

STANDARD CAPACITANCE TVS ARRAY

APPLICATIONS

- ✓ RS-232, RS-422 & RS-423 Data Lines
- ✓ Cellular Phones
- ✓ Audio/Video Inputs
- ✓ Portable Electronics
- ✓ Wireless Network Systems
- ✓ Medical Sensors

IEC COMPATIBILITY (EN61000-4)

- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns
- ✓ 61000-4-5 (Surge): 12A, 8/20 μ s - Level 1(Line-Gnd) & Level 2(Line-Line)

FEATURES

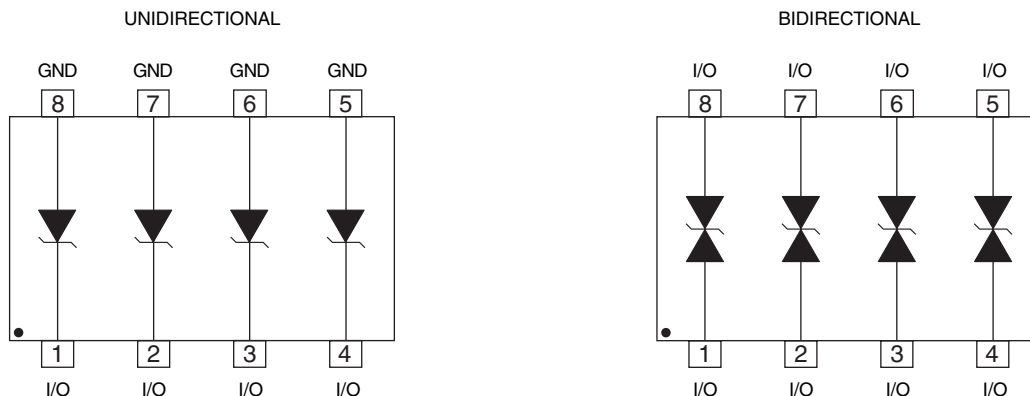
- ✓ 500 Watts Peak Pulse Power per Line ($t_p=8/20\mu$ s)
- ✓ Unidirectional & Bidirectional Configurations
- ✓ Available in Voltage Types Ranging From: 3V to 36V
- ✓ Protects Up to Four (4) Lines
- ✓ ESD Protection > 40 kilovolts
- ✓ RoHS Compliant in Lead-Free Versions

MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SO-8 Package
- ✓ Weight 70 milligrams (Approximate)
- ✓ Available in Tin-Lead or Lead-Free Pure-Tin Plating(Annealed)
- ✓ Solder Reflow Temperature:
 - Tin-Lead - Sn/Pb, 85/15: 240-245°C
 - Pure-Tin - Sn, 100: 260-270°C
- ✓ Flammability Rating UL 94V-0
- ✓ 12mm Tape and Reel Per EIA Standard 481
- ✓ Marking: Logo, Marking Code, Date Code & Pin One Defined By Dot on Top of Package



PIN CONFIGURATIONS



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_J | -55°C to 150°C | °C |
| Storage Temperature | T_{STG} | -55°C to 150°C | °C |
| Forward Voltage @ 100mA, 300μs - Square Wave (Note 1) | V_F | 1.5 | Volts |

Note 1: Only applies to unidirectional devices.

| ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified | | | | | | | |
|---|---------------------|-------------------------|------------------------------|--|--|---------------------------|------------------------------|
| PART NUMBER (See Note 1) | DEVICE MARKING CODE | RATED STAND-OFF VOLTAGE | MINIMUM BREAKDOWN VOLTAGE | MAXIMUM CLAMPING VOLTAGE (See Fig. 2) | MAXIMUM CLAMPING VOLTAGE (See Fig. 2) | MAXIMUM LEAKAGE CURRENT | MAXIMUM CAPACITANCE PER LINE |
| | | V_{WM} VOLTS | @ 1mA $V_{(BR)}$ VOLTS | @ $I_p = 1A$ V_C VOLTS | @ 8/20μs $V_C @ I_{PP}$ | @ V_{WM} I_D μA | @ 0V, 1 MHz C pF |
| SMDA03 | SDL | 3.3 | 4.0 | 6.5 | 10.9V @ 43.0A | 125 | 800 |
| SMDA03C | SDM | 3.3 | 4.5 | 7.0 | 10.9V @ 43.0A | 125 | 450 |
| SMDA05 | SDA | 5.0 | 6.0 | 9.8 | 13.5V @ 42.0A | 20 | 550 |
| SMDA05C | SDB | 5.0 | 6.0 | 9.8 | 13.5V @ 42.0A | 20 | 308 |
| SMDA08 | SDJ | 8.0 | 8.5 | 13.4 | 16.9V @ 34.0A | 10 | 500 |
| SMDA08C | SDK | 8.0 | 8.5 | 13.4 | 16.9V @ 34.0A | 10 | 300 |
| SMDA12 | SDC | 12.0 | 13.3 | 19.0 | 25.9V @ 27.0A | 1 | 185 |
| SMDA12C | SDD | 12.0 | 13.3 | 19.0 | 25.9V @ 27.0A | 1 | 105 |
| SMDA15 | SDE | 15.0 | 16.7 | 24.0 | 30.0V @ 17.0A | 1 | 140 |
| SMDA15C | SDF | 15.0 | 16.7 | 24.0 | 30.0V @ 17.0A | 1 | 80 |
| SMDA24 | SDG | 24.0 | 26.7 | 43.0 | 49.0V @ 12.0A | 1 | 88 |
| SMDA24C | SDH | 24.0 | 26.7 | 43.0 | 49.0V @ 12.0A | 1 | 50 |
| SMDA36 | SDN | 36.0 | 40.0 | 51.0 | 76.8V @ 9.0A | 1 | 80 |
| SMDA36C | SDP | 36.0 | 40.0 | 51.0 | 76.8V @ 9.0A | 1 | 45 |

Note 1: Part numbers with a "C" suffix are bidirectional devices, i.e., SMDA03C.

GRAPHS

FIGURE 1
PEAK PULSE POWER VS PULSETIME

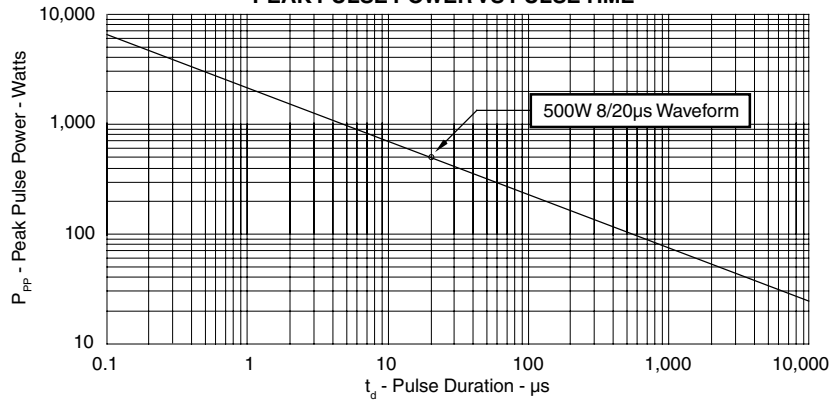


FIGURE 2
PULSE WAVE FORM

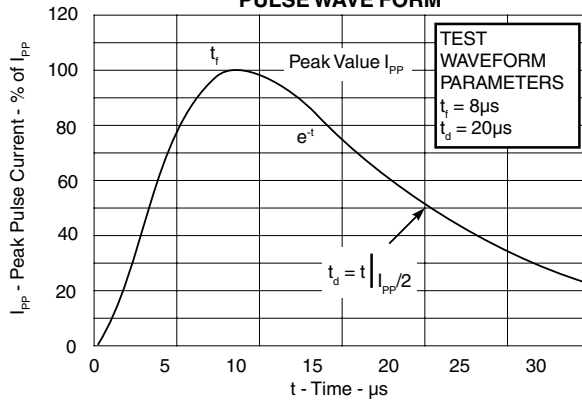
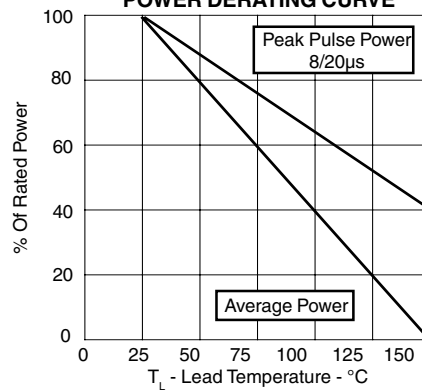
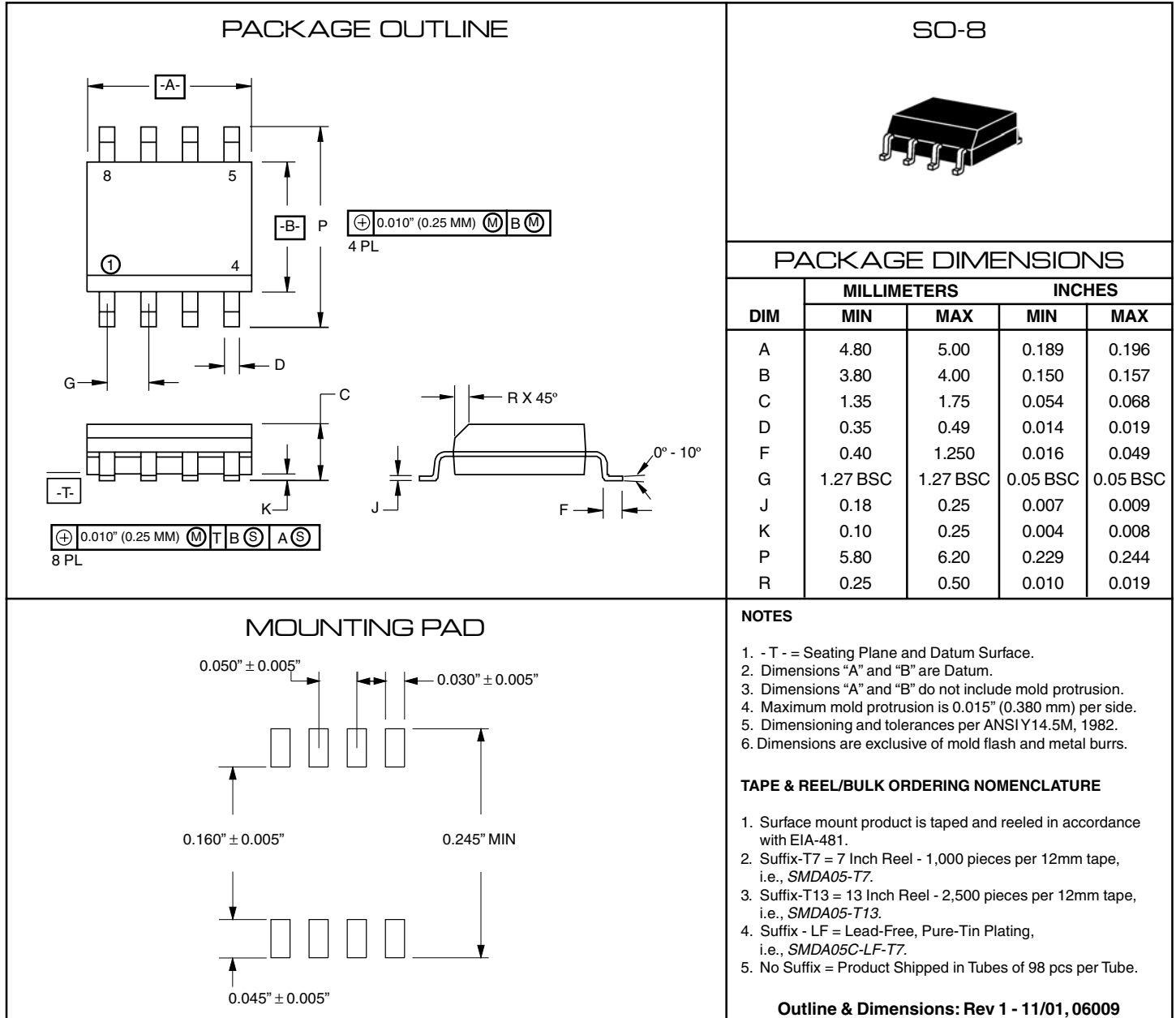


FIGURE 3
POWER DERATING CURVE



PACKAGE OUTLINE & DIMENSIONS



MOUNTING PAD

NOTES

- T - = Seating Plane and Datum Surface.
- Dimensions "A" and "B" are Datum.
- Dimensions "A" and "B" do not include mold protrusion.
- Maximum mold protrusion is 0.015" (0.380 mm) per side.
- Dimensioning and tolerances per ANSI Y14.5M, 1982.
- Dimensions are exclusive of mold flash and metal burrs.

TAPE & REEL/BULK ORDERING NOMENCLATURE

- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix-T7 = 7 Inch Reel - 1,000 pieces per 12mm tape, i.e., *SMDA05-T7*.
- Suffix-T13 = 13 Inch Reel - 2,500 pieces per 12mm tape, i.e., *SMDA05-T13*.
- Suffix - LF = Lead-Free, Pure-Tin Plating, i.e., *SMDA05C-LF-T7*.
- No Suffix = Product Shipped in Tubes of 98 pcs per Tube.

Outline & Dimensions: Rev 1 - 11/01, 06009

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