

TPESD1ETH1GLS-QYL

1-Line Bi-directional TVS Diode

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Features

- Low operating voltage: $\pm 24V$
- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Low operating voltage:
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - – IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 20kV$
 - Contact discharge: $\pm 15kV$
 - – IEC61000-4-5 (Lightning) 2A (8/20 μs)
- RoHS Compliant
- Lead Finish: NiPdAu

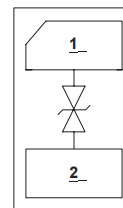
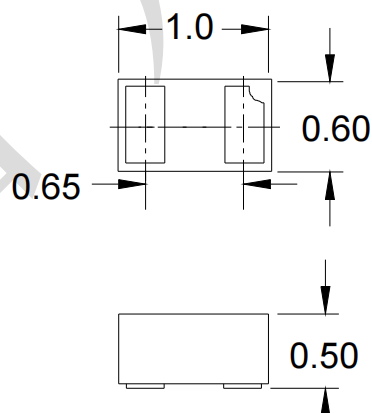
Mechanical Characteristics

- Package: DFN1006-2(0402)
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Shipping Qty :15000pcs Or 10000/7Inch Tape & Reel

Applications

- VGA,DVI,SDI,USB1.0,USB2.0,USB3.0,USB3.1
- High Definition Multi-Media Interface(HDMI1.3/1.4/2.0)
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Peripherals

Dimensions and Pin Configuration



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Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs) | Ppk | 90 | W |
| Peak Pulse Current (8/20μs) | Ipp | 2 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | ±20 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ±15 | |
| Operating Temperature Range | TJ | -55 to +125 | °C |
| Storage Temperature Range | Tstg | -55 to +150 | °C |

Electrical Characteristics (TA=25°C unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------|--------|------|-----|-----|------|-----------------------|
| Reverse Working Voltage | VRWM | | | 24 | V | |
| Breakdown Voltage | VBR | 26.4 | | | V | IT = 1mA |
| Reverse Leakage Current | IR | | | 0.1 | uA | VRWM = 24V |
| Clamping Voltage | VC | | | 40 | V | Ipp=1A(8x 20us pulse) |
| Clamping Voltage | VC | | | 55 | V | Ipp=2A(8x 20us pulse) |
| Junction Capacitance | CJ | | 0.3 | | pF | VR = 0V, f = 1MHz |

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig1. 8/20 μs Pulse Waveform

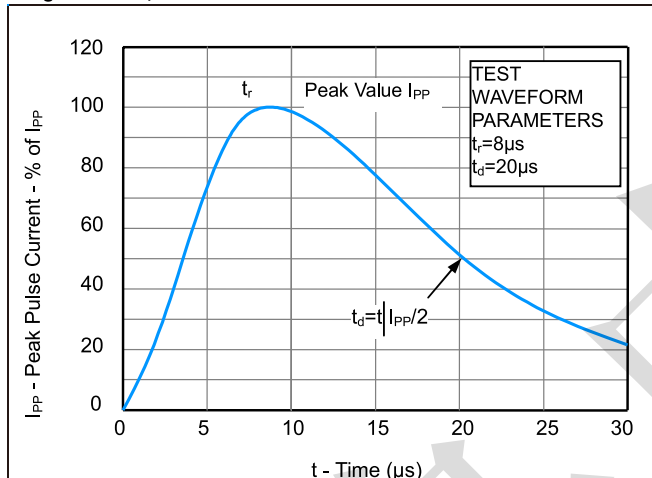


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

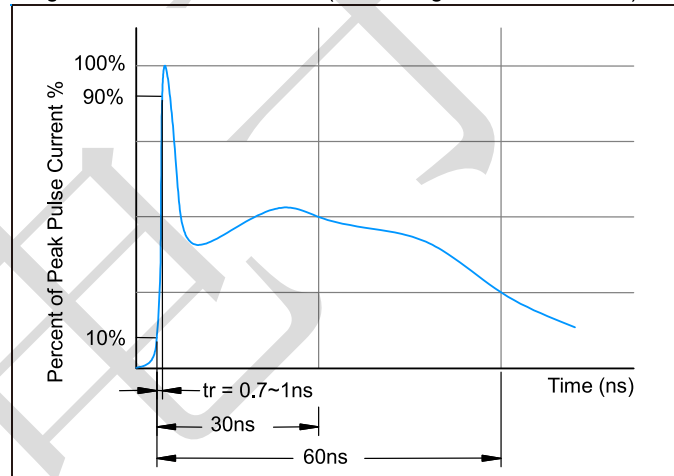
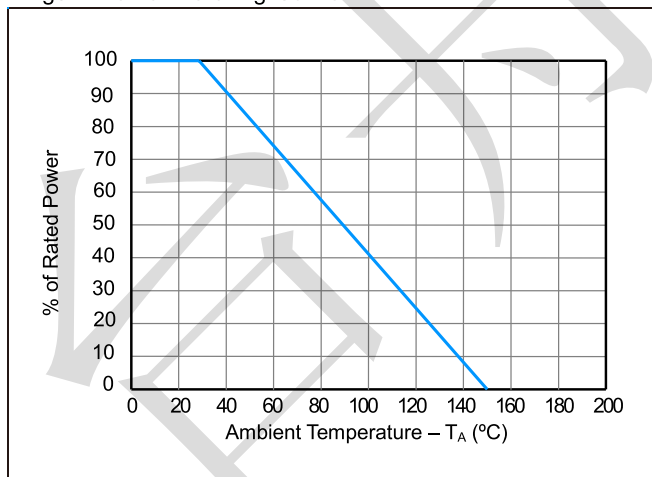


Fig3. Power Derating Curve

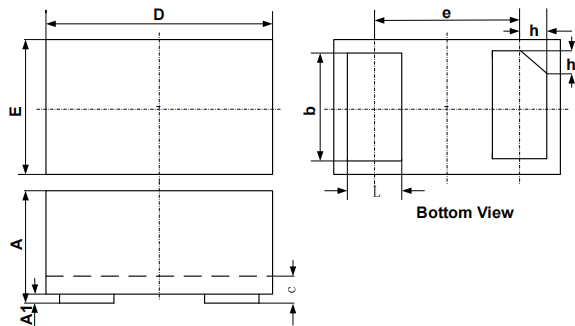


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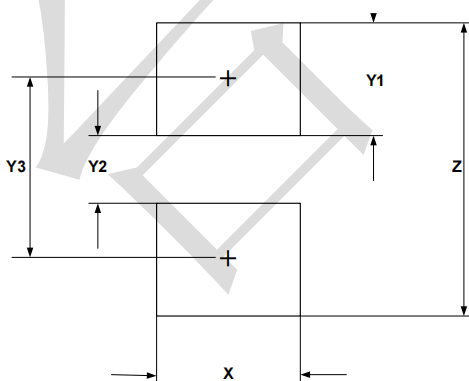
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DFN1006-2 Package Outline Drawing (0402)



| SYM | DIMENSIONS | | | | | |
|-----|-------------|------|------|-----------|-------|-------|
| | MILLIMETERS | | | INCHES | | |
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.45 | 0.50 | 0.55 | 0.018 | 0.020 | 0.022 |
| A1 | 0.00 | 0.02 | 0.05 | 0.000 | 0.001 | 0.002 |
| b | 0.45 | 0.50 | 0.55 | 0.018 | 0.020 | 0.022 |
| c | 0.12 | 0.15 | 0.18 | 0.005 | 0.006 | 0.007 |
| D | 0.95 | 1.00 | 1.05 | 0.037 | 0.039 | 0.041 |
| e | 0.65 BSC | | | 0.026 BSC | | |
| E | 0.55 | 0.60 | 0.65 | 0.022 | 0.024 | 0.026 |
| L | 0.20 | 0.25 | 0.30 | 0.008 | 0.010 | 0.012 |
| h | 0.07 | 0.12 | 0.17 | 0.003 | 0.005 | 0.007 |

Suggested Land Pattern



| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| X | 0.60 | 0.024 |
| Y1 | 0.50 | 0.020 |
| Y2 | 0.30 | 0.012 |
| Y3 | 0.80 | 0.032 |
| Z | 1.30 | 0.052 |