

LOW CAPACITANCE TVS ARRAY

APPLICATIONS

- ✓ Set-Top Boxes
- ✓ Modems
- ✓ Computers
- ✓ Printers
- ✓ Communication Systems

IEC COMPATIBILITY (EN61000-4)

- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

FEATURES

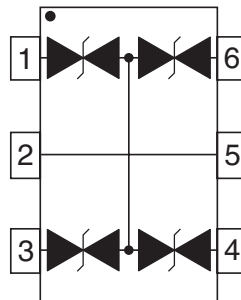
- ✓ 80 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ✓ ESD Protection > 25 kilovolts
- ✓ Protect Four(4) Line of Protection
- ✓ Low Clamping Voltage
- ✓ Bidirectional Configuration
- ✓ Low Leakage Current < 1.0 μA
- ✓ Low Capacitance: 15pF per Diode
- ✓ RoHS Compliant

MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SOT-23-6 Package
- ✓ Weight 16 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 One Defined By DOT on Package



PIN CONFIGURATION



ESDA05C-4

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} | 80 | Watts |
| Operating Temperature | T_L | -55 to 150 | °C |
| Storage Temperature | T_{STG} | -55 to 150 | °C |

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

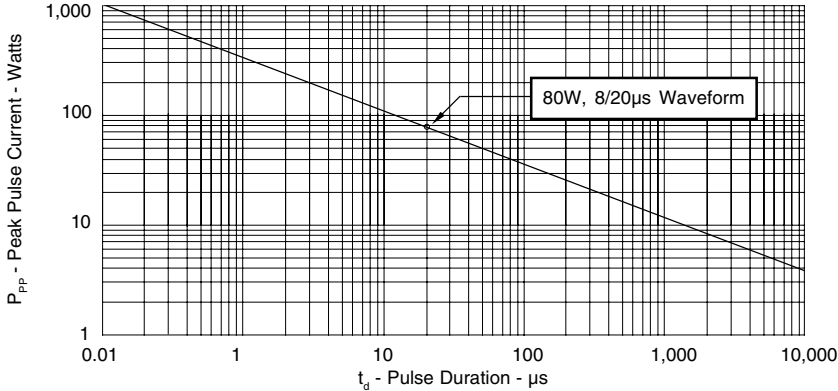
| PART NUMBER (See Note 1) | DEVICE MARKING | RATED STAND-OFF VOLTAGE V_{WM} VOLTS | MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS | MAXIMUM LEAKAGE CURRENT @ V_{WM} I_b μA | TYPICAL CAPACITANCE 0V @ 1 MHz C pF |
|-----------------------------|----------------|--------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------|
| ESDA05C-4 | ED4 | 5.0 | 6.1 | 1 | 15 |

Note 1: *Bidirectional Only:* Test between pins 2 to 1, 2 to 6, 2 to 5, 2 to 4 and 2 to 3 Electrical characteristics apply in both directions.

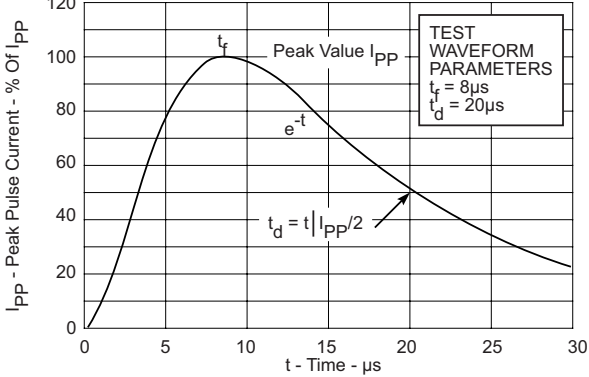
Note 2: *Bidirectional Only:* Capacitance measured between pins 1, 3, 4, 5, and 6 to 2.

GRAPHS

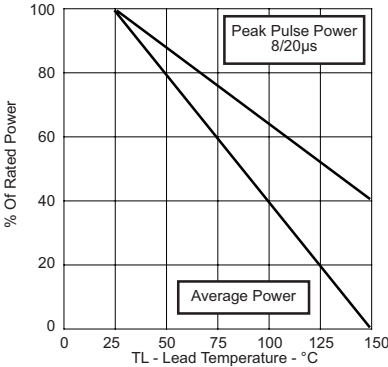
**FIGURE 1
PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2
PULSE WAVE FORM**



**FIGURE 3
POWER DERATING CURVE**



ESDA05C-4

SOT-23-6 PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE

SOT-23-6

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|----------|-----------|-----------|
| | MIN | MAX | MIN | MAX |
| A | 2.80 | 3.05 | 0.110 | 0.120 |
| B | 1.50 | 1.75 | 0.059 | 0.070 |
| C | 0.90 | 1.30 | 0.036 | 0.051 |
| D | 0.35 | 0.50 | 0.014 | 0.020 |
| E | 0.85 | 1.05 | 0.033 | 0.040 |
| F | 1.70 | 2.10 | 0.067 | 0.083 |
| G | 0.90 | 1.45 | 0.036 | 0.057 |
| J | 0.09 | 0.20 | 0.003 | 0.008 |
| K | 2.60 | 3.00 | 0.102 | 0.118 |
| L | 0.20 TYP | 0.20 TYP | 0.007 TYP | 0.007 TYP |
| M | 0.35 | 0.55 | 0.014 | 0.022 |

MOUNTING PAD

| TYPICAL | | |
|---------|-------------|--------|
| DIM | Millimeters | Inches |
| 1 | 0.70 | 0.028 |
| 2 | 1.90 | 0.074 |
| 3 | 0.95 | 0.037 |
| 4 | 2.40 | 0.094 |
| 5 | 1.00 | 0.039 |

NOTES

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

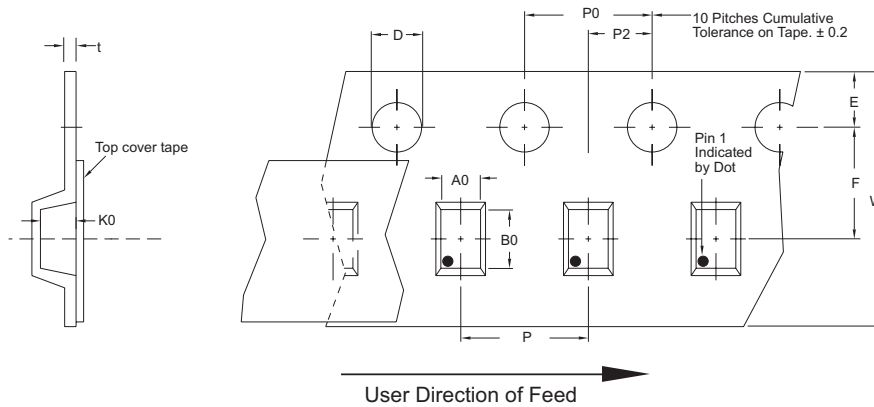
TAPE & REEL/BULK ORDERING NOMENCLATURE

- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix -T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., *ESDA05C-4-T7*
- Suffix -LF = Lead-Free, Pure-Tin Plating, i.e., *ESDA05C-4-LF-T7*.

Outline & Dimensions: Rev 2 - 10/05, 06013

Tape & Reel Specifications (Dimensions in millimeters)

| Reel Dia. | Tape Width | A0 | B0 | K0 | D | E | F | W | P0 | P2 | P | tmax |
|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| 178mm (7") | 8mm | 3.20 ± 0.10 | 3.20 ± 0.10 | 1.65 ± 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 |



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