

Features

- For Sensitive ESD Protection
- Low Leakage Current
- Ultra Low Clamping Voltage
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

| | | |
|--------------------------------------|------------------|-----------------|
| IEC61000-4-2(ESD) | Air | ±30KV |
| | Contact | ±30KV |
| Peak Pulse Power (8/20µs) | PPK | 300W |
| Peak Pulse Current (8/20µs)(Note 2) | I _{PP} | 7A |
| Operating Junction Temperature Range | T _J | -40°C to +125°C |
| Storage Temperature Range | T _{STG} | -55°C to +150°C |

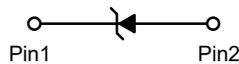
Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Non-repetitive current pulse 8/20 µs exponential decay waveform according to IEC61000-4-5.

Marking Information

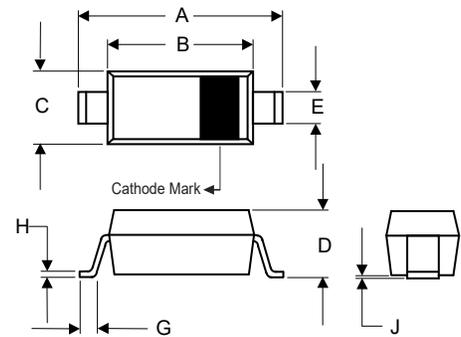


Internal Structure



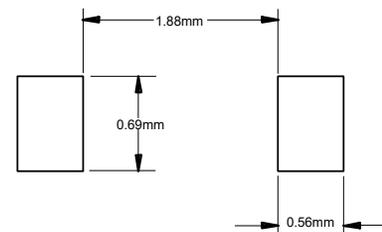
ESD Protection Device

SOD-323



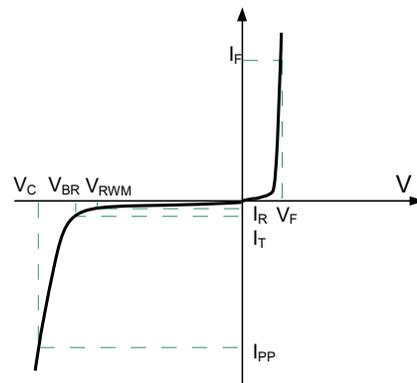
| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|-------|------|------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | 0.090 | 0.107 | 2.30 | 2.70 | |
| B | 0.063 | 0.071 | 1.60 | 1.80 | |
| C | 0.045 | 0.053 | 1.15 | 1.35 | |
| D | 0.031 | 0.045 | 0.80 | 1.15 | |
| E | 0.010 | 0.016 | 0.25 | 0.40 | |
| G | 0.004 | 0.018 | 0.10 | 0.45 | |
| H | 0.004 | 0.010 | 0.10 | 0.25 | |
| J | ----- | 0.006 | ----- | 0.15 | |

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter |
|-----------|-------------------------------------|
| V_{RWM} | Peak Reverse Working Voltage |
| I_R | Reverse Leakage Current @ V_{RWM} |
| V_{BR} | Breakdown Voltage @ I_T |
| I_T | Test Current |
| I_{PP} | Maximum Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| P_{PP} | Peak Pulse Power |
| C_J | Junction Capacitance |
| I_F | Forward Current |
| V_F | Forward Voltage @ I_F |



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-------------------------------------|-----------|--|------|------|------|---------------|
| Reverse Working Voltage | V_{RWM} | | | | 24 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T = 1\text{mA}$ | 25 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 24\text{V}$ | | | 0.5 | μA |
| Clamping Voltage ^{Note1} | V_C | $I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$ | | 27 | 32 | V |
| Clamping Voltage ^{Note1} | V_C | $I_{PP} = 5\text{A}$, $t_p = 8/20\mu\text{s}$ | | 34 | 42 | V |
| Clamping Voltage ^{Note1} | V_C | $I_{PP} = 7\text{A}$, $t_p = 8/20\mu\text{s}$ | | 37 | 50 | V |
| Dynamic Resistance ^{Note2} | R_{DYN} | TLP, $t_p = 100\text{ns}$ | | 0.36 | | Ω |
| Junction Capacitance | C_J | $V_R = 0\text{V}$, $f = 1\text{MHz}$ | | 36 | 50 | pF |

Note:

1. Non-repetitive current pulse, according to IEC61000-4-5.

2. TLP parameter: $Z_0 = 50\Omega$, $t_p = 100\text{ns}$, $t_r = 2\text{ns}$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

Curve Characteristics

Fig. 1 - 8 X 20µs Pulse Waveform

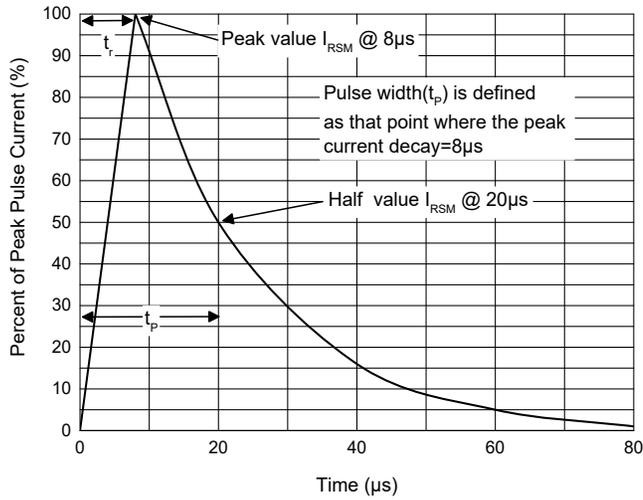


Fig. 2 - Non-Repetitive Peak Pulse Power

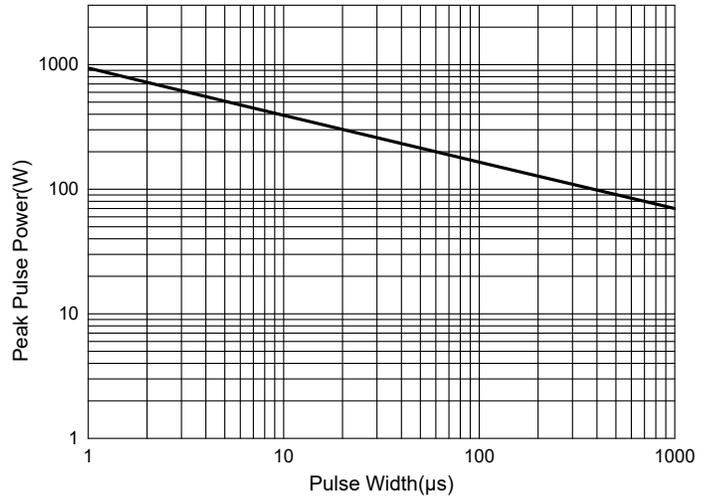


Fig. 3 - Capacitance Characteristics

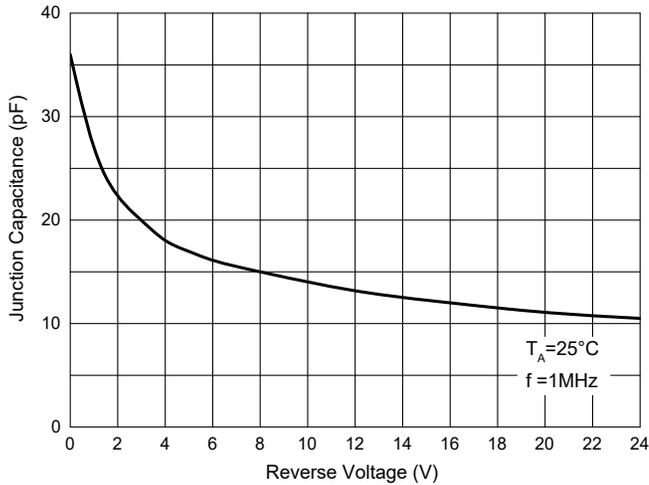


Fig. 4 - Clamping Voltage Characteristics

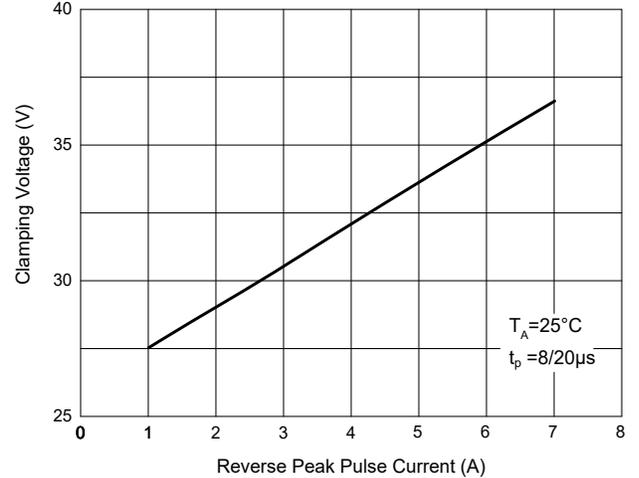


Fig. 5 - Pulse Derating Curve

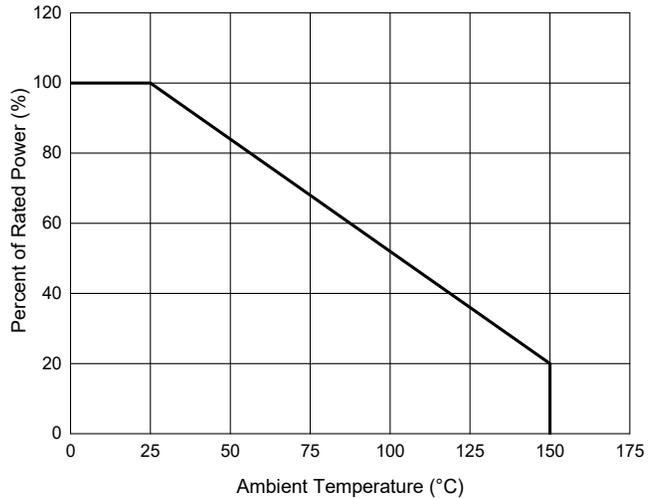
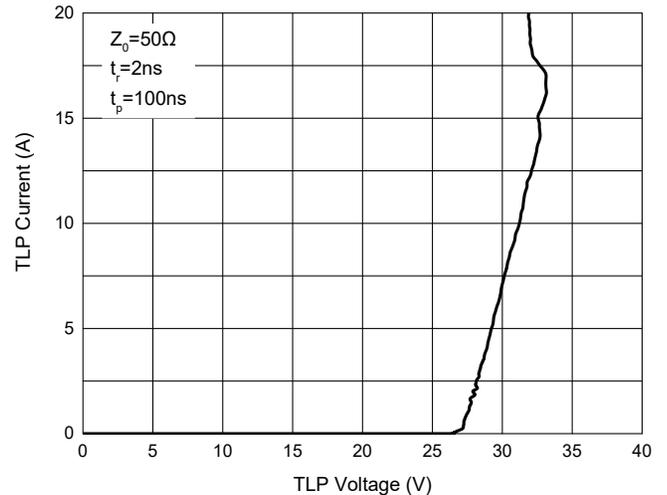


Fig. 6 - TLP Measurement



Ordering Information

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

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