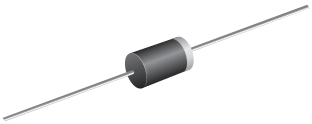
Vishay Semiconductors
formerly General Semiconductor

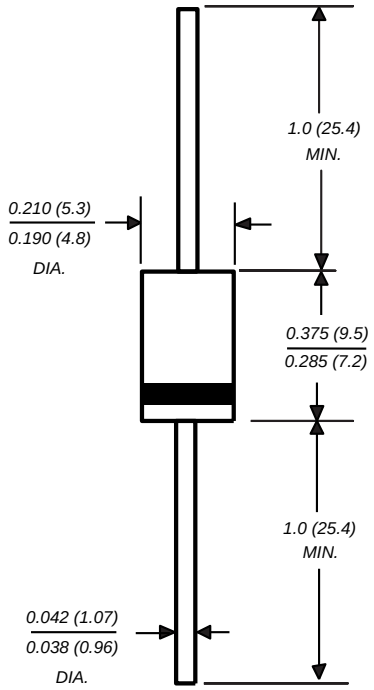
TRANSZORB® Transient Voltage Suppressors



Extended Voltage Range

Stand Off Voltage 5.0 to 18V
Peak Pulse Power 1500W

Case Style 1.5KE



Dimensions in inches and (millimeters)

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 1500W peak pulse power capabililty with a 10/1000µs waveform, repetition rate (duty cycle): 0.05%
- Excellent clamping capability
- Low incremental surge resistance
- Very fast response time
- Ideal for data and bus line applications
- High temperature soldering guaranteed: 265°C/10 seconds, 0.375" (9.5mm) lead length, 5lbs. (2.3 kg) tension
- Includes 1N6373 thru 1N6386

Mechanical Data

Case: Molded plastic body over passivated junction

Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026

Polarity: For unidirectional types the color band denotes the cathode, which is positive with respect to the anode under normal TVS operation

Mounting Position: Any

Weight: 0.045 oz., 1.2 g

Packaging Codes – Options (Antistatic):

51 – 1K per Bulk box, 10K/carton
54 – 1.4K per 13" paper Reel (52mm horiz. tape), 4.2K/carton
73 – 1K per horiz. tape & Ammo box, 10K/carton

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

Parameter	Symbol	Limit	Unit
Peak pulse power dissipation with a 10/1000µs waveform(1) (Fig. 1)	P_{PPM}	Minimum 1500	W
Peak pulse current wih a 10/1000µs waveform(1) (Fig. 3)	I_{PPM}	See Table 1 & 2	A
Steady state power dissipation, T_L = 75°C, at lead lengths 0.375" (9.5mm)	$P_{M(AV)}$	6.5	W
Peak forward surge current, 8.3ms single half sine-wave unidirectional only(2)	I_{FSM}	200	A
Maximum instantaneous forward voltage at 100A for unidirectional only	V_F	3.5	V
Operating junction and storage temperature range	T_J, T_{STG}	–55 to +175	°C

Notes: (1) Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig. 2
(2) 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum

Electrical Characteristics (JEDEC Registered Data) Table 1 – Unidirectional Types

Ratings at 25°C ambient temperature unless otherwise specified.

JEDEC Type Number	General Semiconductor Part Number	Stand-Off Voltage V_{WM} (V)	Minimum[3] Breakdown Voltage at 1.0mA $V_{(BR)}$ (V)	Maximum Reverse Leakage at V_{WM} I_D (µA)	Maximum Clamping Voltage at I_{PP} = 1.0A Vc (V)	Maximum Clamping Voltage at I_{PP} = 10A Vc (V)	Maximum Peak Pulse Current I_{PP} (A)
1N6373[2]	ICTE-5[2]	5.0	6.0	300	7.1	7.5	160
1N6374	ICTE-8	8.0	9.4	25.0	11.3	11.5	100
1N6375	ICTE-10	10.0	11.7	2.0	13.7	14.1	90
1N6376	ICTE-12	12.0	14.1	2.0	16.1	16.5	70
1N6377	ICTE-15	15.0	17.6	2.0	20.1	20.6	60
1N6378	ICTE-18	18.0	21.2	2.0	24.2	25.2	50

Electrical Characteristics (JEDEC Registered Data) Table 2 – Bidirectional Types

Ratings at 25°C ambient temperature unless otherwise specified.

JEDEC Type Number	General Semiconductor Part Number	Stand-Off Voltage V_{WM} (V)	Minimum[3] Breakdown Voltage at 1.0mA $V_{(BR)}$ (V)	Maximum Reverse Leakage at V_{WM} I_D (µA)	Maximum Clamping Voltage at I_{PP} = 1.0A Vc (V)	Maximum Clamping Voltage at I_{PP} = 10A Vc (V)	Maximum Peak Pulse Current I_{PP} (A)
1N6382	ICTE-8C	8.0	9.4	50.0	11.4	11.6	100
1N6383	ICTE-10C	10.0	11.7	2.0	14.1	14.5	90
1N6384	ICTE-12C	12.0	14.1	2.0	16.7	17.1	70
1N6385	ICTE-15C	15.0	17.6	2.0	20.8	21.4	60
1N6386	ICTE-18C	18.0	21.2	2.0	24.8	25.5	50

Notes:

(1) " C " Suffix indicates bi-directional

(2) ICTE-5 and 1N6373 are not available as bi-directional

(3) The minimum breakdown voltage as shown takes into consideration the ±1 Volt tolerance normally specified for power supply regulation on most integrated circuit manufacturers data sheets. Please consult factory for devices that require reduced clamping voltages where tighter regulated power supply voltages are employed.

(4) Clamping Factor: 1.33 at full rated power; 1.20 at 50% rated power; Clamping Factor: the ratio of the actual Vc (Clamping Voltage) to the $V_{(BR)}$ (Breakdown Voltage) as measured on a specific device.

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

Fig. 1 – Peak Pulse Power Rating Curve

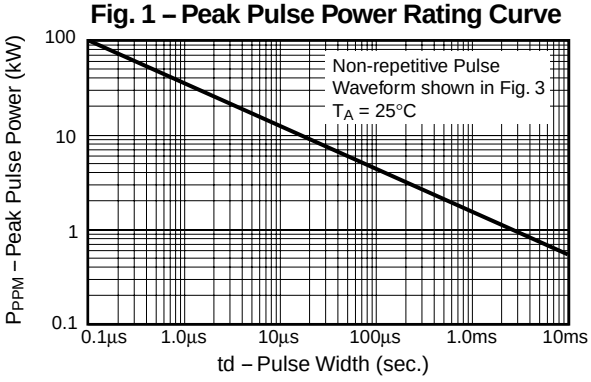


Fig. 2 – Pulse Derating Curve

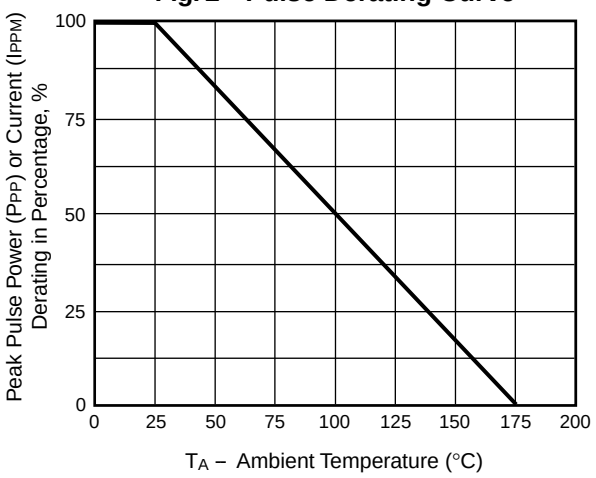


Fig. 3 – Pulse Waveform

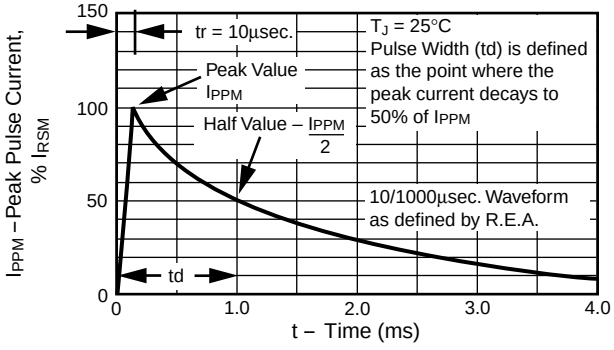


Fig. 4 – Typical Junction Capacitance Uni-Directional

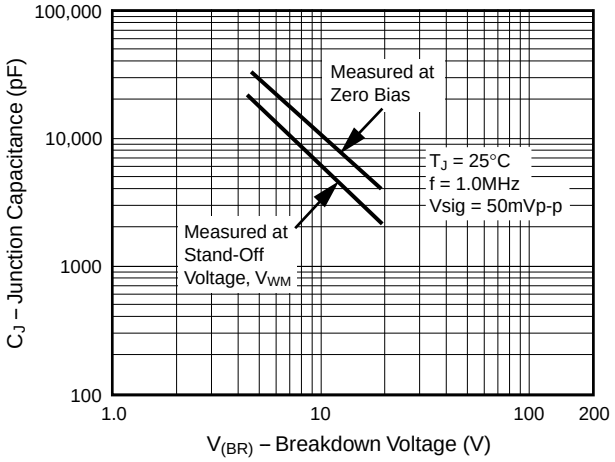


Fig. 5 – Typical Junction Capacitance

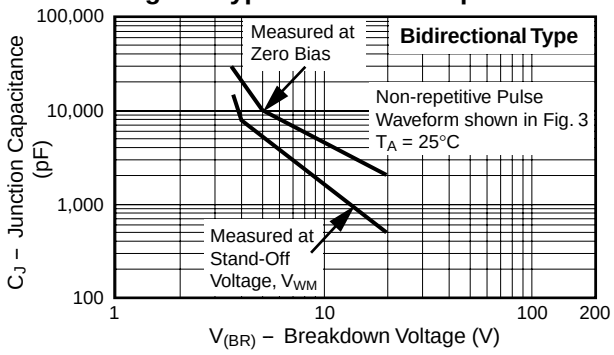


Fig. 6 – Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

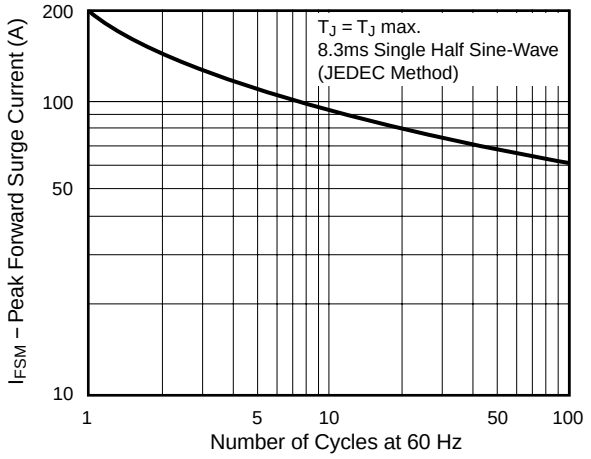
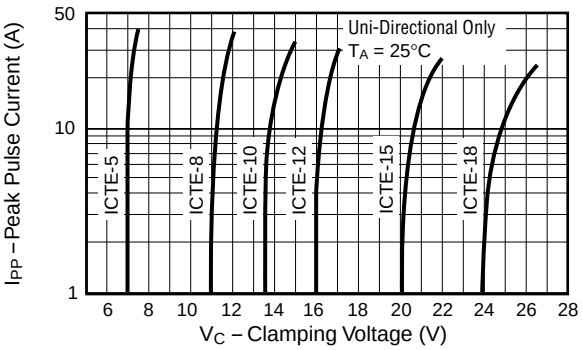


Fig. 7 – Typical Characteristics Clamping Voltage



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