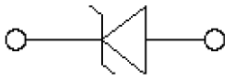
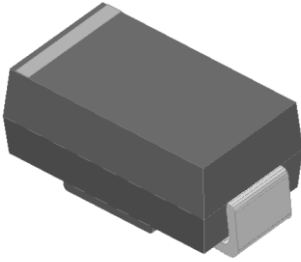


Surface Mount Transient Voltage Suppressor Diodes

Uni-directional



Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional
- 400 W peak pulse power capability with a 10/1000 μ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meets MSL level 1
- Component in accordance to RoHS

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, telecommunication.

Mechanical Data

- **Package:** DO-214AC (SMA)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** For uni-directional types the band denotes cathode end

■Maximum Ratings (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform ^{(1) (2)} (Fig.1)	P _{PPM}	W	400
Peak pulse current, with a 10/1000us waveform ⁽¹⁾	I _{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at TL=75°C	P _D	W	1.0
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I _{FSM}	A	40
Operating junction and storage temperature range	T _J , T _{STG}	°C	-55 to +150
Electrostatic Discharge (IEC61000-4-2 air discharge)	ESD	KV	±30
Electrostatic Discharge (IEC61000-4-2 contact discharge)			



SMAJ3.3A

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage @ at 25A for unidirectional only ⁽³⁾	V _F	V	3.5
Maximum instantaneous forward voltage @ at 1A for unidirectional only	V _F	V	1.5

■Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal resistance(Typical)	R _{θJL}	°C/W	junction to lead	30
	R _{θJA}	°C/W	junction to ambient	120

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above T_A = 25°C per Fig.2.
- (2) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

Part Number	Breakdown Voltage V _{BR} @I _T			Maximum Reverse Leakage I _R @ V _{RWM} (μA)	Working Peak Reverse Voltage V _{RWM} (V)	Maximum Reverse Surge Current I _{PP} ⁽⁵⁾ (A)	Maximum Clamping Voltage V _c @ I _{PP} (V)
	Min(V)	Max (V)	I _T ⁽⁴⁾ (mA)				
SMAJ3.3A	5.2	6.5	10	150	3.3	54.8	7.3

- (4) Pulse test: t_p≤50ms
- (5) Surge current waveform per Fig. 3 and derated per Fig.2.

■ Characteristics (Typical)

FIG1:Peak Pulse Power Rating Curve

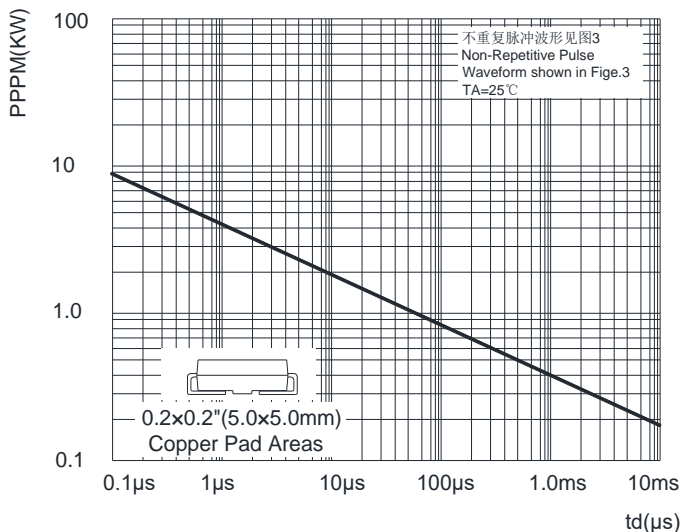
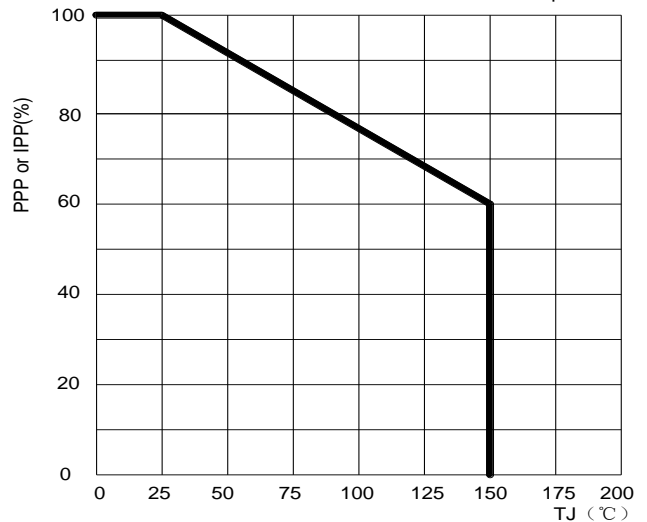


FIG2: Pulse Power or Current vs. Initial Junction Temperature





SMAJ3.3A

FIG3: Pulse Waveform

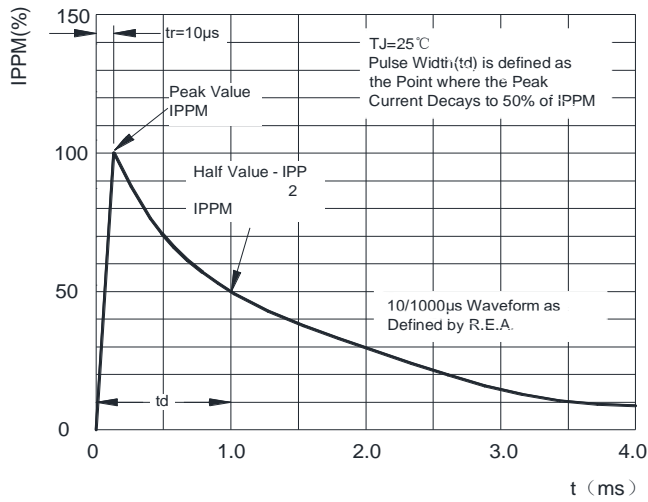


FIG4: Typical Transient Thermal Impedance

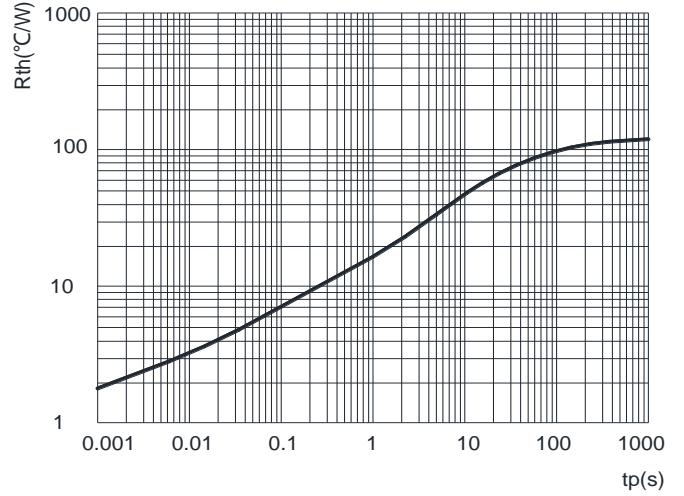
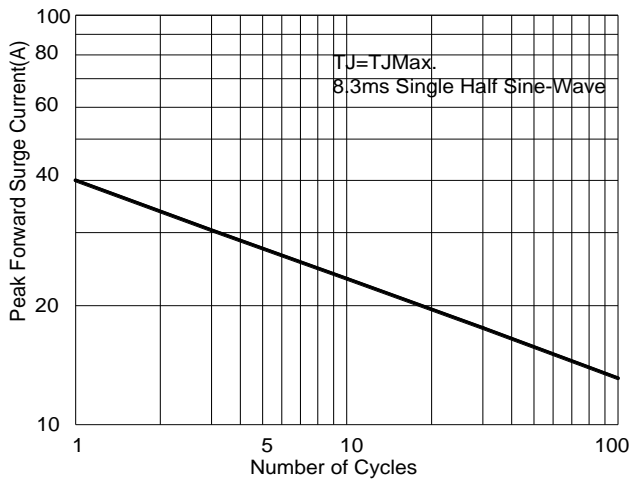


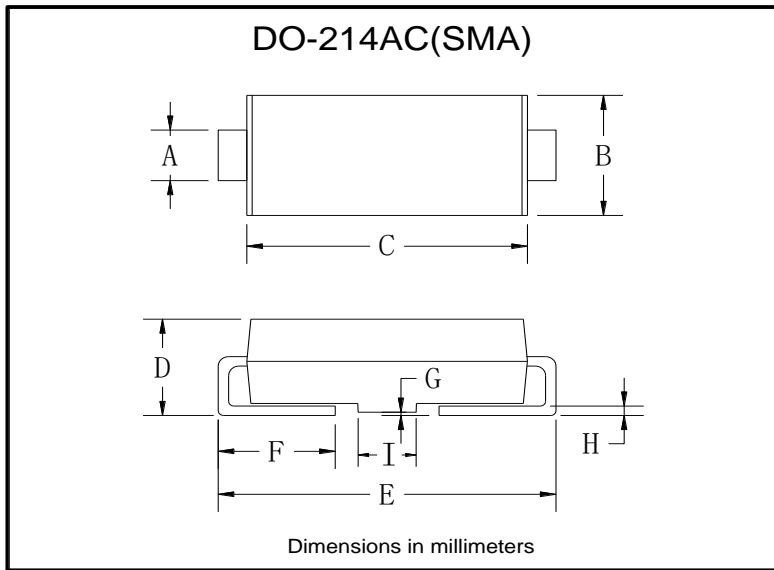
FIG5: Maximum Non-Repetitive Surge Current



Ordering Information (Example)

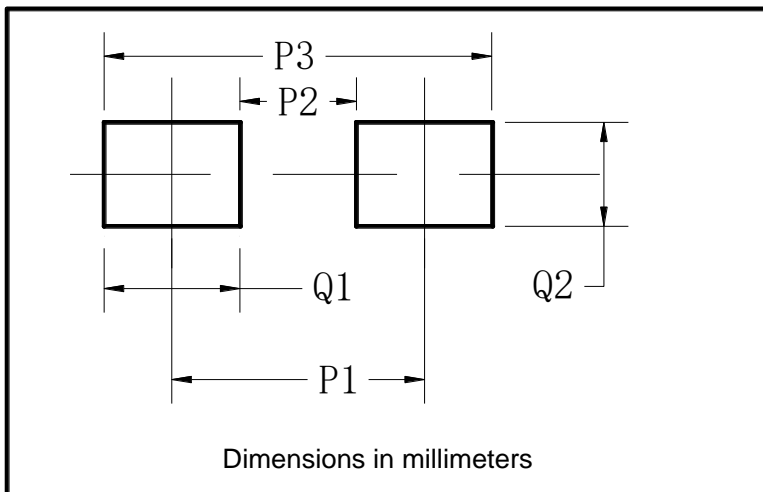
PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMAJ3.3A	F1	Approximate 0.059	5000	/	80000	13" reel
SMAJ3.3A	F2	Approximate 0.059	7500	/	120000	13" reel
SMAJ3.3A	F3	Approximate 0.059	7500	/	60000	13" reel
SMAJ3.3A	F4	Approximate 0.059	1800	7200	57600	7" reel
SMAJ3.3A	F5	Approximate 0.059	2000	8000	64000	7" reel
SMAJ3.3A	F6	Approximate 0.059	5000	/	100000	13" reel

■ Outline Dimensions



DO-214AC(SMA)		
Dim	Min	Max
A	1.25	1.58
B	2.40	2.83
C	4.00	4.75
D	1.90	2.30
E	4.93	5.28
F	0.76	1.41
G	0.05	0.20
H	0.15	0.31
I	1.70	2.10

■ Suggested Pad Layout



DO-214AC(SMA)	
Dim	Millimeters
P1	4.00
P2	1.50
P3	6.50
Q1	2.50
Q2	1.70



SMAJ3.3A

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