BORN SEMICONDUCTOR

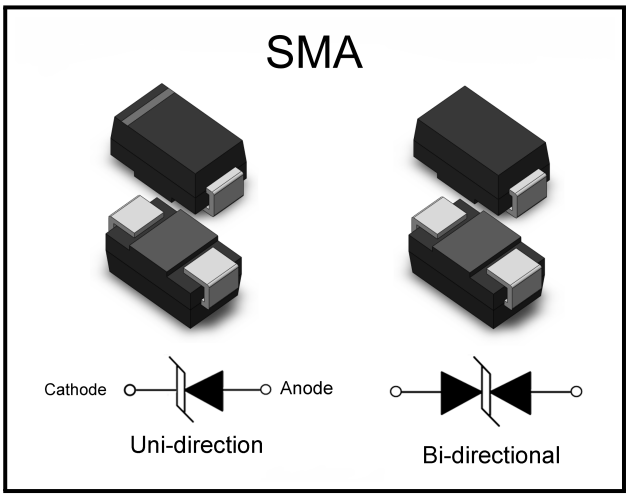
SMAJ3.3

Transient Voltage Suppressor

Features

- Peak power disspation 400W@10 x 1000 us Pluse
- Low incremental surge resistance
- Excellent clamping capability
- Glass passivated junction
- Fast response time
- IEC 61000-4-2 ±30kV contact ; ±30kV air

Package



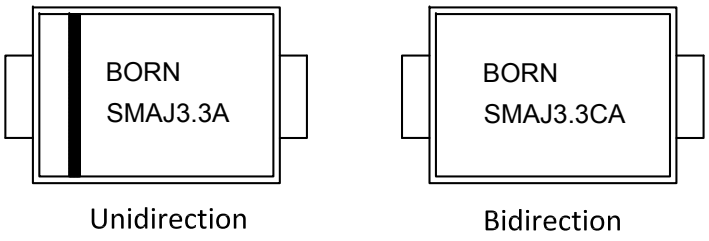
Mechanical Characteristics

- Package: SMA plastic package.
- Lead Finish: Matte Tin
- Case Material: Epoxy Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020

Applications

- Telecom
- Computer
- Industrial electronic
- Consumer electronic
- Automotive electronic

Making Code



Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SMA	Tape/Reel,13” reel	5000	EIA-481-1

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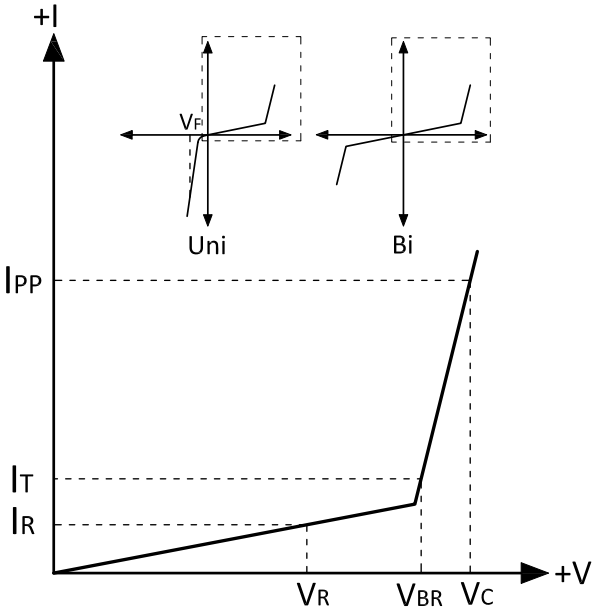
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SMAJ3.3

Transient Voltage Suppressor

Electrical Parameters

Parameter	Definition
C_J	Junction Capacitance - typical capacitance measured with 0V or V_R bias
I_{PP}	Peak Pulse Current - maximum rated peak impulse current
V_C	Clamping Voltage - Peak voltage measured across the suppressor at a specified Ippm
V_{BR}	Breakdown Voltage - Maximum voltage that flows though the TVS at a specified test current (I_T)
I_R	Leakage Current - maximum peak off-state current measured at V_R
V_R	Peak Off-state Voltage - maximum voltage that can be applied while maintaining off state



Absolute Maximum Ratings (T_A=+25°C, nless otherwise noted)

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us Waveform	P_{PPM}	400	W
Steady state power dissipation at T_L=75°C	P_D	1	W
Peak Forward Surge Current,8.3ms Single Half Sine-Wave(Note1)	I_{FSM}	40	A
Operating Junction Temperature Range	T_J	-55 to 150	°C
Storage Temperature Range	T_J	-55 to 150	°C

Notes:

1.Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

Absolute Maximum Ratings (T_A=+25°C, unless otherwise noted)

Part Number	Part Number	Reverse Stand-Off Votage	Breakdown Voltage V_{BR}@I_T		Test Current I_T	Maximum Clamping Voltage V_C @ I_{pp}	Maximum Peak Pulse Current I_{pp}	Maximun Reverse Leakage I_R @V_R
(Uni)	(Bi)	(V)	Min.(V)	Max.(V)	(mA)	(V)	(A)	(uA)
SMAJ3.3A	SMAJ3.3CA	3.3	4.2	6.5	1.0	8.7	47.6	150

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Ratings and Characteristic Curves

Figure 1: Peak Pulse Power Rating

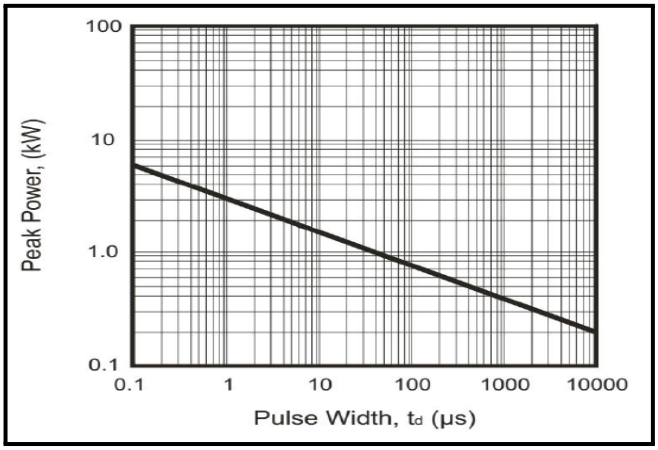


Figure 2: Pulse Derating Cure

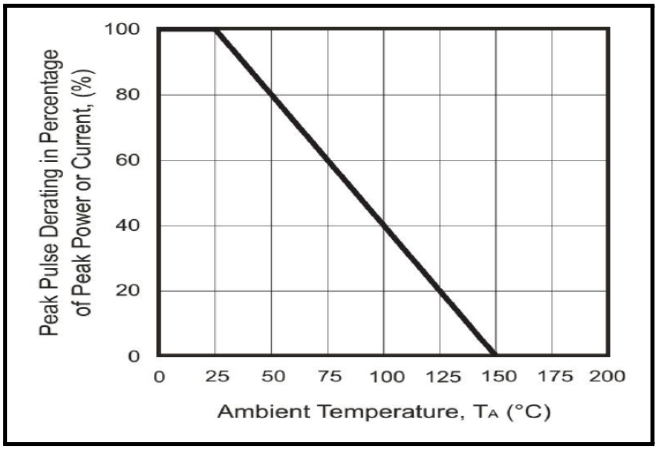


Figure 3 : Pulse Waveform

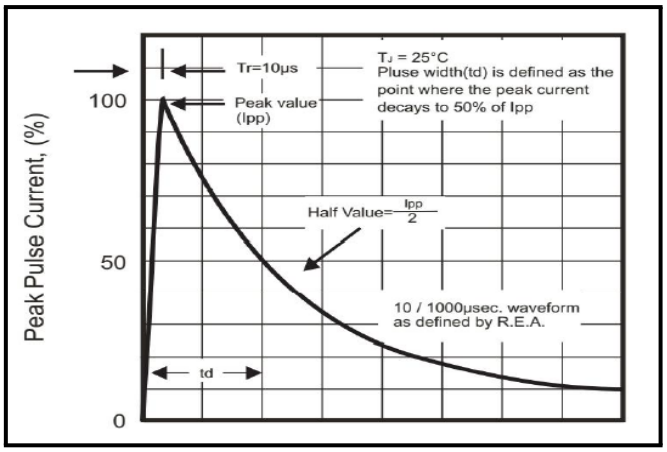


Figure 4: Maximum Non-Repetitive Surge Current

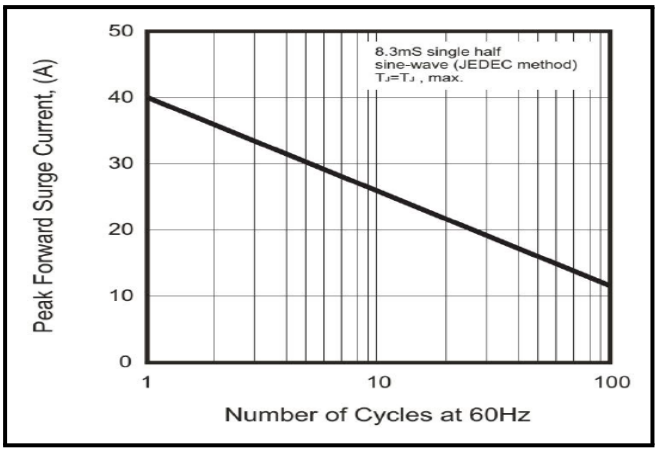
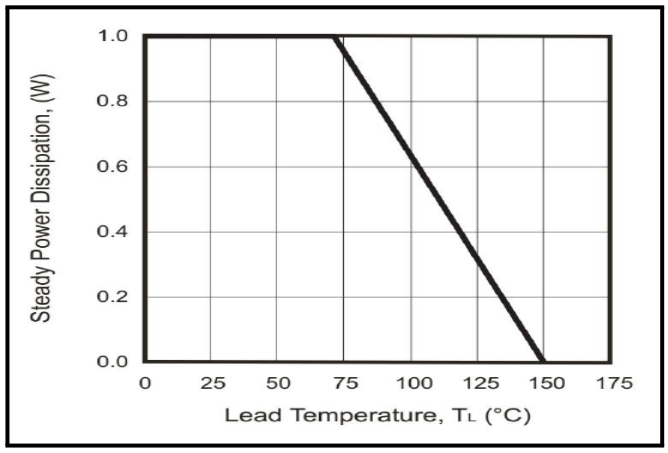
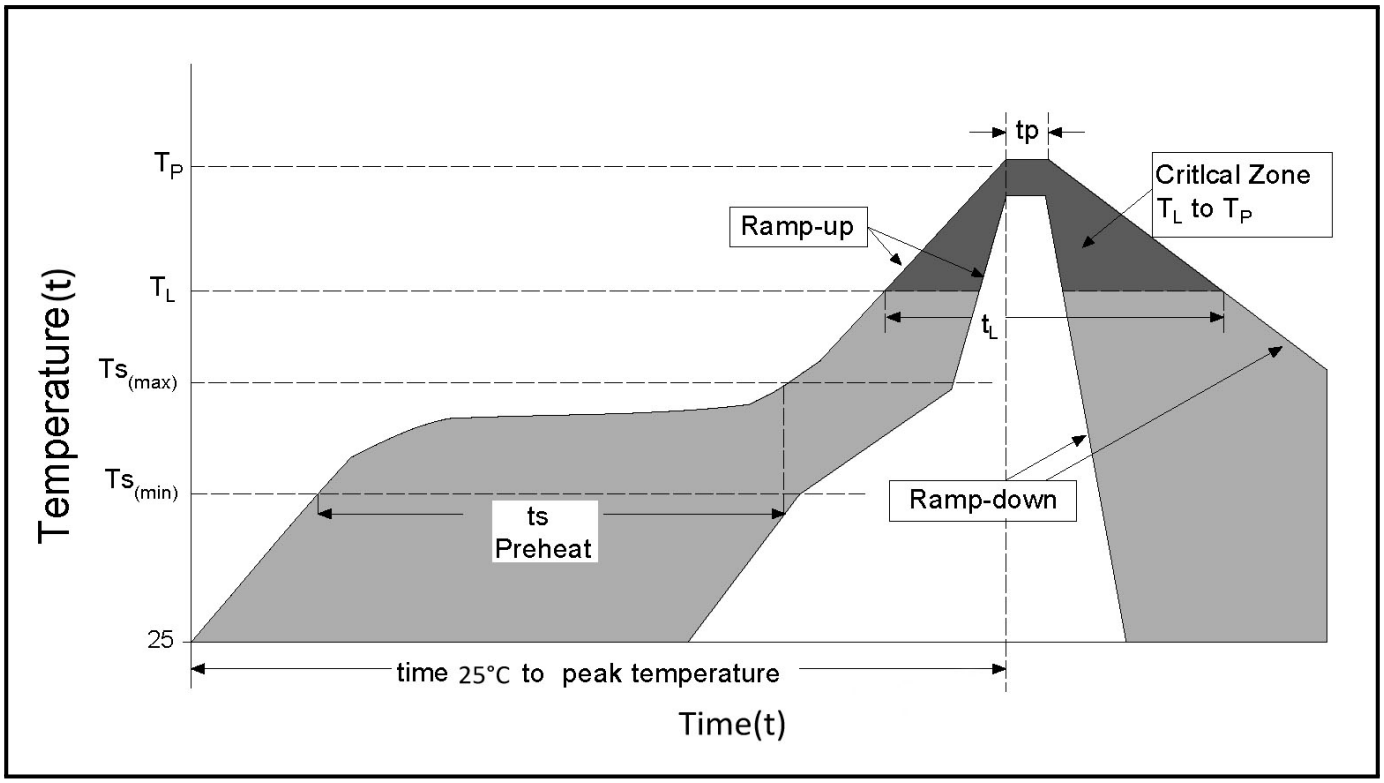


Figure 5 : Steady State Power Derating Curve



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Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min (T_S(min))	150°C
	- Temperature Max (T_S(max))	200°C
	- Time (min to max) (t_S)	60 - 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
T_S(max) to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 -150 secs
Peak Temperature (T_P)		$260^{+0/-5°C}$
Time within 5°C of actual peak Temperature (t_p)		6°C/second max
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C

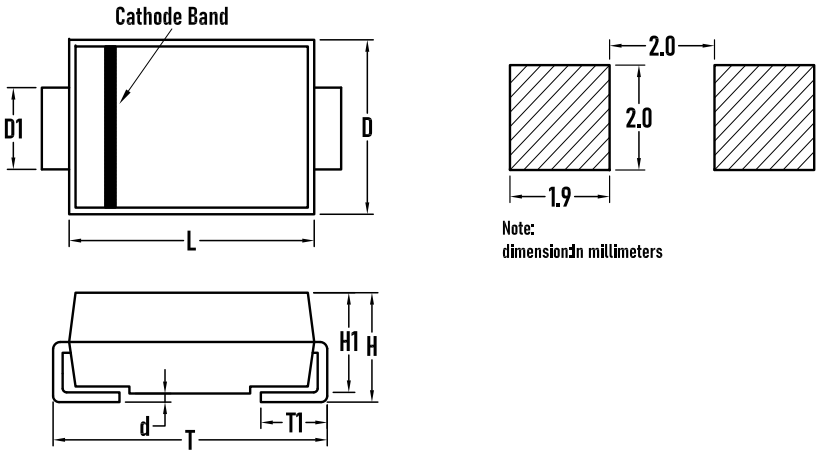
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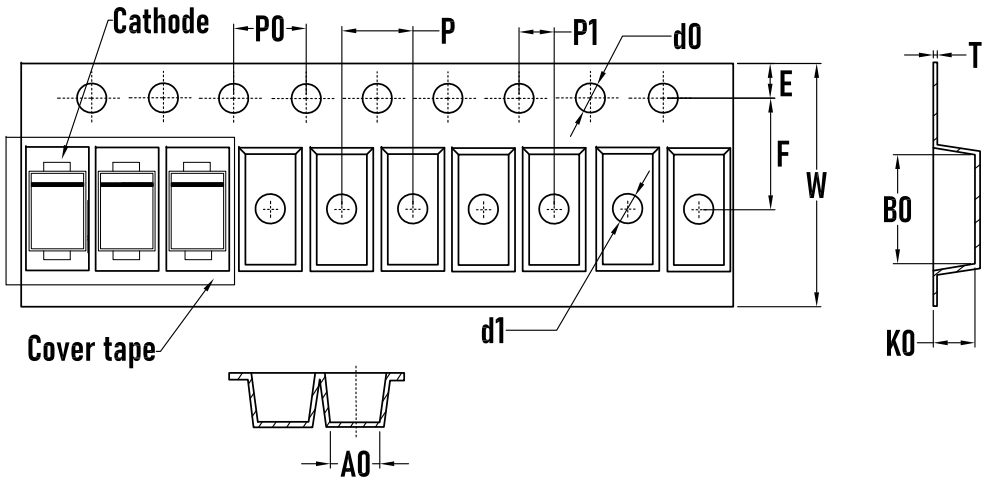
Transient
Voltage Suppressor

Outline Drawing - SMA



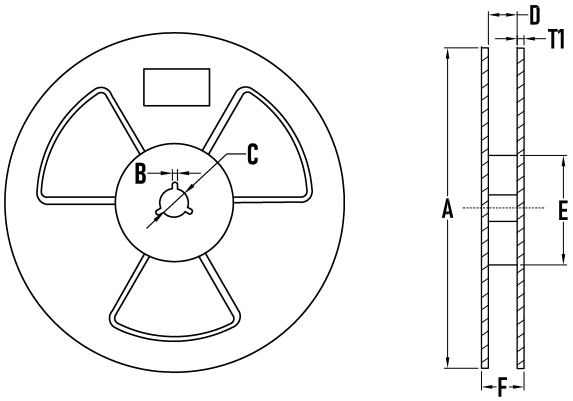
SYMBOL	MILLIMETER		Inches	
	MIN	MAX	MIN	MAX
D	2.5	2.9	0.098	0.114
D1	1.2	1.8	0.047	0.071
T	4.8	5.3	0.189	0.209
T1	0.8	1.5	0.031	0.059
d	–	0.2	–	0.008
H1	1.8	2.2	0.071	0.087
H	1.9	2.5	0.075	0.098
L	3.9	4.6	0.154	0.181

Packaging Tape - SMA



SYMBOL	MILLIMETER
A0	2.70
B0	5.10±0.1
d0	1.50±0.1
d1	1.50±0.1
E	1.75±0.1
F	5.50±0.1
K0	2.40±0.1
P	4.00±0.1
P0	4.00±0.1
P1	2.00±0.1
W	12.00±0.1
T	0.2±0.02

Packaging Reel



SYMBOL	MILLIMETER
A	323±2
B	3.0±0.2
C	15.0±0.5
D	13±2
E	73±2
T1	2.2±0.2
Quantity	5000PCS

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