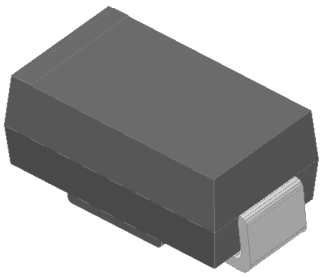
Surface Mount Transient Voltage Suppressor Diodes

Bi-directional



Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Bidirectional
- 400 W peak pulse power capability with a 10/1000 μs 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:** No marking on bi-directional types

■Maximum Ratings (Ta=25℃ 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℃	P_D	W	1.0
Operating junction and storage temperature range	T_J,T_{STG}	℃	-55 to +150
Electrostatic Discharge（IEC61000-4-2 air discharge）	ESD	KV	±30
Electrostatic Discharge（IEC61000-4-2 contact discharge）			

■Thermal Characteristics （Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal resistance(Typical)	$R_{\theta JL}$	℃/W	junction to lead	30
	$R_{\theta JA}$	℃/W	junction to ambient	120

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25℃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℃ 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}(4) (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
	Min(V)	Max (V)	I_T(3)(mA)				
SMAJ3.3CA	5.2	6.5	10	150	3.3	54.8	8.0

(3) Pulse test: t_p≤50ms

(4) Surge current waveform per Fig. 3 and derated per Fig.2.

■ Characteristics (Typical)

FIG1:Peak Pulse Power Rating Curve

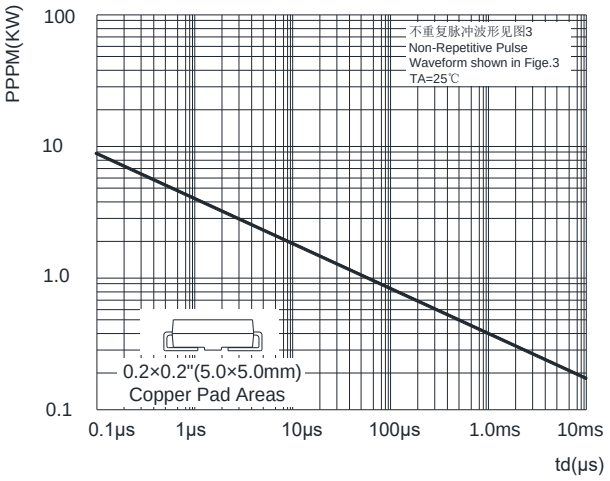


FIG2: Pulse Power or Current vs. Initial Junction Temperature

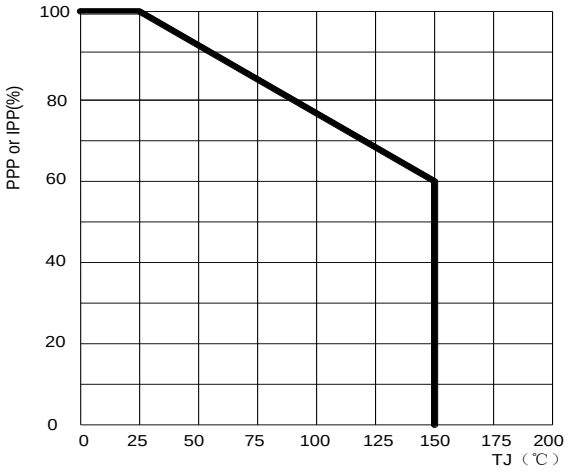


FIG3: Pulse Waveform

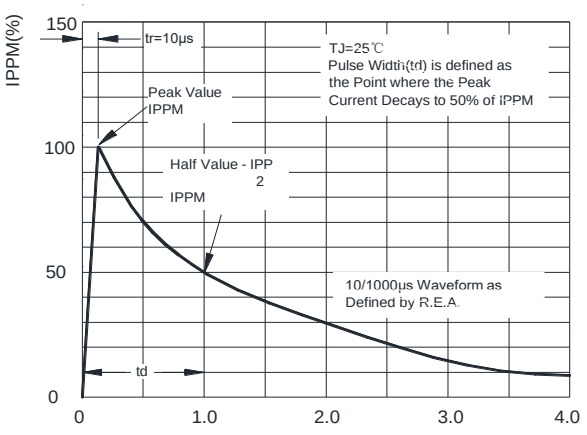


FIG4:Typical Transient Thermal Impedance

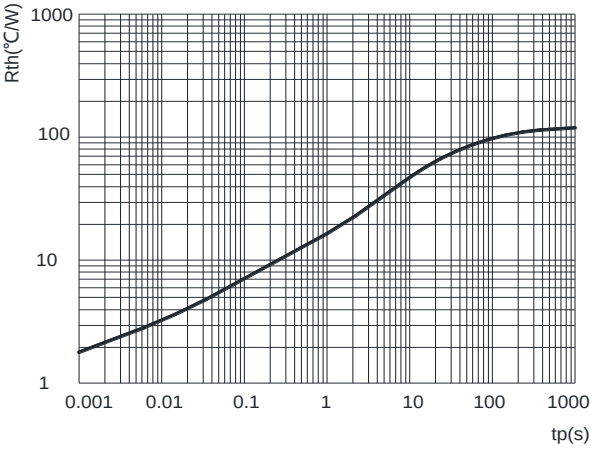
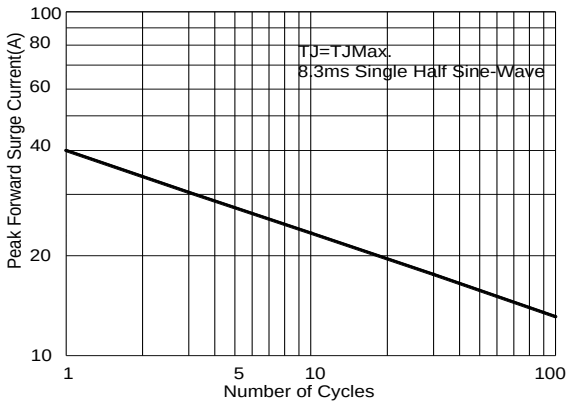


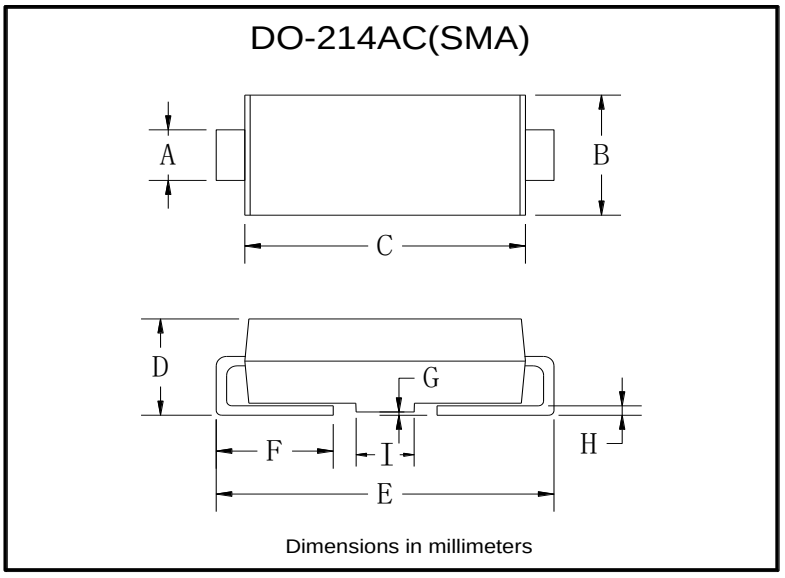
FIG5: Maximum Non-Repetitive Surge Current



■Ordering Information (Example)

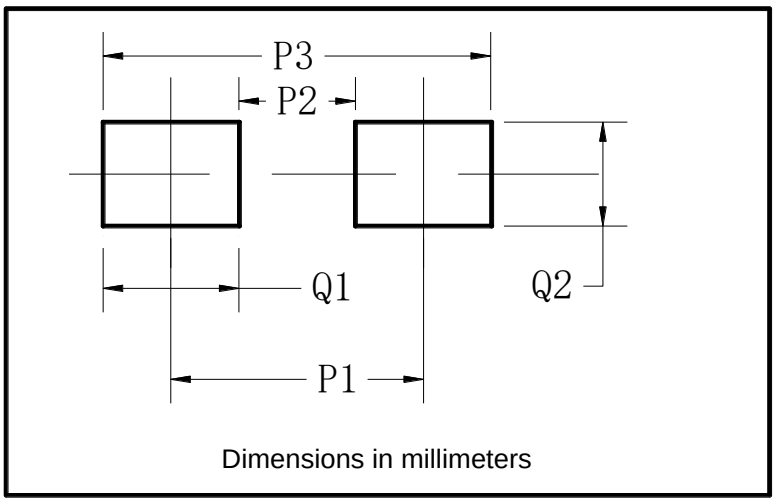
PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMAJ3.3CA	F1	Approximate 0.059	5000	/	80000	13” reel
SMAJ3.3CA	F2	Approximate 0.059	7500	/	120000	13” reel
SMAJ3.3CA	F3	Approximate 0.059	7500	/	60000	13” reel
SMAJ3.3CA	F4	Approximate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

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website http:// www.21yangjie.com , or consult your nearest Yangjie's sales office for further assistance.