

LOW CAPACITANCE TVS ARRAY



SOT-23 PACKAGE

DESCRIPTION

The ESOT3.3LC-2, a high frequency, transient suppression protector of wireless telecommunications applications for portable devices. This device is packaged in a SOT-23 plastic case and is available in a 3.3 volt, bidirectional configuration.

Due to its low capacitance, the ESOT3.3LC-2 is ideal protection of Ethernet or USB port interfaces against the effects of electrostatic discharge (ESD) and electrical fast transients (EFT). This device meets the requirements of IEC 61000-4-2 and IEC 61000-4-4.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 15kV, Contact 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- 175 Watts Peak Pulse Power per Line($t_p = 8/20\mu s$)
- Protects Two Bidirectional Lines
- Bidirectional Configuration
- Low Leakage Current $< 2.0\mu A$
- Low Capacitance $< 15pF$ per Line
- RoHS Compliant
- REACH Compliant

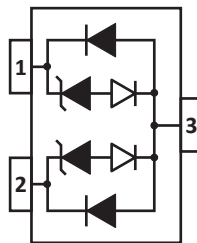
APPLICATIONS

- Ethernet - 10/100/1000 Base T
- USB Ports
- Cellular Phones
- Audio/Video Inputs
- SMART Phones
- E1/T1 & E3/T3

MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-23 Package
- Approximate Weight: 8 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- Flammability Rating UL 94V-0
- 8mm Tape and Reel per EIA Standard 481

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} | 175 | Watts |
| Operating Temperature | T _L | -55 to 150 | °C |
| Storage Temperature | T _{STG} | -55 to 150 | °C |
| Peak Pulse Current (tp = 8/20μs) | I _{PP} | 5 | Amps |

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

| PART NUMBER (Note 1) | DEVICE MARKING | RATED STAND-OFF VOLTAGE V _{WM} VOLTS | MINIMUM BREAKDOWN VOLTAGE @ 1mA V _(BR) VOLTS | MAXIMUM SNAP BACK VOLTAGE @ I _{SB} = 50mA V _{SB} VOLTS | MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ I _p = 1A V _C VOLTS | MAXIMUM LEAKAGE CURRENT @V _{WM} I _D μA | TYPICAL CAPACITANCE @0V, 1MHz C pF |
|-------------------------|----------------|---|--|---|---|---|---|
| ESOT3.3LC-2 | E3 | 3.3 | 3.5 | 3.3 | 6.5 | 2 | 15 |

NOTES

1. Test between pins 2 to 3 and 1 to 3.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

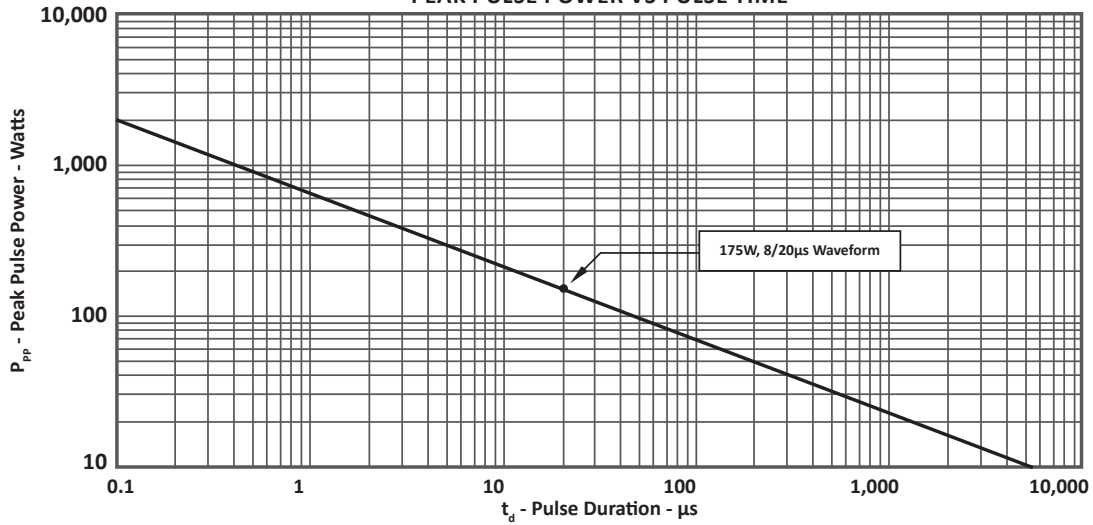
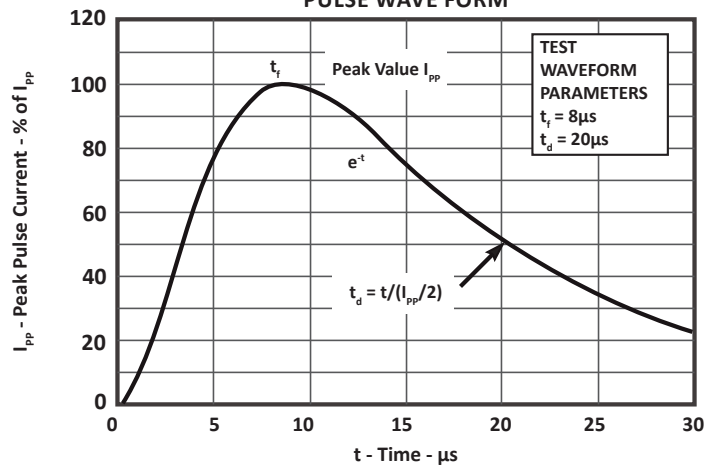


FIGURE 2
PULSE WAVE FORM



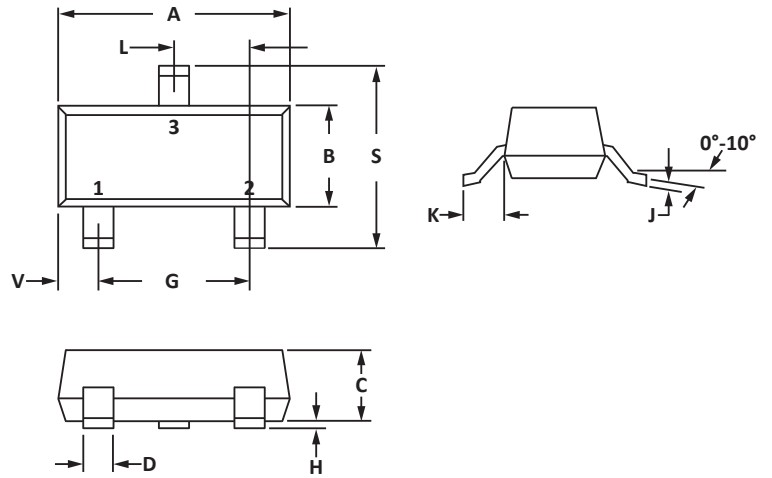
SOT-23 PACKAGE INFORMATION

OUTLINE DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|-------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 2.80 | 3.04 | 0.110 | 0.120 |
| B | 1.20 | 1.40 | 0.047 | 0.055 |
| C | 0.89 | 1.11 | 0.035 | 0.044 |
| D | 0.37 | 0.50 | 0.015 | 0.020 |
| G | 1.78 | 2.04 | 0.070 | 0.081 |
| H | 0.013 | 0.100 | 0.001 | 0.004 |
| J | 0.085 | 0.177 | 0.003 | 0.007 |
| K | 0.45 | 0.60 | 0.018 | 0.024 |
| L | 0.89 | 1.02 | 0.035 | 0.040 |
| S | 2.10 | 2.50 | 0.083 | 0.098 |
| V | 0.45 | 0.60 | 0.018 | 0.024 |

NOTES

1. Controlling dimension: inches.
2. Dimensioning and tolerances per ANSI Y14.5M, 1985.
3. Pin 3 is the cathode (Unidirectional Only)
4. Dimensions are exclusive of mold flash and metal burrs.

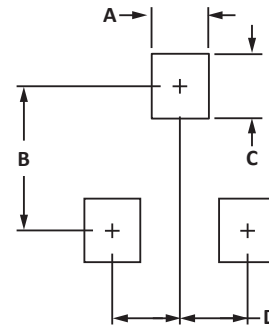


PAD LAYOUT DIMENSIONS

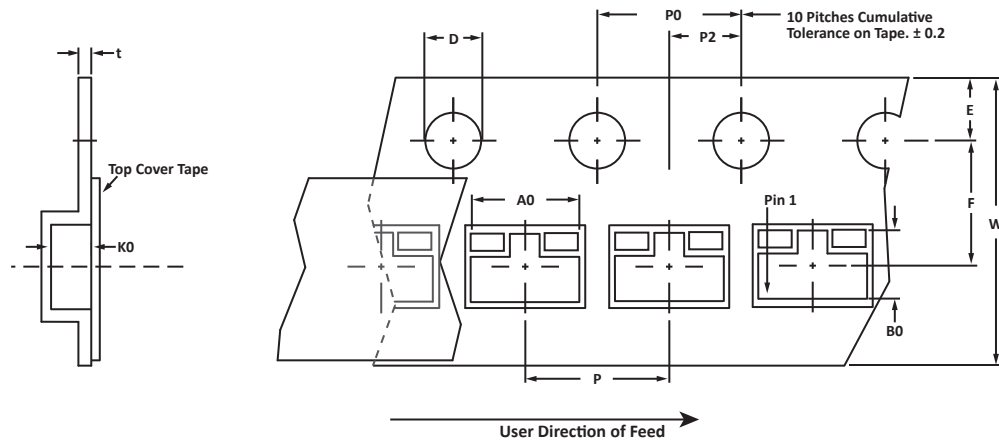
| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.71 | 0.97 | 0.028 | 0.038 |
| B | 1.88 | 2.13 | 0.074 | 0.084 |
| C | 0.71 | 0.97 | 0.028 | 0.038 |
| D | 0.81 | 1.07 | 0.032 | 0.042 |

NOTES

1. Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS

| REEL DIA. | TAPE WIDTH | A0 | B0 | K0 | D | E | F | W | P0 | P2 | P | tmax |
|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| 178mm (7") | 8mm | 3.15 ± 0.10 | 2.77 ± 0.10 | 1.30 ± 0.10 | 1.55 ± 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 | 0.228 |

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.
- Suffix - T13 = 13" Reel - 10,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2) and date code.

Package outline, pad layout and tape specifications per document number 06012.R2 8/10.

ORDERING INFORMATION

| BASE PART NUMBER | LEADFREE SUFFIX | TAPE SUFFIX | QTY/REEL | REEL SIZE | TUBE QTY |
|------------------|-----------------|-------------|----------|-----------|----------|
| ESOT3.3LC-2 | -LF | -T7 | 3000 | 7" | n/a |
| ESOT3.3LC-2 | -LF | -T13 | 10,000 | 13" | 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 company located in Tempe, Arizona, that offers a product line of transient voltage suppressors (TVS); avalanche breakdown diodes; steering diode TVS arrays and other surge suppressor component products. These TVS devices protect electronic systems from the effects of lightning, electrostatic discharge (ESD), nuclear electromagnetic pulses (NEMP), inductive switching and EMI / RFI. ProTek Devices also offers high performance interface and linear products that include analog switches; multiplexers; LED drivers; audio control ICs; RF and related high frequency products. The analog devices work in a host of consumer; industrial; automotive and other applications.

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