

STANDARD CAPACITANCE TVS ARRAY
APPLICATIONS

- ✓ RS-232, RS-422 & RS-423
- ✓ Cellular Phones
- ✓ Control & Monitoring Systems
- ✓ Portable Electronics
- ✓ Wireless Bus Protection

IEC COMPATIBILITY (EN61000-4)

- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns
- ✓ 61000-4-5 (Surge): 24A, 8/20 μ s - Level 2(Line-Ground) & Level 3(Line-Line)

FEATURES

- ✓ ESD Protection > 40 kilovolts
- ✓ 500 Watts Peak Pulse Power per Line ($t_p = 8/20\mu$ s)
- ✓ Low Clamping Voltage
- ✓ Available in Multiple Voltage Types Ranging from 3V to 36V
- ✓ Unidirectional & Bidirectional Configurations
- ✓ RoHS Compliant

MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SOT-23 Package
- ✓ Weight 8 milligrams (Approximate)
- ✓ Available in Lead-Free Pure-Tin Plating(Annealed)
- ✓ Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- ✓ Consult Factory for Leaded Device Availability
- ✓ Flammability Rating UL 94V-0
- ✓ 8mm Tape and Reel Per EIA Standard 481
- ✓ Marking: Marking Code


PIN CONFIGURATIONS


PSOT03 thru PSOT36C

DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

| PARAMETER | SYMBOL | VALUE | UNITS |
|---|-----------|------------|-------|
| Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1 | P_{PP} | 500 | Watts |
| Operating Temperature | T_L | -55 to 150 | °C |
| Storage Temperature | T_{STG} | -55 to 150 | °C |
| Forward Voltage @ 100mA, 300 μs - Square Wave (See Note 1) | V_F | 1.5 | Volts |

Note 1: Applies to unidirectional pins only.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

| PART NUMBER (See Note 1) | DEVICE MARKING | RATED STAND-OFF VOLTAGE | MINIMUM BREAKDOWN VOLTAGE | MAXIMUM CLAMPING VOLTAGE (See Fig. 2) | MAXIMUM CLAMPING VOLTAGE (See Fig. 2) | MAXIMUM LEAKAGE CURRENT | TYPICAL CAPACITANCE |
|-----------------------------|----------------|-------------------------|------------------------------|--|--|--------------------------------|------------------------|
| | | V_{WM} VOLTS | @ 1mA $V_{(BR)}$ VOLTS | @ $I_p = 1A$ V_C VOLTS | @ 8/20 μs $V_C @ I_{PP}$ | @ V_{WM} I_D μA | @ 0V, 1 MHz C pF |
| PSOT03 | 03 | 3.3 | 4.0 | 6.5 | 10.9V @ 43.0A | 125 | 500 |
| PSOT03C | 03C | 3.3 | 4.0 | 7.0 | 10.9V @ 43.0A | 125 | 300 |
| PSOT05 | 05 | 5.0 | 6.0 | 9.8 | 13.5V @ 42.0A | 20 | 350 |
| PSOT05C | 05C | 5.0 | 6.0 | 9.8 | 13.5V @ 42.0A | 20 | 210 |
| PSOT08 | 08 | 8.0 | 8.5 | 13.4 | 16.9V @ 34.0A | 10 | 250 |
| PSOT08C | 08C | 8.0 | 8.5 | 13.4 | 16.9V @ 34.0A | 10 | 150 |
| PSOT12 | 12 | 12.0 | 13.3 | 19.0 | 25.9V @ 21.0A | 2 | 150 |
| PSOT12C | 12C | 12.0 | 13.3 | 19.0 | 25.9V @ 21.0A | 2 | 90 |
| PSOT15 | 15 | 15.0 | 16.7 | 24.0 | 30.0V @ 17.0A | 1 | 100 |
| PSOT15C | 15C | 15.0 | 16.7 | 24.0 | 30.0V @ 17.0A | 1 | 60 |
| PSOT24 | 24 | 24.0 | 26.7 | 43.0 | 49.0V @ 12.0A | 1 | 88 |
| PSOT24C | 24C | 24.0 | 26.7 | 43.0 | 49.0V @ 12.0A | 1 | 63 |
| PSOT36 | 36 | 36.0 | 40.0 | 51.0 | 76.8V @ 9.0A | 1 | 80 |
| PSOT36C | 36C | 36.0 | 40.0 | 51.0 | 76.8V @ 9.0A | 1 | 60 |

Note 1: Part numbers with an additional "C" suffix are bidirectional devices, i.e., PSOT05C.

GRAPHS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

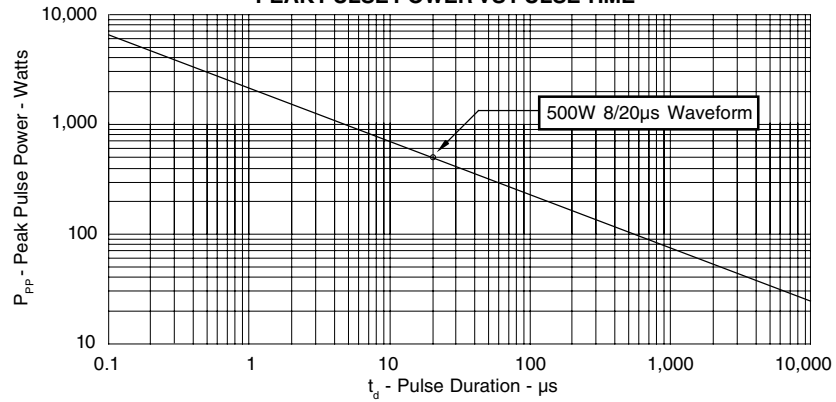


FIGURE 2
PULSE WAVE FORM

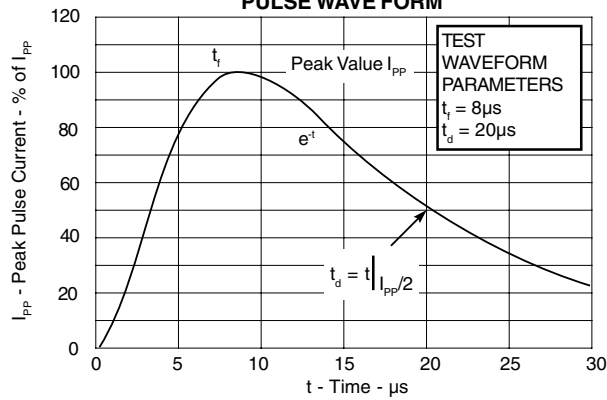
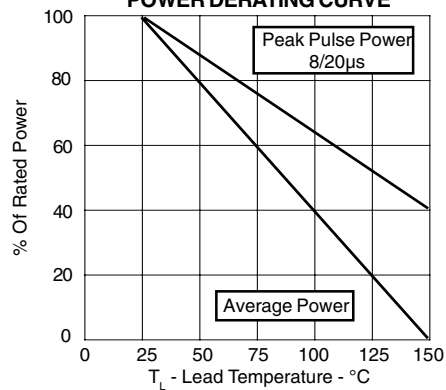


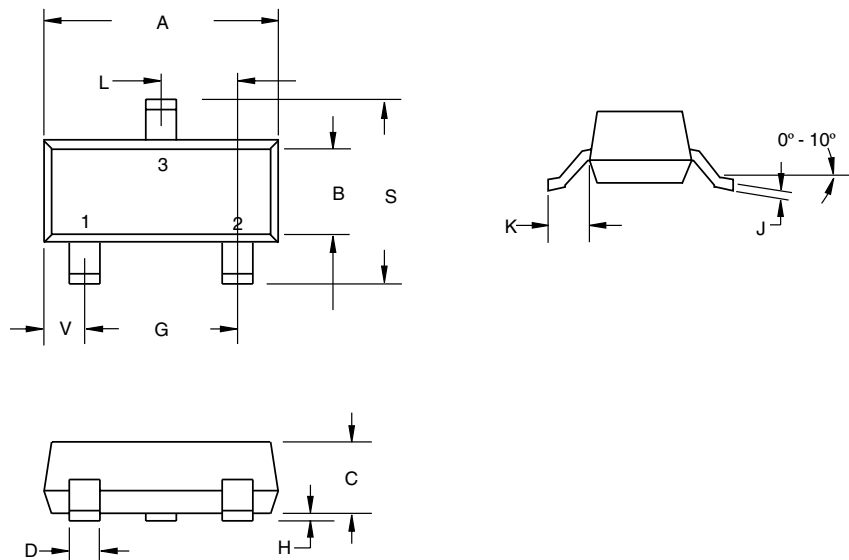
FIGURE 3
POWER DERATING CURVE



PSOT03 thru PSOT36C

SOT-23 PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE



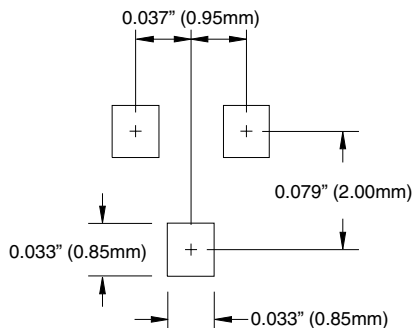
SOT-23



PACKAGE DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|-------|--------|--------|
| | MIN | MAX | MIN | MAX |
| A | 2.80 | 3.04 | 0.1102 | 0.1197 |
| B | 1.20 | 1.40 | 0.0472 | 0.0551 |
| C | 0.89 | 1.11 | 0.0350 | 0.0440 |
| D | 0.37 | 0.50 | 0.0150 | 0.0200 |
| G | 1.78 | 2.04 | 0.0701 | 0.0807 |
| H | 0.013 | 0.100 | 0.0005 | 0.0040 |
| J | 0.085 | 0.177 | 0.0034 | 0.0070 |
| K | 0.45 | 0.60 | 0.0180 | 0.0236 |
| L | 0.89 | 1.02 | 0.0350 | 0.0401 |
| S | 2.10 | 2.50 | 0.0830 | 0.0984 |
| V | 0.45 | 0.60 | 0.0177 | 0.0236 |

MOUNTING PAD



NOTES

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

TAPE & REEL ORDERING NOMENCLATURE

1. Surface mount product is taped and reeled in accordance with EIA-481.
2. Suffix-T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., PSOT05-T7.
3. Suffix-T13 = 13 Inch Reel - 10,000 pieces per 8mm tape, i.e., PSOT05-T13.
4. Suffix - LF = Lead-Free, Pure-Tin Plating, i.e., PSOT05-LF-T7.

Outline & Dimensions: Rev 1 - 11/01, 06012

COPYRIGHT © ProTek Devices 2007

SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice (except JEDEC).

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice, and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance, ProTek assumes no responsibility with respect to the selection or specifications of such products.

ProTek Devices

2929 South Fair Lane, Tempe, AZ 85282

Tel: 602-431-8101 Fax: 602-431-2288

E-Mail: sales@protekdevices.com

Web Site: www.protekdevices.com