

200 WATT ASYMMETRICAL LINE PROTECTION TVS ARRAY



SOD-323 PACKAGE

DESCRIPTION

The PESD1LIN is an asymmetrical line protection transient voltage suppressor array, designed for local interconnect network (LIN) bus protection. This device is available in a bidirectional configuration and is rated at 200 Watts for an 8/20 μ s waveshape.

The PESD1LIN meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements.

FEATURES

- IEC Compatibility IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- IEC Compatibility IEC 61000-4-4 (EFT): 40A - 5/50ns
- IEC Compatibility IEC 61000-4-5 (Surge): 24A, 8/20 μ s - Level 2(Line-Gnd) & Level 3(Line-Line)
- 200 Watts Peak Pulse Power per Line ($t_p = 8/20\mu$ s)
- Replacement for MLV (0805)
- Bidirectional Configuration
- Protects One Power or I/O Port
- Low Clamping Voltage
- Asymmetrical Line Protection: Pin 1 to 2 - 15V, Pin 2 to 1 - 24V
- RoHS Compliant
- REACH Compliant

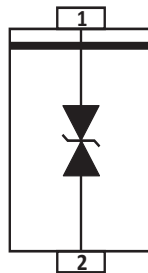
APPLICATIONS

- Automotive Applications
- Local Interconnect Network (LIN) Bus Protection
- Bus Protection

MECHANICAL CHARACTERISTICS

- Molded JEDEC SOD-323 Package
- Approximate Weight: 5 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

| PARAMETER | SYMBOL | VALUE | UNITS |
|---|-----------|------------|-------|
| Peak Pulse Power (tp = 8/20μs) - See Figure 1 | P_{PP} | 200 | Watts |
| Operating Temperature | T_A | -55 to 150 | °C |
| Storage Temperature | T_{STG} | -55 to 150 | °C |

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

| CONFIGURATION | DEVICE MARKING | RATED STAND-OFF VOLTAGE V_{WM} VOLTS | MINIMUM BREAKDOWN VOLTAGE @ 15mA $V_{(BR)}$ VOLTS | MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ IP = 1A V_C VOLTS | MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 8/20μs $V_C @ I_{PP}$ | MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D nA | TYPICAL CAPACITANCE @ 0V, 1MHz C pF |
|---------------|----------------|--|--|--|---|--|--|
| Pin 1 to 2 | 54 | 15.0 | 17.2 | 25.0 | 44.0V @ 5.0A | 45 | 17 |
| Pin 2 to 1 | | 24.0 | 25.5 | 40.0 | 70.0V @ 3.0A | 45 | 17 |

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

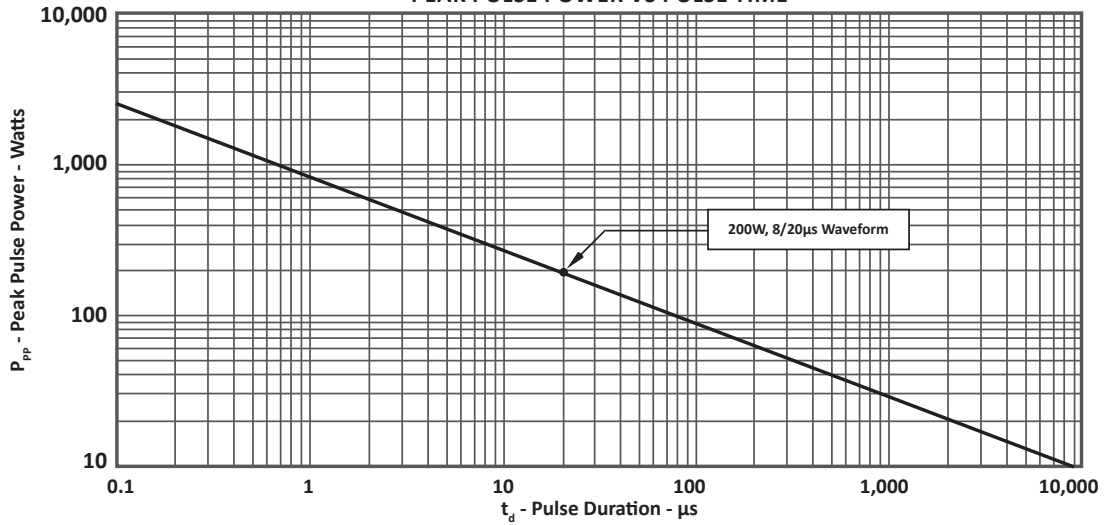


FIGURE 2
PULSE WAVE FORM

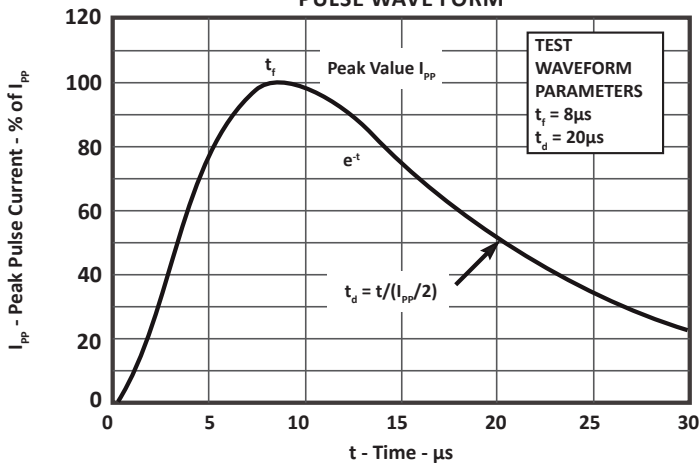
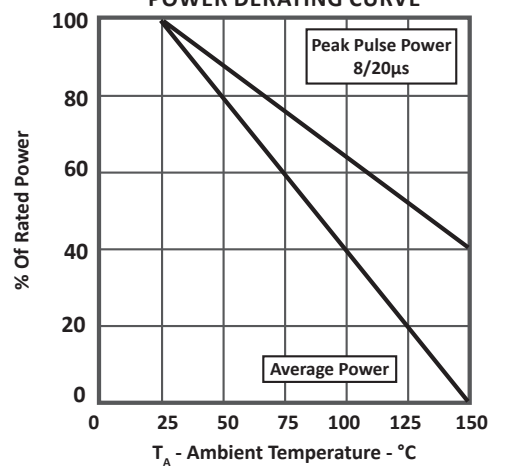


FIGURE 3
POWER DERATING CURVE



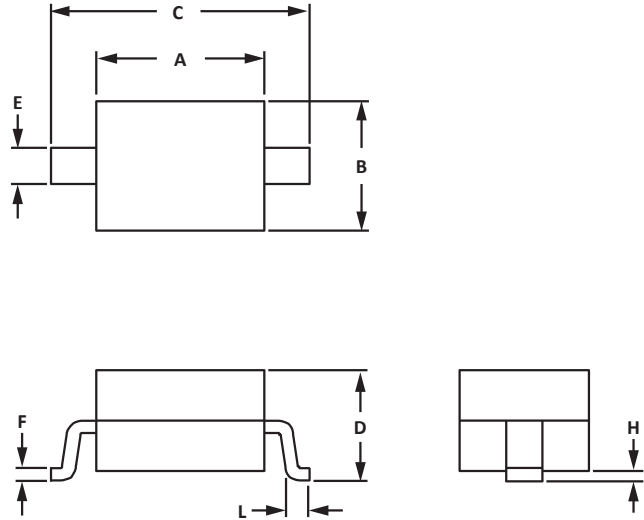
SOD-323 PACKAGE INFORMATION

OUTLINE DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.60 | 1.90 | 0.063 | 0.075 |
| B | 1.15 | 1.45 | 0.045 | 0.057 |
| C | 2.39 | 2.70 | 0.094 | 0.106 |
| D | 0.80 | 1.10 | 0.031 | 0.043 |
| E | 0.25 | 0.40 | 0.010 | 0.016 |
| F | 0.10 | 0.20 | 0.004 | 0.008 |
| H | - | 0.10 | - | 0.004 |
| L | 0.20 | - | 0.008 | - |

NOTES

- Controlling dimension: millimeters.
- Dimensioning and tolerances per ANSI Y14.5M, 1985.
- Dimensions are exclusive of mold flash and metal burrs.

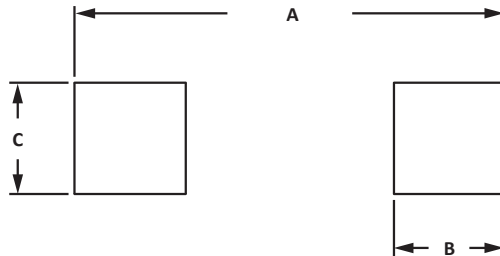


PAD LAYOUT DIMENSIONS

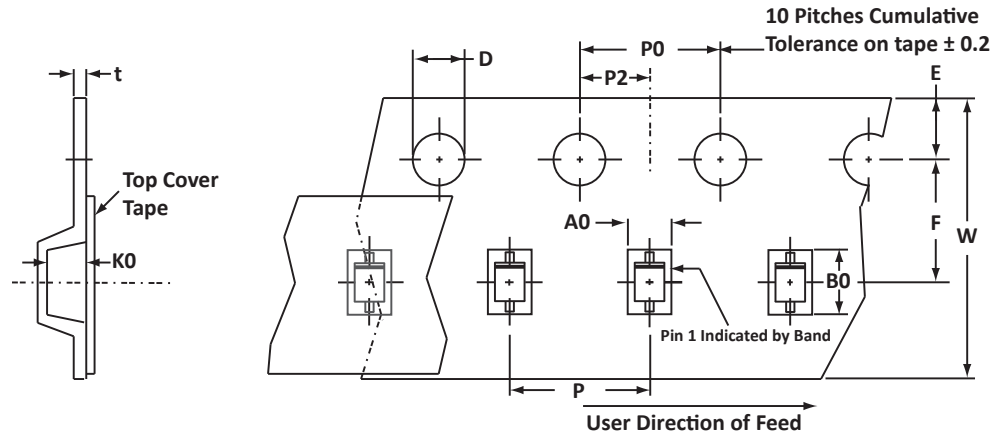
| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 2.87 | 3.12 | 0.113 | 0.123 |
| B | 0.66 | 0.91 | 0.026 | 0.036 |
| C | 0.66 | 0.91 | 0.026 | 0.036 |

NOTES

- Controlling dimension: millimeters.



TAPE AND REEL



SPECIFICATIONS

| REEL DIA. | TAPE WIDTH | A0 | B0 | K0 | D | E | F | W | P0 | P2 | P | tmax |
|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| 178mm (7") | 8mm | 1.55 ± 0.10 | 2.90 ± 0.10 | 1.35 ± 0.10 | 1.50 ± 0.10 | 1.75 ± 0.10 | 3.50 ± 0.05 | 8.00 ± 0.30 | 4.00 ± 0.10 | 2.00 ± 0.05 | 4.00 ± 0.10 | 0.25 |

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T7 = 7" Reel - 3,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2) and polarity band.

ORDERING INFORMATION

| BASE PART NUMBER | LEADFREE SUFFIX | TAPE SUFFIX | QTY/REEL | REEL SIZE | TUBE QTY |
|------------------|-----------------|-------------|----------|-----------|----------|
| PESD1LIN | n/a | -T7 | 3,000 | 7" | n/a |

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 20 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers high performance interface and linear products. They include analog switches; multiplexers; LED drivers; LED wafer die for ESD protection; audio control ICs; RF and related high frequency products.

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