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Notes:

1. Pulse test : $T_P \leq 50\text{ms}$.
2. Surge current waveform Per Fig. 3 and derate Per Fig. 1.
3. $V_F = 3.5\text{V}$ at $I_F = 25\text{A}$ (uni-directional only)
4. For bi-directional types with V_{WM} of 10V and less, the I_D limit is doubled

Ratings and Characteristic Curves

FIG.1-PULSE DERATING CURVE

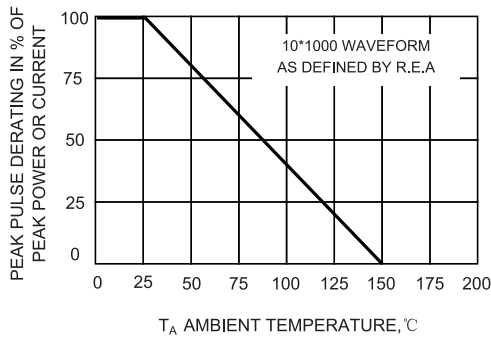


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

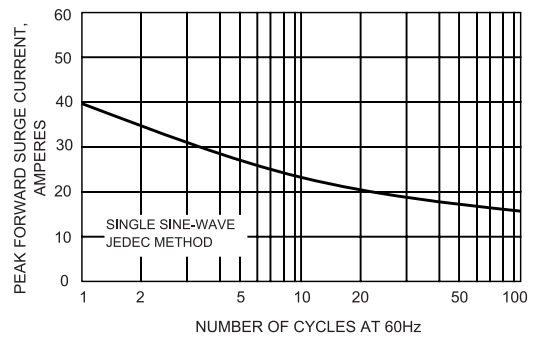


FIG.3-PULSE WAVEFORM

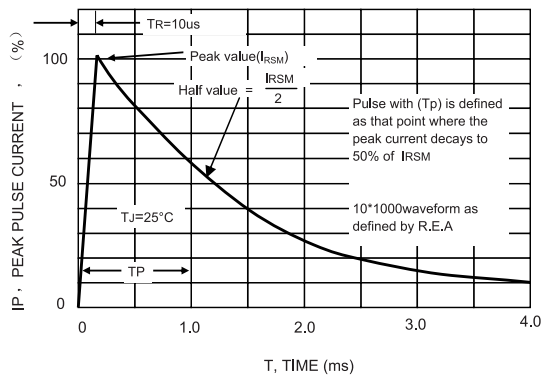


FIG.4-TYPICAL JUNCTION CAPACITANCE

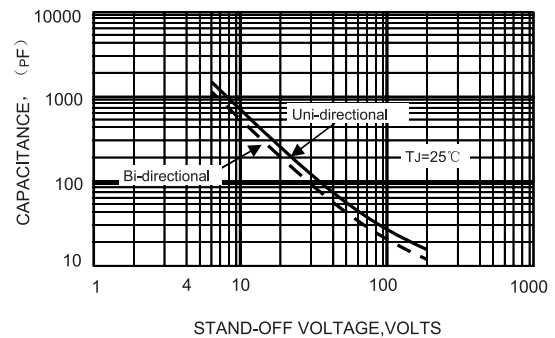


FIG.5-PULSE RATING CURVE

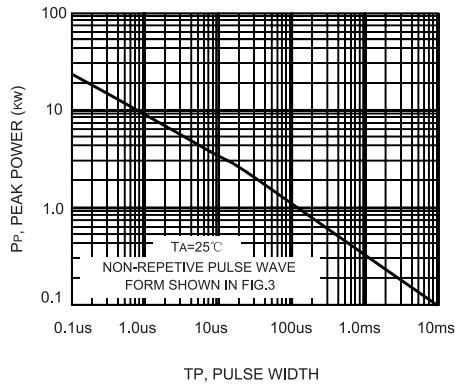
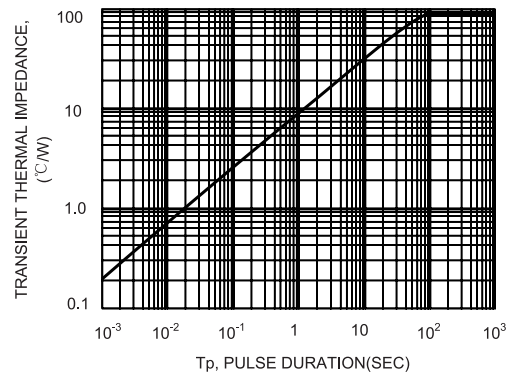


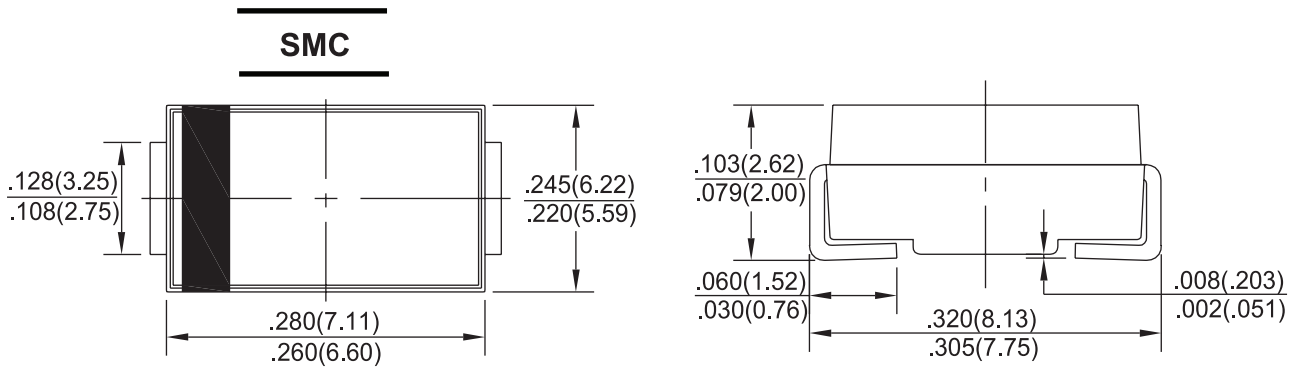
FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE



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Dimensions:



Dimensions : Inches (Millimetres)

Part Number Table

Description	Part Number
TVS - Diodes 1500W 15V Uni-Directional	SMCJ15A+
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