

Surface Mount Transient Voltage Suppressors



DO-214AC (SMA)

FEATURES



- Low profile package
- Ideal for automated placement
- 600 W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle): 0.01 %
- Excellent clamping capability
- Typical I_D less than 1.0 μ A
- Meets MSL level 1, per J-STD-020C, LF max peak of 260 °C
- Solder dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive and telecommunication.

MECHANICAL DATA

Case: DO-214AC (SMA)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D
E3 suffix for commercial grade

Polarity: Color band denotes cathode end

PRIMARY CHARACTERISTICS	
V_{WM}	12 V
P_{PPM}	600 W
I_{FSM}	50 A
T_J max.	150 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000 μ s waveform ⁽¹⁾⁽²⁾ (Fig. 3)	P_{PPM}	600	W
Peak power pulse current with a 10/1000 μ s waveform ⁽¹⁾ (Fig. 1)	I_{PPM}	31	A
Peak forward surge current 8.3 ms single half sine-wave ⁽²⁾	I_{FSM}	50	A
Maximum instantaneous forward voltage at 25 A ⁽³⁾	V_F	3.5	V
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150	°C

Notes:

(1) Non-repetitive current pulse, per Fig. 1 and derated above $T_A = 25$ °C per Fig. 2.

(2) Mounted on P.C.B. with 5.0 x 5.0 mm copper pads attached to each terminal

(3) Pulse test: 300 μ s pulse width, 1 % duty cycle

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
DEVICE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V _{BR} (V) ⁽¹⁾		TEST CURRENT I _T (mA)	STAND-OFF VOLTAGE V _{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V _{WM} I _D (μA)	MAXIMUM PEAK PULSE CURRENT I _{PPM} (A) ⁽²⁾	MAXIMUM CLAMPING VOLTAGE AT I _{PPM} V _C (V)
		MIN	MAX					
SMA6J12A	6BE	13.3	14.7	1.0	12	1.0	31	19.5

Notes:

- (1) Pulse test: t_p ≤ 50 ms
- (2) Surge current waveform per Fig. 3 and derate per Fig. 2

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
SMA6J12A-E3/61	0.064	61	1800	7" diameter plastic tape and reel	
SMA6J12A-E3/5A	0.064	5A	7500	13" diameter plastic tape and reel	

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

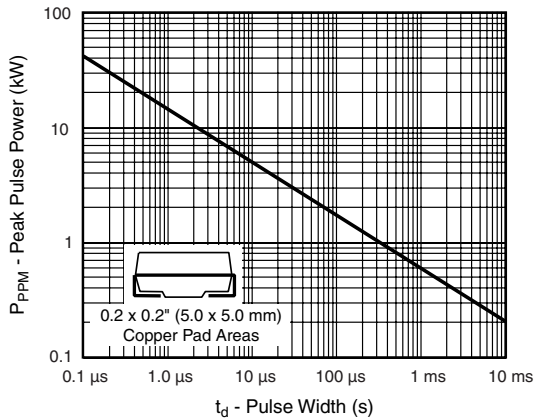


Figure 1. Peak Pulse Power Rating Curve

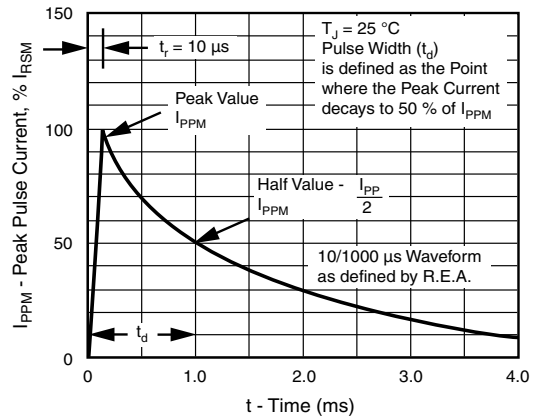


Figure 3. Pulse Waveform

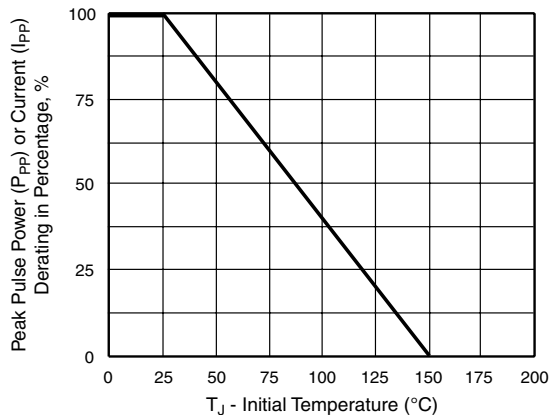
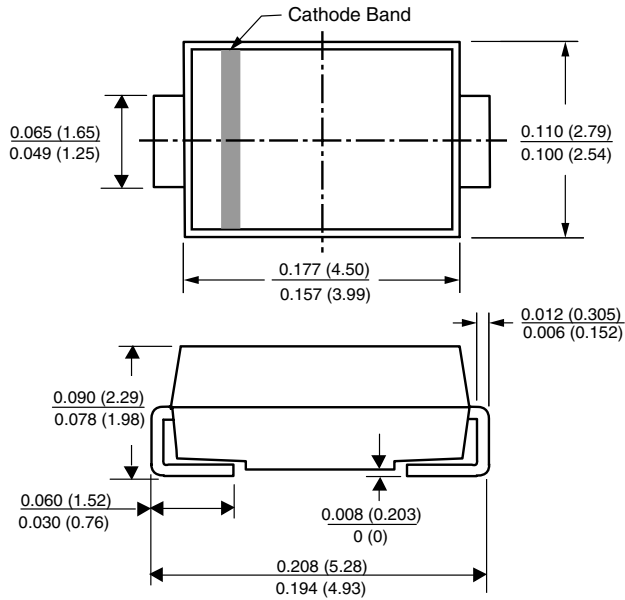


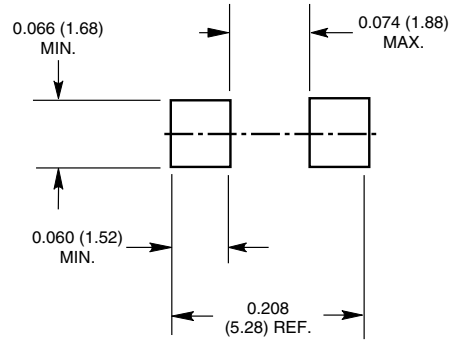
Figure 2. Pulse Power or Current vs. Initial Junction Temperature

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout





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