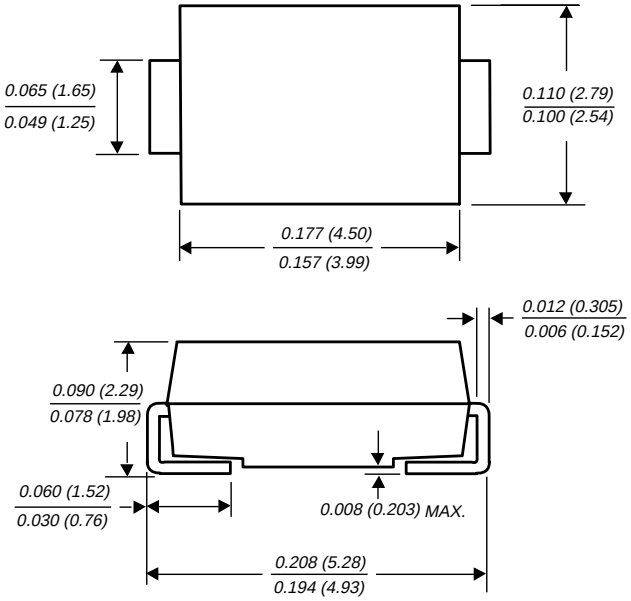
SMAJ530 AND SMAJ550

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
- Exellent 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	Vc	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	$R_{\Theta JL}$	27		°C/W
Typical thermal resistance	$R_{\Theta JA}$	75		°C/W
Typical temperature coefficient of $V_{(BR)}$		650		mV°C
Typical capacitance (NOTE 4) at 0V at 200V	C_J	75 45		pF
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

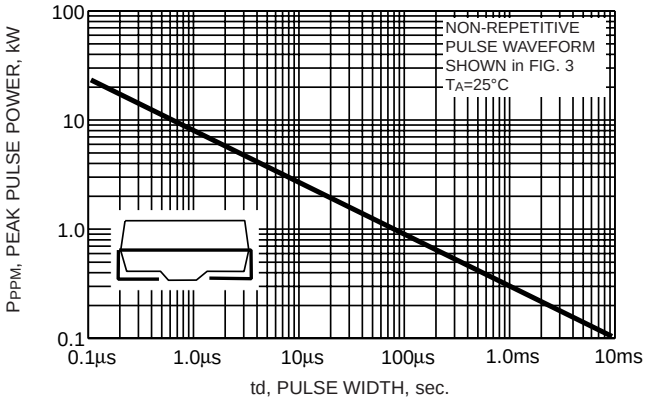


FIG. 2 - PULSE DERATING CURVE

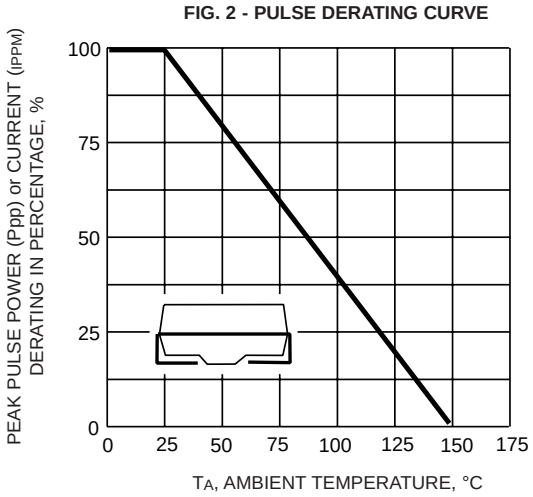
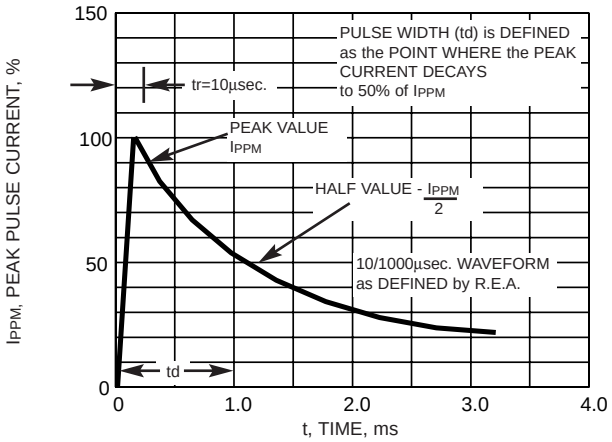


FIG. 3 - PULSE WAVEFORM

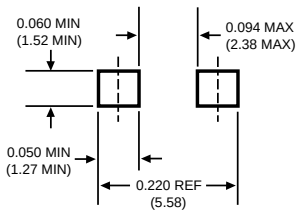


APPLICATION NOTES

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.