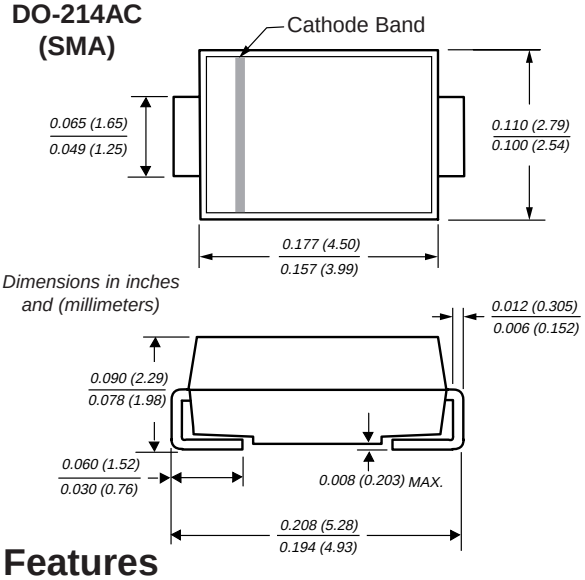
Vishay Semiconductors
formerly General Semiconductor

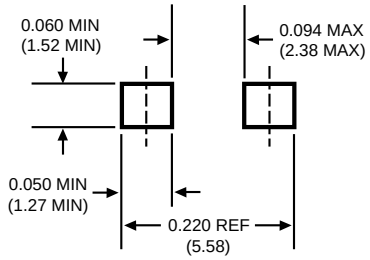
Surface Mount TRANSZORB® Transient Voltage Suppressors

Steady State Power 1W
Peak Pulse Power 300W
Reverse Voltage 530,550V

DO-214AC (SMA)



Mounting Pad Layout



Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Protects power IC controllers such as TOPSwitch®
- Glass passivated junction
- High temperature soldering guaranteed: 250°C/10 seconds at terminals
- Excellent clamping capability
- Available in unidirectional only

Mechanical Data

Case: JEDEC DO-214AC molded plastic body over passivated chip

Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: The band denotes the cathode, which is positive with respect to the anode under normal TVS operation

Mounting Position: Any **Weight:** 0.002 oz., 0.064 g

Packaging Codes – Options (Antistatic):

51 – 1K per Bulk box, 20K/carton
61 – 1.8K per 7" plastic Reel (12mm tape), 36K/carton
5A – 7.5K per 13" plastic Reel (12mm tape), 75K/carton

Maximum Ratings and Thermal Characteristics T_A = 25°C unless otherwise noted.

Parameter	Symbol	SMAJ530	SMAJ550	Unit
Device marking code		HD	SB	
Steady state power dissipation(3)	$P_{M(AV)}$	1.0		W
Peak pulse power dissipation(1)(2)(5) (Fig. 1)	P_{PPM}	Minimum 300		W
Stand-off voltage	V_{WM}	477	495	V
Typical thermal resistance junction-to-lead	$R_{\theta JL}$	27		°C/W
Typical thermal resistance junction-to-ambient	$R_{\theta JA}$	75		°C/W
Operating junction and storage temperature range	T_J, T_{STG}	–55 to +150		°C

Electrical Characteristics T_A = 25°C unless otherwise noted.

Minimum breakdown voltage at 100µA	$V_{(BR)}$	530	550	V
Max. clamping voltage at 400mA, 10/1000µs-waveform	Vc	760		V
Maximum DC reverse leakage current at V_{WM}	I_D	1.0		µA
Typical temperature coefficient of $V_{(BR)}$		650		mV°C
Typical capacitance(4) at 0V at 200V	C_J	90 7.5		pF

Notes: (1) Non repetitive current pulse per Fig.3 and derated above 25°C per Fig. 2
(2) Mounted on 5.0mm² copper pads to each terminal
(3) Lead temperature at 75°C = T_L
(4) Measured at 1MHz
(5) Peak pulse power waveform is 10/1000µs.

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Fig. 1 – Peak Pulse Power Rating Curve

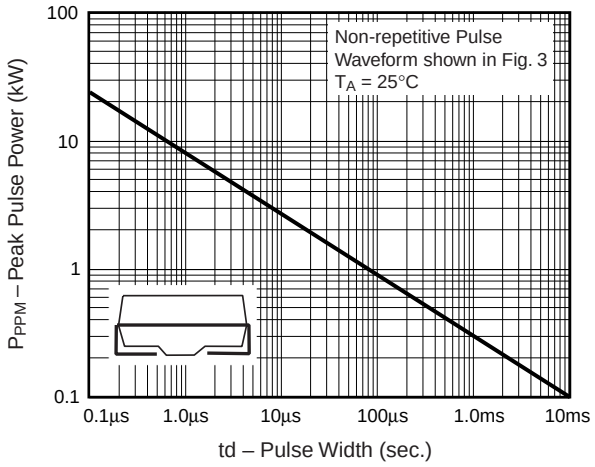


Fig. 2 – Pulse Derating Curve

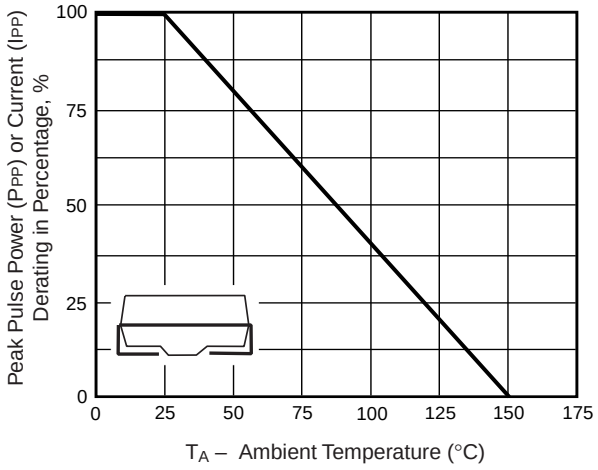
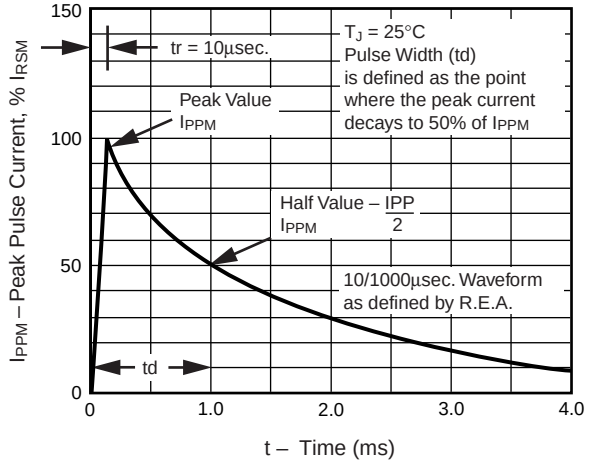


Fig. 3 – Pulse Waveform



Application Notes

- Respect Thermal Resistance (PCB Layout) – as the temperature coefficient also contributes to the clamping voltage.
- Select minimum breakdown voltage, so you get acceptable power dissipation and PCB tie point temperature. Devices with higher breakdown voltage will have a shorter conduction time and will dissipate less power.
- Clamping voltage is influenced by internal resistance – design approximation is 7V per 100mA slope.
- Keep temperature of TVS lower than TOPSwitch® as a recommendation.
- Maximum current is determined by the maximum T_J and can be higher than 300mA. Contact supplier for different clamping voltage / current arrangements.
- Minimum breakdown voltage can be customized for other applications. Contact supplier.
- TOPSwitch® is a registered trademark of Power Integrations, Inc.