

## Surface Mount PAR<sup>®</sup> Transient Voltage Suppressors

High Temperature Stability and High Reliability Conditions



DO-214AC (SMA)

PRIMARY CHARACTERISTICS	
$V_{BR}$	6.8 V to 43 V
$P_{PPM}$	400 W
$P_D$	1.0 W
$I_{FSM}$	40 A
$T_J \text{ max.}$	185 °C

### 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.

### FEATURES

- Junction passivation optimized design passivated anisotropic rectifier technology
- $T_J = 185 \text{ °C}$  capability suitable for high reliability and automotive requirement
- Available in uni-directional polarity only **RoHS<sub>c</sub>**
- 400 W peak pulse power capability with a 10/1000  $\mu\text{s}$  waveform, repetitive rate (duty cycle): 0.01 %
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

### MECHANICAL DATA

**Case:** DO-214AC (SMA)

Molding compound meets UL 94 V-0 flammability rating

Base P/NHE3 - RoHS compliant, AEC-Q101 qualified

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes cathode end

### Notes

- (1) Non-repetitive current pulse, per fig. 3 and derated above  $T_A = 25 \text{ °C}$  per fig. 2
- (2) Mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pads attached to each terminal
- (3) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum
- (4) Mounted on minimum recommended pad layout

# TPSMA6.8 thru TPSMA43A

Vishay General Semiconductor

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ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TPSMA6.8AHE3/61T <sup>(1)</sup>	0.064	61T	1800	7" diameter plastic tape and reel
TPSMA6.8AHE3/5AT <sup>(1)</sup>	0.064	5AT	7500	13" diameter plastic tape and reel

**Note**

<sup>(1)</sup> AEC-Q101 qualified

### RATINGS AND CHARACTERISTICS CURVES

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

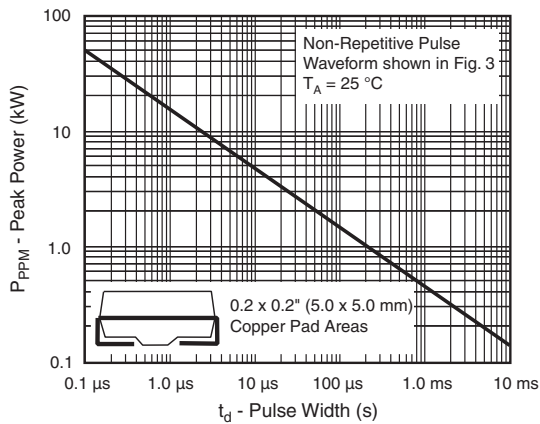


Figure 1. Peak Pulse Power Rating Curve

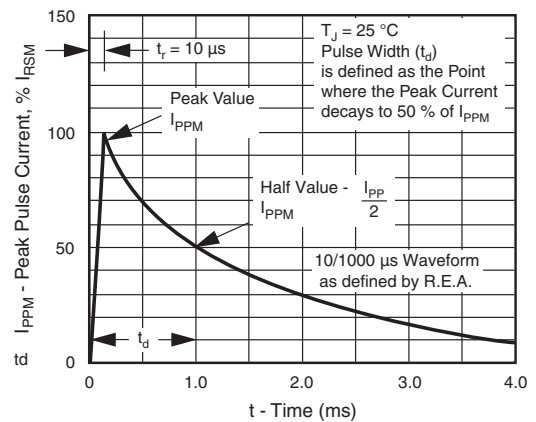


Figure 3. Pulse Waveform

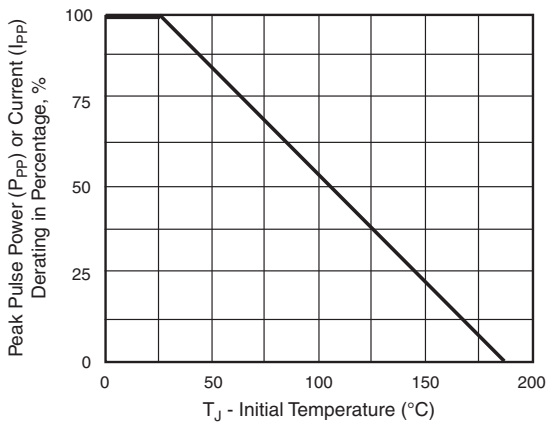


Figure 2. Pulse Power or Current vs. Initial Junction Temperature

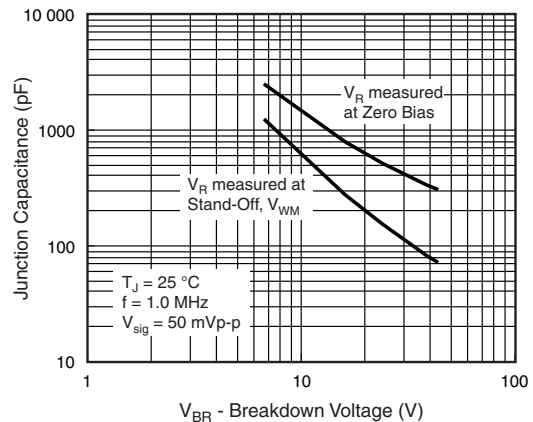


Figure 4. Typical Junction Capacitance

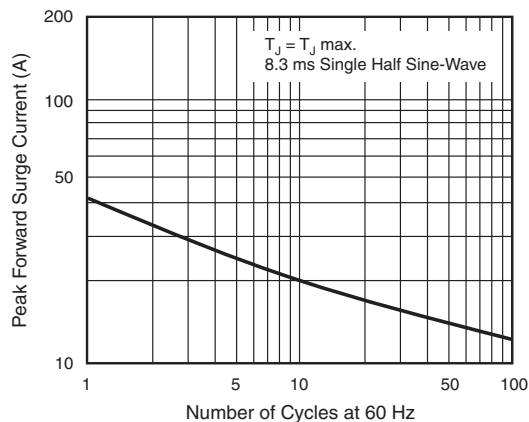
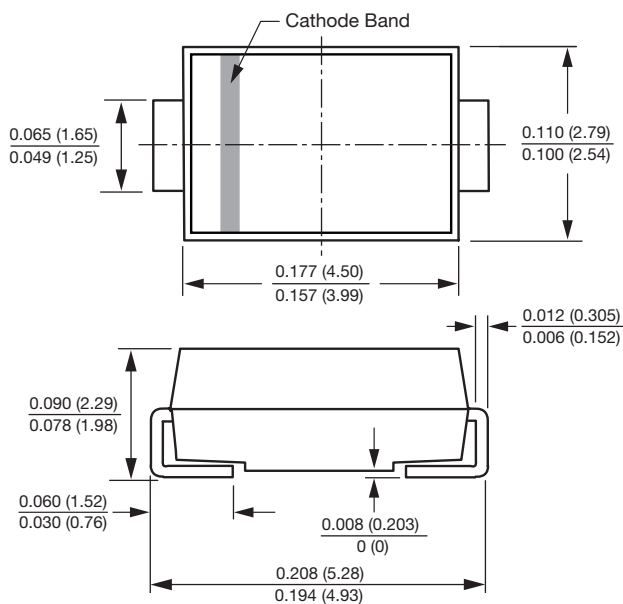


Figure 5. Maximum Non-Repetitive Peak Forward Surge Current

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-214AC (SMA)



### Mounting Pad Layout

