Transient Voltage Suppressor

Features:

- Glass Passivated Junction
- Low Incremental Surge Resistance, Excellent Clamping Capability
- Low Profile Package With Built-In Strain Relief for Surface Mounted Applications
- 600W Peak Pulse Power Capability with a 10/1,000μs Wave Form, Repetition Rate (duty cycle) : 0.01%
- Very Fast Response Time
- High Temperature Soldering Guaranteed : 250°C/10 seconds at Terminals

Mechanical Data

- Case: JEDEC DO-214AA molded plastic over passivated chip
- Terminals: solder plated, solderable per MIL-STD-750, method 2026
- Polarity : forint-directional types the colour band denotes the cathode, which is positive with respect to the anode under normal TVS operation
- Mounting position: any Weight : 0.007oz, 0.21g

Devices for Bidirectional Applications

For bi-directional devices, use suffix C or CA (e.g. SMAJ10C, SMAJ10CA). Electrical characteristics apply in both directions.

Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

Characteristic	Symbol	Value	Unit
Peak power dissipation with a 10/1,000μs waveform (Note 1,2, Fig.1)	P_{PPM}	Min. 1,500	W
Peak pulse current with a 10/1,000μs waveform (Note 1)	I_{PPM}	See Next Table	A
Typical thermal resistance, junction to ambient (Note 2)	$R_{\theta JA}$	100	°C/W
Peak forward surge current, 8.3ms single half sine-wave uni-directional only (Note 3)	I_{FSM}	100	A
Typical thermal resistance, junction to ambient	$R_{\theta JL}$	20	°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Note:

(1) Non-repetitive current pules, per Fig. 3 and derated above T_A=25 per Fig. 2.

(2) Mounted on minimum recommended pad layout.

(3) Mounted on 0.2" × 0.2" (5mm × 5mm) copper pads to each terminal.

Electrical Characteristics (T_A = 25°C)

Part Number	Dynamic			V_{WM}	I_{RM}	I_{PPM}	V_C
	V		@I_T		V_{WM}		I_{PPM}
	Min.	Max.	mA	V	uA	A	V
SMCJ130A-13-F	144	159	1	130	5	7.2	209
SMCJ15A-13-F	16.7	18.5		15		61.5	24.4
SMCJ16A-13-F	17.8	19.7		16		57.7	26
SMCJ17A-13-F	18.9	20.9		17		54.3	27.6
SMCJ45A-13-F	50	55.3		45		20.6	72.7
SMCJ6.5CA-13-F	7.22	7.98		6.5	500	133.9	11.2
SMCJ7.5CA-13-F	8.33	9.21		7.5	100	116.3	12.9
SMCJ9.0CA-13-F	10	11.1		9.0	10	97.4	15.4

FIG.1 -- PEAK PULSE POWER RATING CURVE

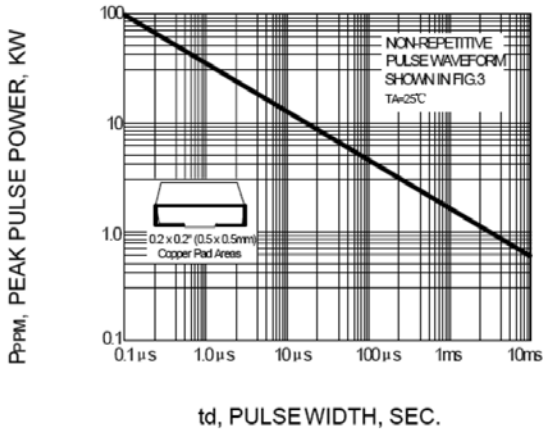


FIG.2 -- PULSE DERATING CURVE

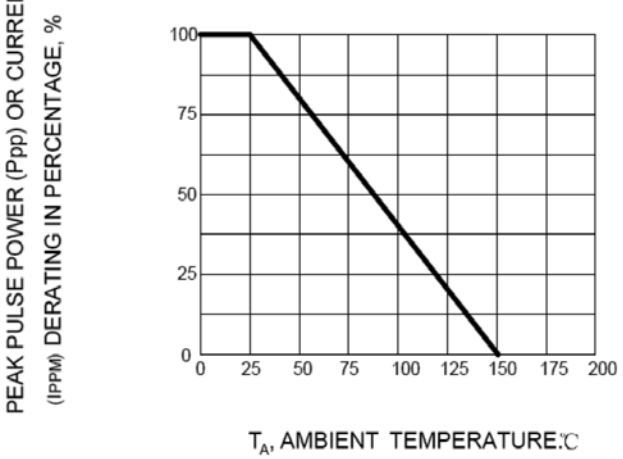


FIG.3 – PULSE WAVEFORM

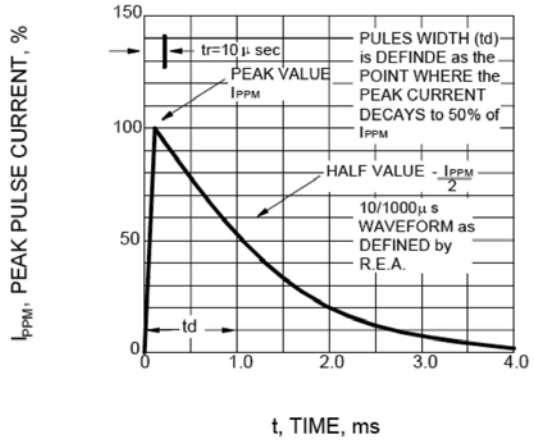


FIG.4 – TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

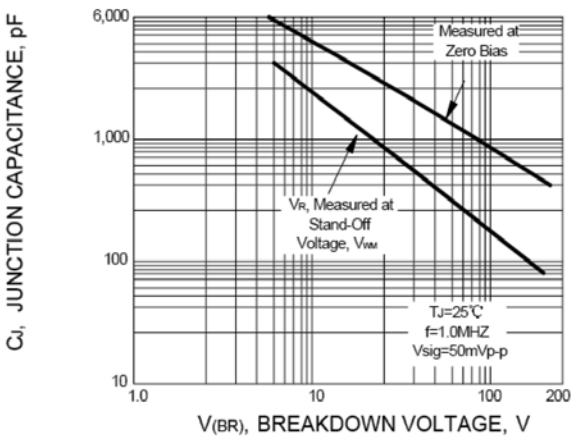


FIG.5 – TYPICAL TRANSIENT THERMAL IMPEDANCE

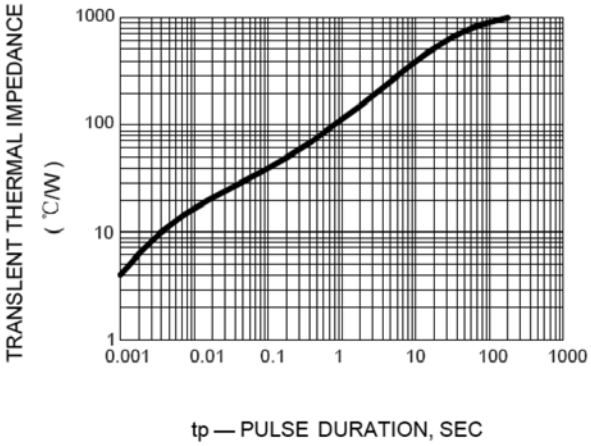
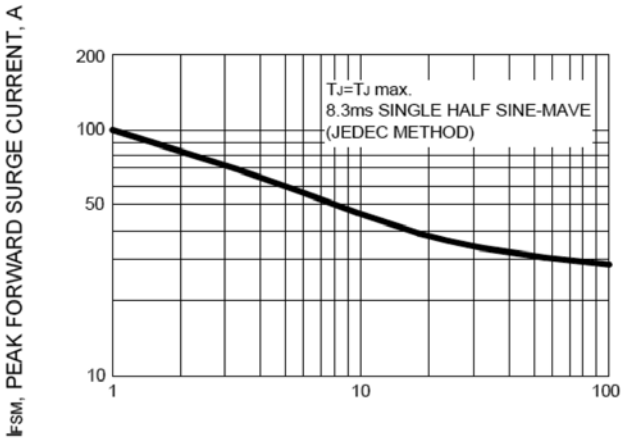
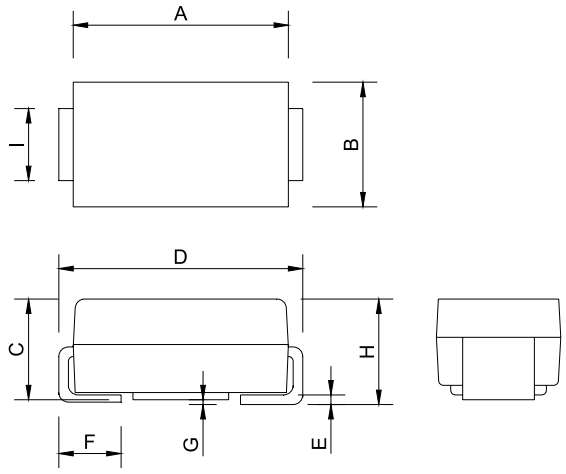


FIG.6 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



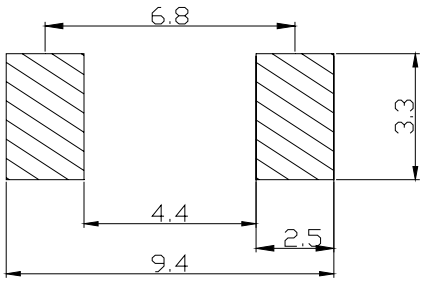
Package Outline Dimensions



SMC		
Dim.	**Min.**	**Max.**
A	6.7	7.1
B	5.7	6.1
C	2.1	2.4
D	7.55	80.5
E	0.25 Typ.	
F	1	1.6
G	0.2 Max.	
H	2.15	2.45
I	2.85	3.15

Dimensions : Millimetres

Soldering Footprint



Dimensions : Millimetres

Package Information

Device	Package	Shipping
SMCJ130A-13-F SMCJ15A-13-F SMCJ16A-13-F SMCJ17A-13-F SMCJ45A-13-F SMCJ6.5CA-13-F SMCJ7.5CA-13-F SMCJ9.0CA-13-F	DO-214AC(SMA)	5,000 / Tape & Reel

Part Number Table

Description	Part Number
Transient Voltage Suppressor	SMCJ130A-13-F
	SMCJ15A-13-F
	SMCJ16A-13-F
	SMCJ17A-13-F
	SMCJ45A-13-F
	SMCJ6.5CA-13-F
	SMCJ7.5CA-13-F
	SMCJ9.0CA-13-F