

POWER DISCRETES

Description

The 1N64xx series of transient voltage suppressors are designed to protect military and commercial electronic equipment from overvoltages caused by lightning, ESD, EFT, inductive load switching, and EMP. These devices are constructed using a p-n junction TVS diode in a hermetically sealed, voidless glass package. The hermetically sealed package provides high reliability in harsh environmental conditions. TVS diodes are further characterized by their high surge capability, low operating and clamping voltages, and a theoretically instantaneous response time. This makes them ideal for use as board level protection for sensitive semiconductor components. These devices are DESC QPL qualified to MIL-S-19500/551.

Features

- ◆ 500 Watts peak pulse power ($t_p = 10/1000\mu s$)
- ◆ Voidless hermetically sealed glass package
- ◆ Metallurgically bonded
- ◆ High surge capacity
- ◆ Unidirectional
- ◆ Available in JTX, and JTXV versions per MIL-S-19500/551

Applications

- ◆ Aerospace and industrial electronics
- ◆ Board level protection
- ◆ Airborne systems
- ◆ Shipboard systems
- ◆ Ground systems

Mechanical Characteristics

- ◆ Hermetically sealed glass package

Absolute Maximum Ratings

| Rating | Symbol | Value | Units |
|---|-----------|-------------|-------|
| Peak Pulse Power ($t_p = 10 \times 1000\mu s$) | Ppk | 500 | Watts |
| Storage Temperature Range | T_{STG} | -65 to +175 | °C |
| Steady-State Power Dissipation @ TL = 75°C (3/8") | PD | 3 | Watts |

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Electrical Characteristics

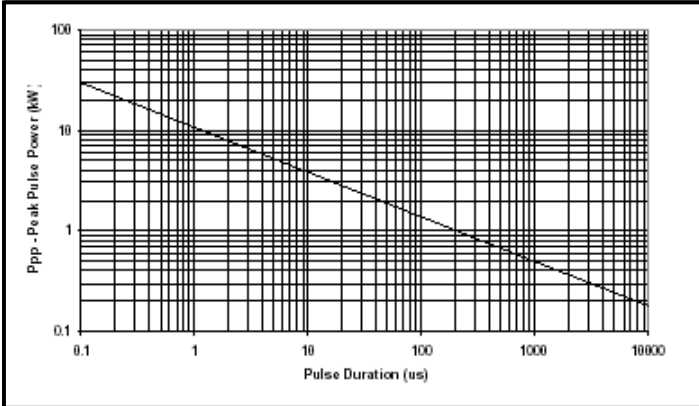
 Electrical specifications @ $T_A = 25^\circ\text{C}$ unless otherwise specified.

| Device Type | Reverse Standoff Voltage V_{RWM} | Reverse Leakage Current I_R | Minimum Breakdown Voltage $V_{BR} @ I_T$ | Test Current I_T | Maximum Clamping Voltage $V_C @ I_{PP}$ | Peak Pulse Current I_{PP} $T_P = 1\text{mS}$ | Peak Pulse Current I_{PP} $T_P = 20\mu\text{S}$ | Temp. Coef. of V_{BR} αV_Z |
|-------------|---------------------------------------|----------------------------------|---|-----------------------|--|--|---|---|
| | V | μA | V | mA | V | A | A | %/°C |
| 1N6461US | 5 | 3000 | 5.6 | 25 | 9.0 | 56 | 315 | 0.040 |
| 1N6462US | 6 | 2500 | 6.5 | 20 | 11.0 | 46 | 258 | 0.040 |
| 1N6463US | 12 | 500 | 13.6 | 5 | 22.6 | 22 | 125 | 0.050 |
| 1N6464US | 15 | 500 | 16.4 | 5 | 26.5 | 19 | 107 | 0.060 |
| 1N6465US | 24 | 50 | 27.0 | 2 | 41.4 | 12 | 69 | 0.084 |
| 1N6466US | 30.5 | 3 | 33.0 | 1 | 47.5 | 11 | 63 | 0.093 |
| 1N6467US | 40.3 | 2 | 43.7 | 1 | 63.5 | 8 | 45 | 0.094 |
| 1N6468US | 51.6 | 2 | 54.0 | 1 | 78.5 | 6 | 35 | 0.096 |

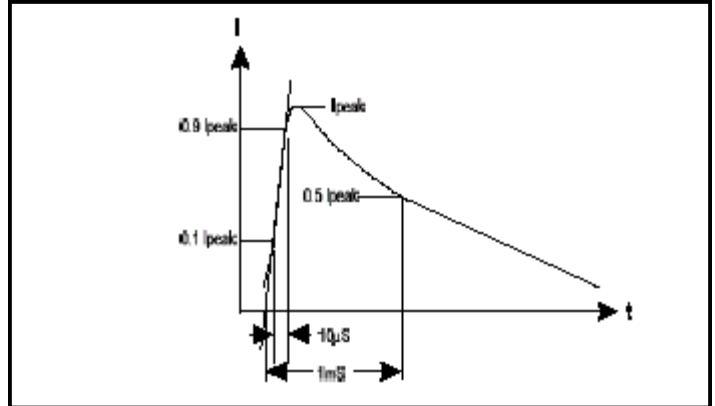
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Electrical Characteristics

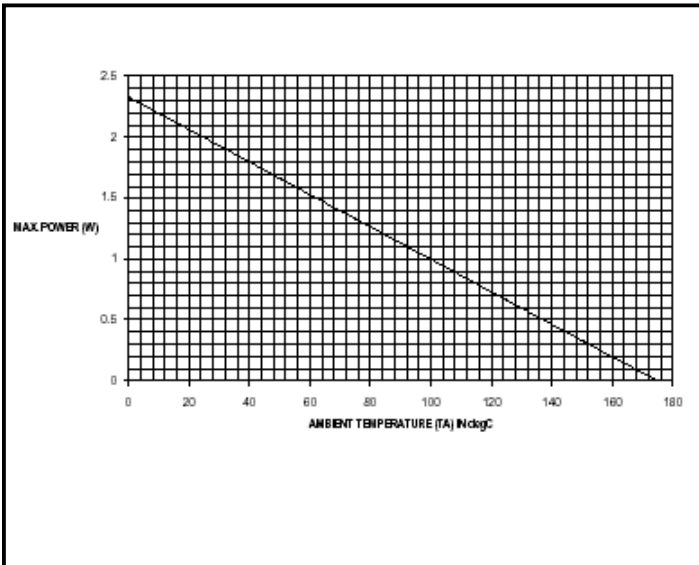
PEAK PULSE POWER vs. PULSE TIME



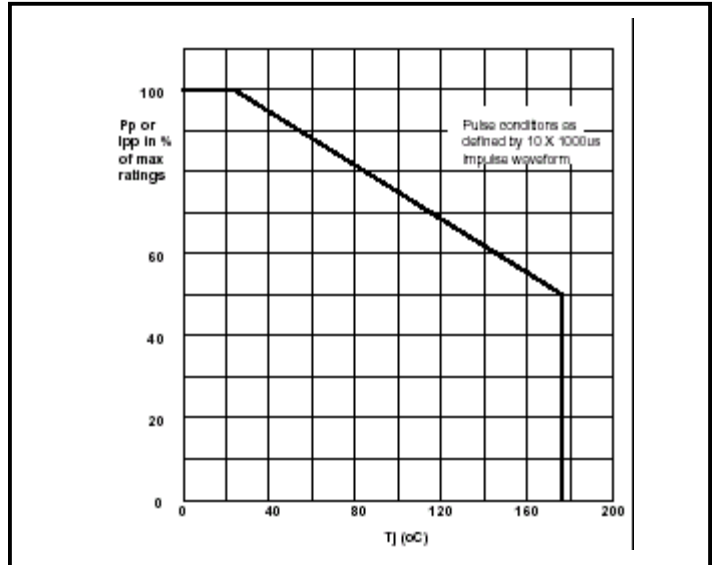
10 x 1000µs IMPULSE WAVEFORM



STEADY STATE DERATING CHARACTERISTICS FOR FREE AIR MOUNTING



PULSE DERATING CURVE



POWER DISCRETES

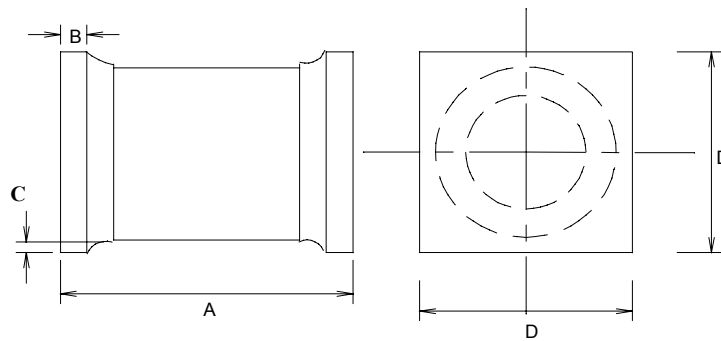
Ordering Information

| Part Number | Description |
|---|-----------------------------------|
| 1N6461US, 1N6462US, 1N6463US, 1N6464US, 1N6465US, 1N6466US, 1N6467US, 1N6468US | Surface Mount (US) ⁽¹⁾ |

Note:

(1) Available in trays and tape and reel packaging. Please consult factory for quantities.

Outline Drawing



| | Dimensions | | | |
|---|---------------------|-------|-------------|------|
| | 1N6461US - 1N6468US | | | |
| | Inches | | Millimeters | |
| | MIN | MAX | MIN | MAX |
| A | 0.200 | 0.225 | 5.08 | 5.72 |
| B | 0.019 | 0.028 | 0.48 | 0.71 |
| C | 0.003 | - | 0.08 | - |
| D | 0.137 | 0.148 | 3.48 | 3.76 |

Notes:

- (1) Dimensions are in inches.
- (2) Metric equivalents are given for general information only.

Contact Information

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