GENERAL SEMICONDUCTOR®

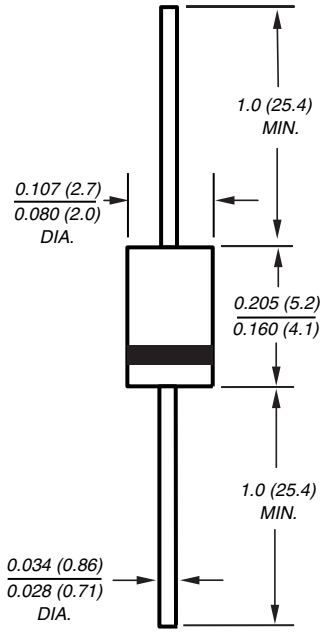
P4KE530 and P4KE550

TRANSZORB® Transient Voltage Suppressors

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

New Product

DO-204AL (DO-41 Plastic)



Dimensions are in inches and (millimeters)

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-204AL molded plastic body over passivated junction

Terminals: Axial leads, 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: 0.012oz., 0.3g

Packaging Codes – Options (Antistatic):

51 – 1K per Bulk box, 10K/carton
54 – 5.5K per 13" paper Reel (52mm horiz. tape), 16.5K/carton
73 – 3K per horiz. tape & Ammo box, 30K/carton

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

Parameter	Symbol	P4KE530	P4KE550	Unit
Steady state power dissipation (Note 3)	$P_{M(AV)}$	1.0		W
Peak pulse power dissipation (Note 1, 2, 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.

Parameter	Symbol	P4KE530	P4KE550	Unit
Minimum breakdown voltage at 100μA	$V_{(BR)}$	530	550	V
Max. clamping voltage at 400mA, 10/1000μs-waveform	Vc	660		V
Maximum DC reverse leakage current at V_{WM}	I_D	5.0		μA
Typical temperature coefficient of $V_{(BR)}$		650		mV°C
Typical capacitance (Note 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) Peak pulse power waveform is 10/1000μs
(3) Lead temperature at 75°C = T_L
(4) Measured at 1MHz

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

Fig. 1 – Peak Pulse Power Rating Curve

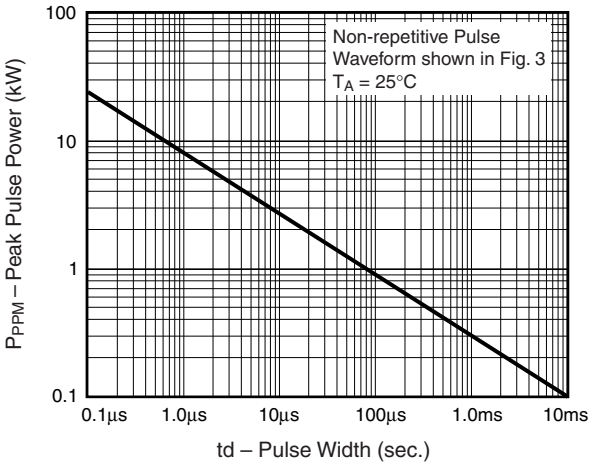


Fig. 2 – Pulse Derating Curve

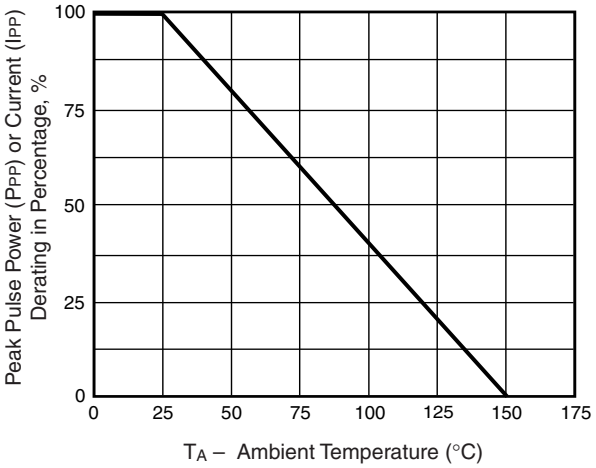
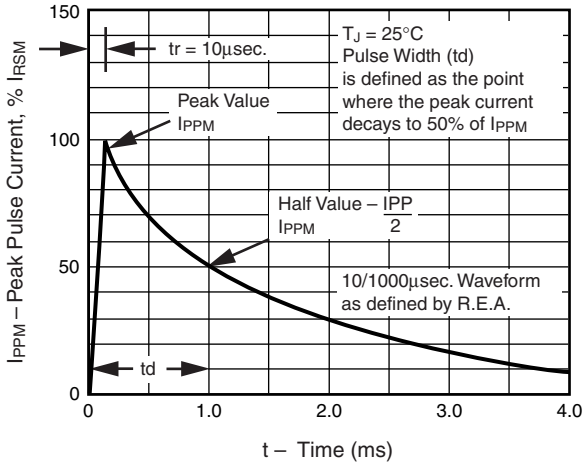


Fig. 3 – Pulse Waveform



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.