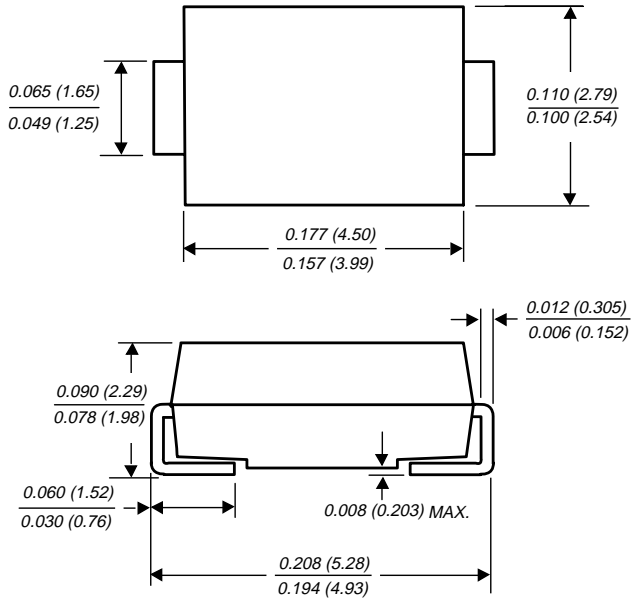


SMAJ530 AND SMAJ550

SURFACE MOUNT TRANSZORB™ TRANSIENT VOLTAGE SUPPRESSOR
Steady State Power - 1Watt Reverse Voltage - 530, 550 Volts

DO-214AC



Dimensions in inches and (millimeters)

FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ Protects 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 color band denotes the cathode, which is positive with respect to the anode under normal TVS operation

Mounting Position: Any

Weight: 0.002 ounces, 0.064 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOLS	SMAJ530	SMAJ550	UNITS
Device marking code		HD	SB	
Steady state power dissipation (NOTE 3)	P _{M(AV)}	1.0		Watts
Peak pulse power dissipation (NOTE 1,2,5, FIG.1)	P _{PPM}	Minimum 300		Watts
Minimum breakdown voltage at 100µA	V _(BR)	530	550	Volts
Maximum clamping voltage at 300mA, 10/1000 µs-waveform	V _c	660		Volts
Stand-off voltage	V _{WM}	477	495	Volts
Maximum DC reverse leakage current at V _{WM}	I _D	5.0		µA
Typical thermal resistance	R _{θJL}	27		°C/W
Typical thermal resistance	R _{θJA}	75		°C/W
Typical temperature coefficient of V _(BR)		650		mV/°C
Typical capacitance (NOTE 4)	C _J	75	45	pF
		at 0V		
		at 200V		
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150		°C

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 per Fig. 5
- (4) Measured at 1MHz
- (5) Peak pulse power waveform is 10/100µS

MAXIMUM RATINGS AND CHARACTERISTIC CURVES SMAJ530 AND SMAJ550

FIG. 1 - PEAK PULSE POWER RATING CURVE

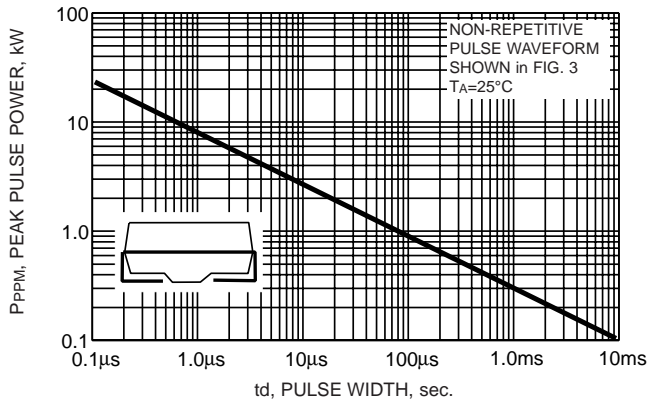


FIG. 2 - PULSE DERATING CURVE

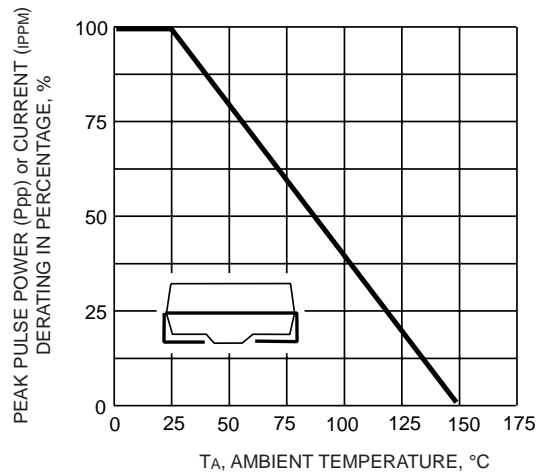
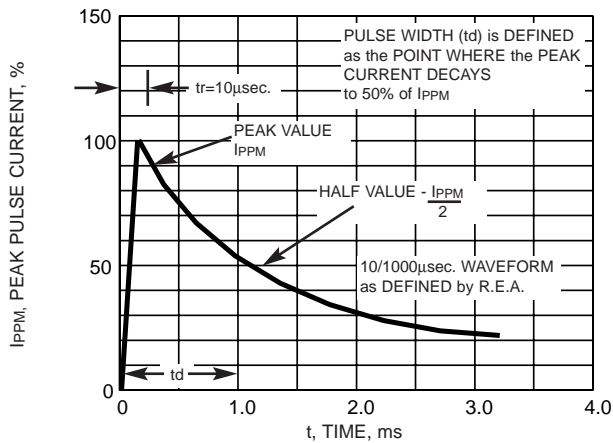


FIG. 3 - PULSE WAVEFORM

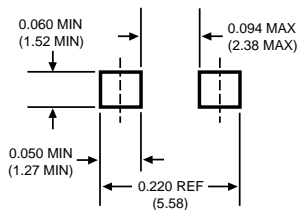


APPLICATION NOTES

RECOMMENDED PAD LAYOUT

The pad dimensions should be 0.010" (2.5mm) longer than the contact size in the lead axis. This allows a solder fillet to form, see figure below. Contact factory for soldering methods.

MODIFIED J-BEND



Dimensions in inches and (millimeters)

- 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.