



E480232

## Features

- Fully Automotive Qualified to AEC-Q101
- For Surface Mount Applications
- Excellent Clamping Capability
- High Temp Soldering: 260°C / 10 Seconds at Terminals
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note 2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- ESD protection of data lines in accordance with IEC 61000-4-2, ±30kV(Air), ±30kV (Contact)

## Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Surge Current with a 10/1000µs Waveform (Note 3)	$I_{PPM}$	See Next Table	A
Peak Pulse Power Dissipation (Note 3)	$P_{PPM}$	400	W
Power Dissipation on Infinite Heatsink at $T_a = 25^\circ\text{C}$	$P_D$	1.25	W
Peak Forward Surge Current Unidirectional Only (Note 4)	$I_{FSM}$	40	A

### Note:

- Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
- Non-repetitive current pulse, per Fig.3 and derated above  $T_A = 25^\circ\text{C}$  per Fig.4.
- 8.3ms, single half sine wave duty cycle = 4 pulses per Minutes maximum.

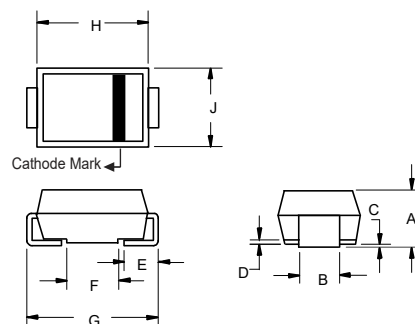
## Internal Structure

Description	Simplified outline	Graphic symbol
Uni-directional		
Bi-directional		

XXXX = Marking code YYWW = Date Code

**400 Watt TVS**  
**250 to 440**  
**Volts**

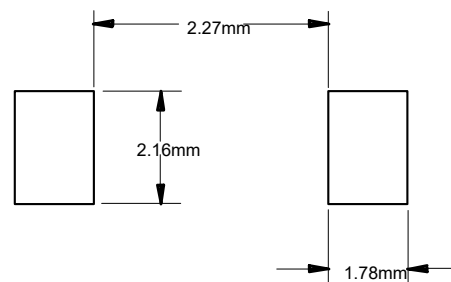
**SMA (DO-214AC)**  
**LEAD FRAME**



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.075	0.096	1.90	2.44	
B	0.050	0.064	1.27	1.63	
C	0.002	0.008	0.051	0.203	
D	---	0.020	---	0.51	
E	0.030	0.060	0.76	1.52	
F	0.065	0.091	1.65	2.32	
G	0.189	0.220	4.80	5.59	
H	0.157	0.187	4.00	4.75	
J	0.090	0.115	2.25	2.92	

SUGGESTED SOLDER PAD LAYOUT



## Thermal Characteristics

Parameter	Symbol	Value	Unit
Operating Junction Temperature Range	$T_J$	-55 to +175	$^{\circ}\text{C}$
Storage Temperature Range	$T_{\text{STG}}$	-55 to +175	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Lead	$R_{\theta\text{JL}}$	30	$^{\circ}\text{C}/\text{W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta\text{JA}}$	120	$^{\circ}\text{C}/\text{W}$
Typical Thermal Resistance Junction to Case	$R_{\theta\text{JC}}$	50	$^{\circ}\text{C}/\text{W}$

## Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC Part Number		Working Peak Reverse Voltage	Breakdown Voltage $V_{\text{BR}}$ @ $I_T$			Maximum Clamping Voltage @ $I_{\text{PP}}$	Maximum Reverse Surge Current	Maximum Reverse Leakage @ $V_{\text{RWM}}$	Marking Code	
(Uni)	(Bi)	$V_{\text{RWM}}(\text{V})$	Min (V)	Max (V)	$I_T(\text{mA})$	$V_C(\text{V})$	$I_{\text{PP}}(\text{A})$	$I_R(\mu\text{A})$	Uni	Bi
SMAJ250AQ	SMAJ250CAQ	250.0	279.00	309.00	1	405.0	1.0	1	SZ	VZ
SMAJ300AQ	SMAJ300CAQ	300.0	335.00	371.00	1	486.0	0.8	1	TE	UE
SMAJ350AQ	SMAJ350CAQ	350.0	391.00	432.00	1	567.0	0.7	1	TG	UG
SMAJ400AQ	SMAJ400CAQ	400.0	447.00	494.00	1	648.0	0.6	1	TK	UK
SMAJ440AQ	SMAJ440CAQ	440.0	492.00	543.00	1	713.0	0.6	1	TM	UM

## Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

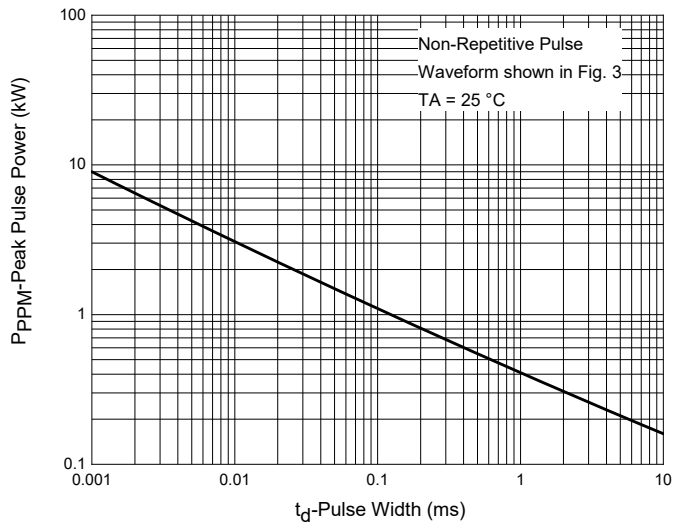


Fig. 2 - Typical Junction Capacitance

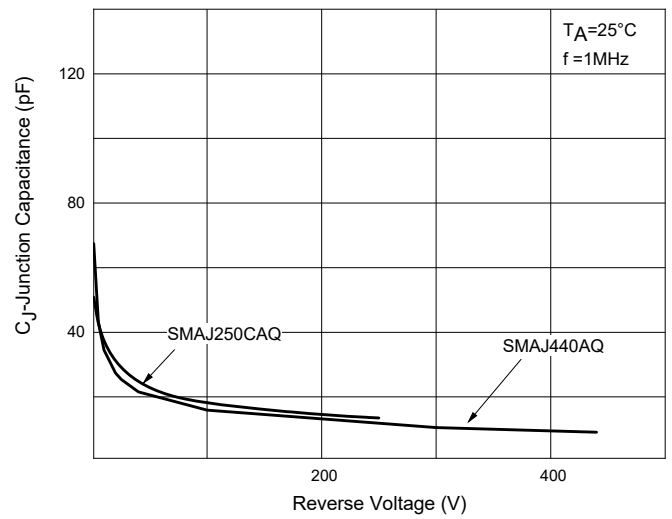


Fig. 3 - Pulse Waveform

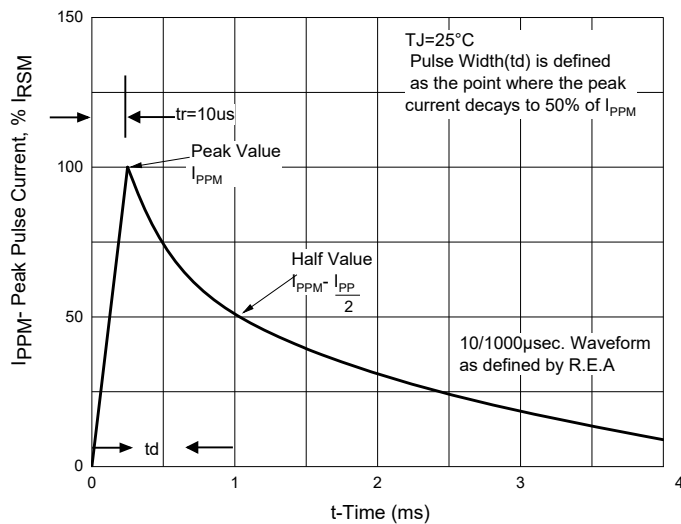


Fig. 4 - Pulse Derating Curve

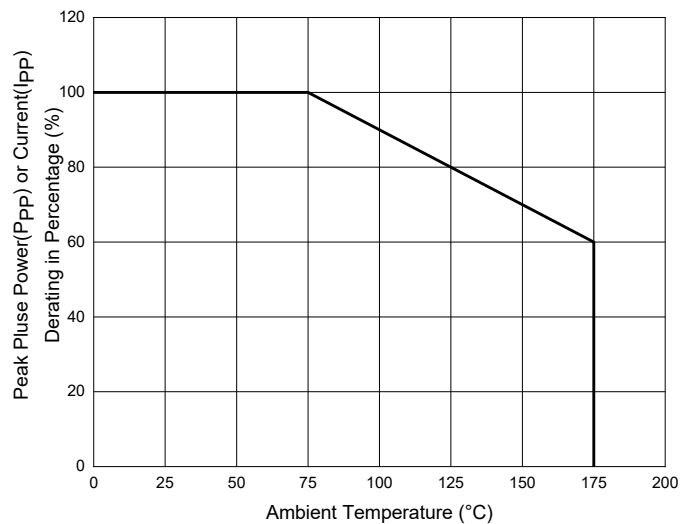


Fig. 5 - Peak Forward Voltage Drop vs Peak Forward Current

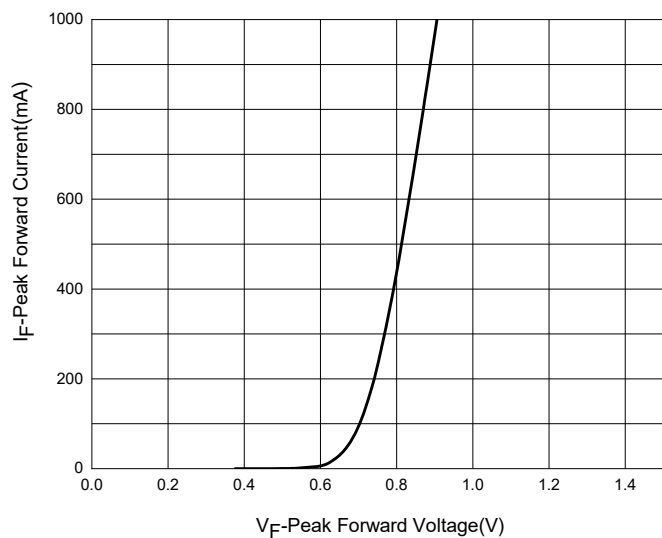
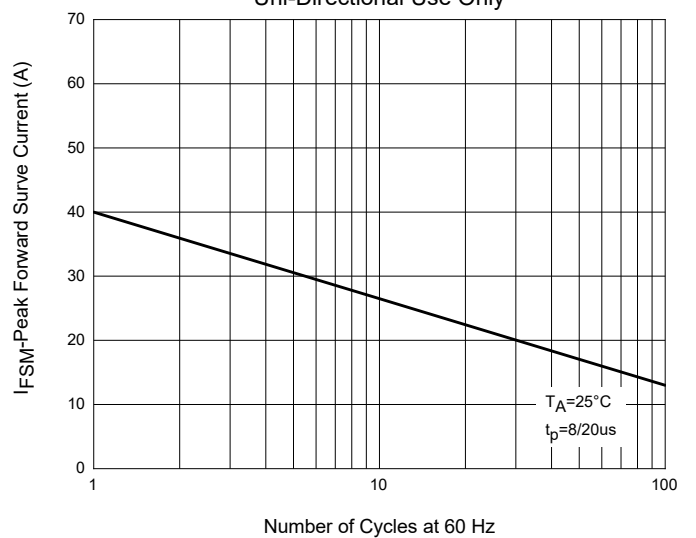


Fig. 6 - Maximum Non-Repetitive Forward Surge Current  
Uni-Directional Use Only



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:5Kpcs/Reel

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