

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 (tp = 8/20 μ 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

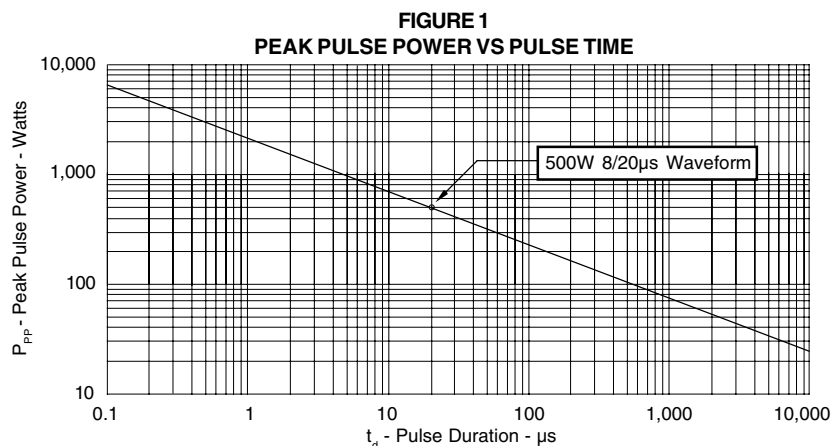
| PARAMETER | SYMBOL | VALUE | UNITS |
|---|-----------|------------|-------|
| Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1 | P_{PP} | 500 | Watts |
| Operating Temperature | T_L | -55 to 150 | °C |
| Storage Temperature | T_{STG} | -55 to 150 | °C |
| Forward Voltage @ 100mA, 300 μs - Square 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 V_{WM} VOLTS | MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS | MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ $I_p = 1A$ V_C VOLTS | MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ 8/20 μs $V_C @ I_{PP}$ | MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μA | TYPICAL CAPACITANCE @ 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 2
PULSE WAVE FORM

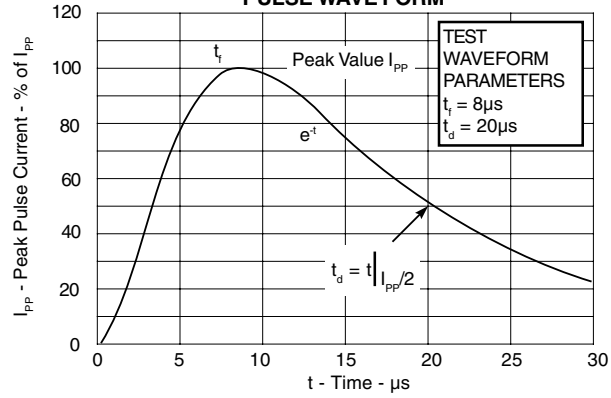


FIGURE 3
POWER DERATING CURVE

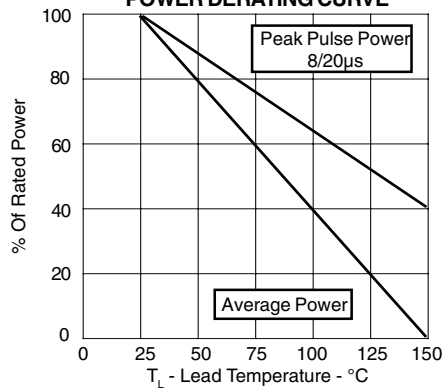
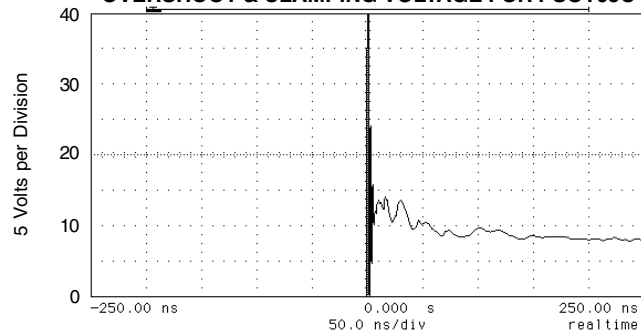


FIGURE 4
OVERSHOOT & CLAMPING VOLTAGE FOR PSOT05C



ESD Test Pulse: 25 kilovolt, 1/30ns (waveform)

PSOT03 thru PSOT36C

SOT-23 PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE

SOT-23

| 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.

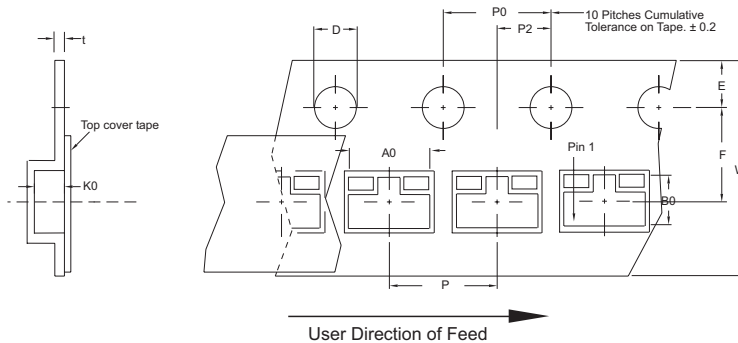
TAPE & REEL ORDERING NOMENCLATURE

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

Tape & Reel Specifications (Dimensions in millimeters)

| 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 |



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