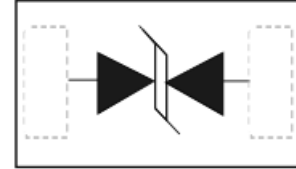


Description

The PESDR0521P1 is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The PESDR0521P1 has an ultra-low capacitance with a typical value at 0.3pF, and complies with the IEC 61000-4-2 (ESD) with ± 25 kV air and ± 22 kV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make PESDR0521P1 an ideal choice to protect cell phone, digital video interfaces and other high speed ports.



Mechanical Characteristics

- Package: DFN1006-2 (1.0x0.6x0.5mm)
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Features

- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ± 25 kV
 - Contact discharge: ± 22 kV
 - IEC61000-4-5 (Lightning) 4A (8/20 μ s)
- RoHS Compliant

Applications

- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB Ports
- Digital Video Interface (DVI)
- PCI Express and Serial SATA Ports

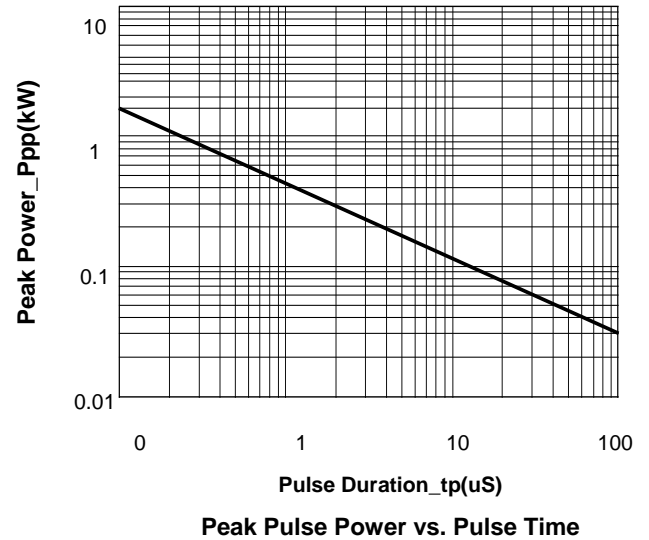
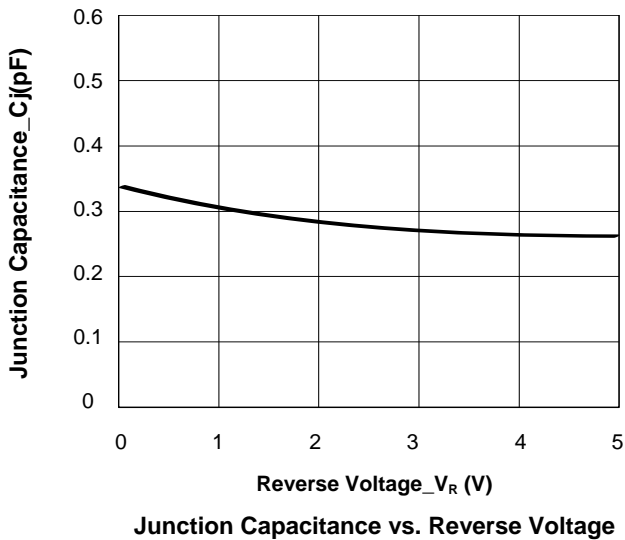
Absolute Maximum Ratings (T_A=25° C unless otherwise specified)

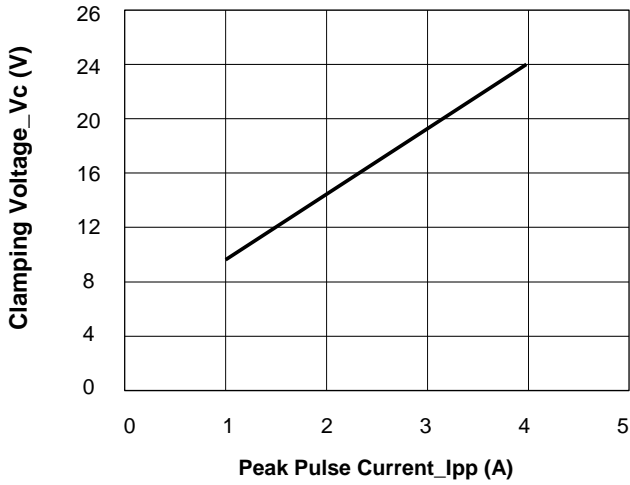
| Parameter | Symbol | Value | Unit |
|-----------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20 μ s) | P _{PK} | 100 | W |
| Peak Pulse Current (8/20 μ s) | I _{PP} | 4 | A |
| ESD per IEC 61000-4-2 (Air) | V _{ESD} | ± 25 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ± 22 | |
| Operating Temperature Range | T _J | -55 to +125 | °C |
| Storage Temperature Range | T _{stg} | -55 to +150 | °C |

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

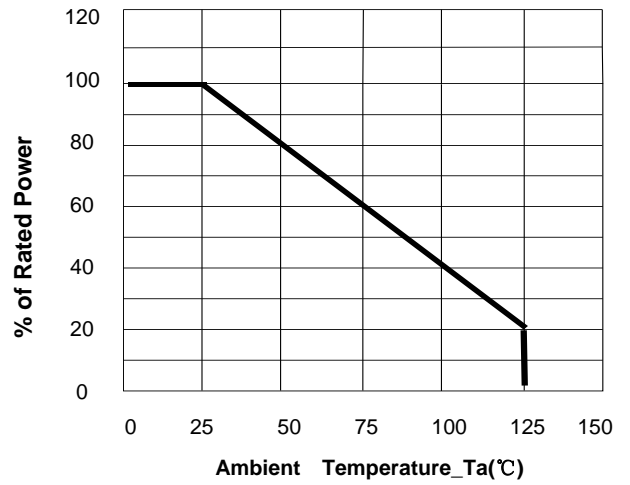
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------|------------------|-----|-----|-----|------|---------------------------------------|
| Reverse Working Voltage | V _{RWM} | | | 5 | V | |
| Breakdown Voltage | V _{BR} | 6.5 | | 9.5 | V | I _T = 1mA |
| Reverse Leakage Current | I _R | | | 0.2 | μA | V _{RWM} = 5V |
| Clamping Voltage | V _C | | | 12 | V | I _{PP} = 1A (8 x 20μs pulse) |
| Clamping Voltage | V _C | | | 25 | V | I _{PP} = 4A (8 x 20μs pulse) |
| Junction Capacitance | C _J | | 0.3 | 0.5 | pF | V _R = 0V, f = 1MHz |

Typical Performance Characteristics (T_A=25° C unless otherwise Specified)

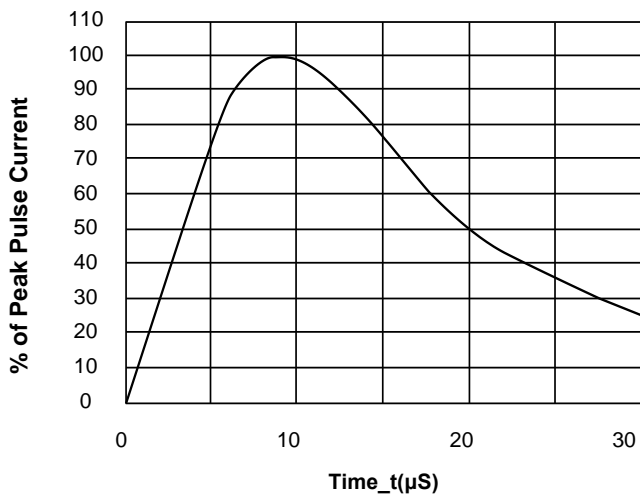




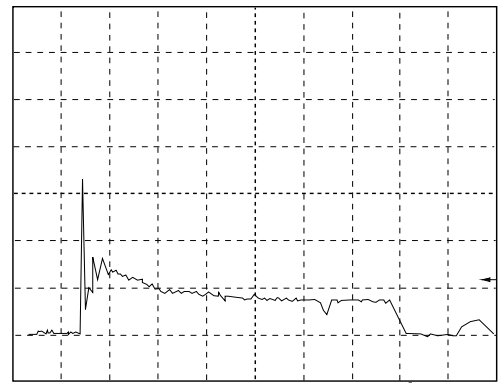
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve

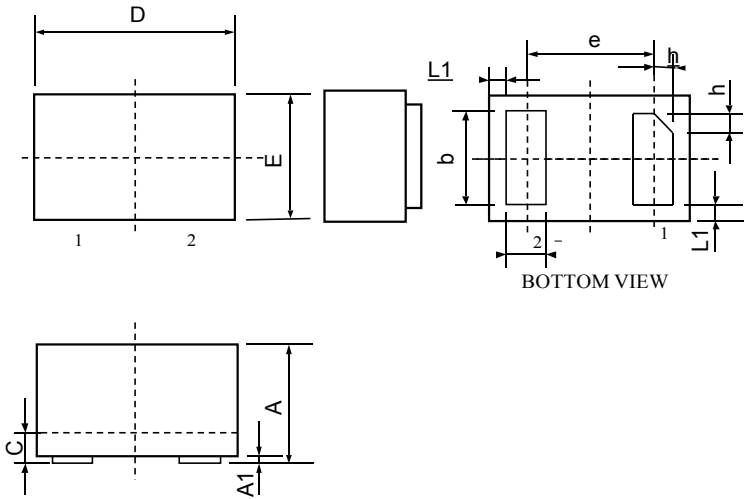


8 X 20uS Pulse Waveform



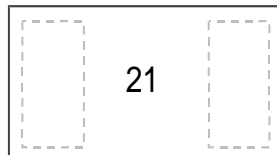
ESD Clamping Voltage
8 kV Contact per IEC61000-4-2

DFN1006-2 Package Outline Drawing



| SYMB | MILIMETER | | |
|------|-----------|------|------|
| | MIN | NOM | MAX |
| OL | | | |
| A | 0.45 | 0.50 | 0.55 |
| A1 | 0 | 0.02 | 0.05 |
| b | 0.45 | 0.50 | 0.55 |
| C | 0.12 | 0.15 | 0.18 |
| D | 0.95 | 1.00 | 1.05 |
| e | 0.65BSC | | |
| E | 0.55 | 0.60 | 0.65 |
| L | 0.20 | 0.25 | 0.30 |
| L1 | 0.05REF | | |
| h | 0.07 | 0.12 | 0.17 |

Marking



Ordering information

| Order code | Package | Baseq | Deliverymode |
|-----------------|-----------|-------|---------------|
| UMW PESDR0521P1 | DFN1006-2 | 10000 | Tape and reel |