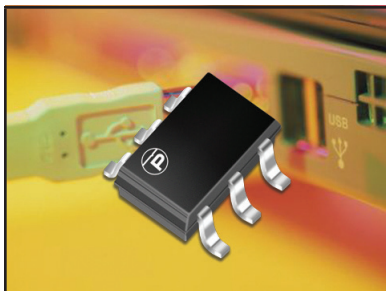


## LOW CAPACITANCE TVS ARRAY



**SOT-23-6 PACKAGE**

### DESCRIPTION

The ESDA05C-5, is a high frequency, transient suppression protector of computer and telecommunication systems. This device is packaged in a SOT-23-6 plastic case and is available in a 5 volt, bidirectional configuration.

Due to its low capacitance, the ESDA05C-5 is ideal protection of computer 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
- 80 Watts Peak Pulse Power per Line (tp = 8/20μs)
- Protection for 5 Lines
- Bidirectional Configuration
- Low Clamping Voltage
- Low Leakage Current < 1μA
- Low Capacitance < 15pF per Diode
- RoHS Compliant
- REACH Compliant

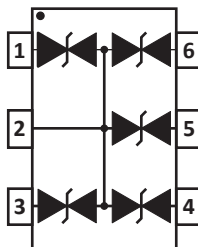
### APPLICATIONS

- Set-Top Box Interfaces
- Computer Interfaces
- Communications Equipment

### MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-23-6 Package
- Approximate Weight: 16 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 <sub>PP</sub>  | 80         | Watts |
| Operating Temperature                         | T <sub>L</sub>   | -55 to 150 | °C    |
| Storage Temperature                           | T <sub>STG</sub> | -55 to 150 | °C    |

### ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

| PART<br>NUMBER<br>(Note 1) | DEVICE<br>MARKING | RATED<br>STAND-OFF<br>VOLTAGE<br><br>V <sub>WM</sub><br>VOLTS | MINIMUM<br>BREAKDOWN<br>VOLTAGE<br><br>@ 1mA<br>V <sub>(BR)</sub><br>VOLTS | MAXIMUM<br>LEAKAGE<br>CURRENT<br><br>@V <sub>WM</sub><br>I <sub>D</sub><br>μA | TYPICAL<br>CAPACITANCE<br>(Note 2)<br><br>@0V, 1MHz<br>C<br>pF |
|----------------------------|-------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------|
| ESDA05C-5                  | ED5               | 5.0                                                           | 6.1                                                                        | 1                                                                             | 15                                                             |

#### NOTES

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

## TYPICAL DEVICE CHARACTERISTICS

FIGURE 1  
PEAK PULSE POWER VS PULSE TIME

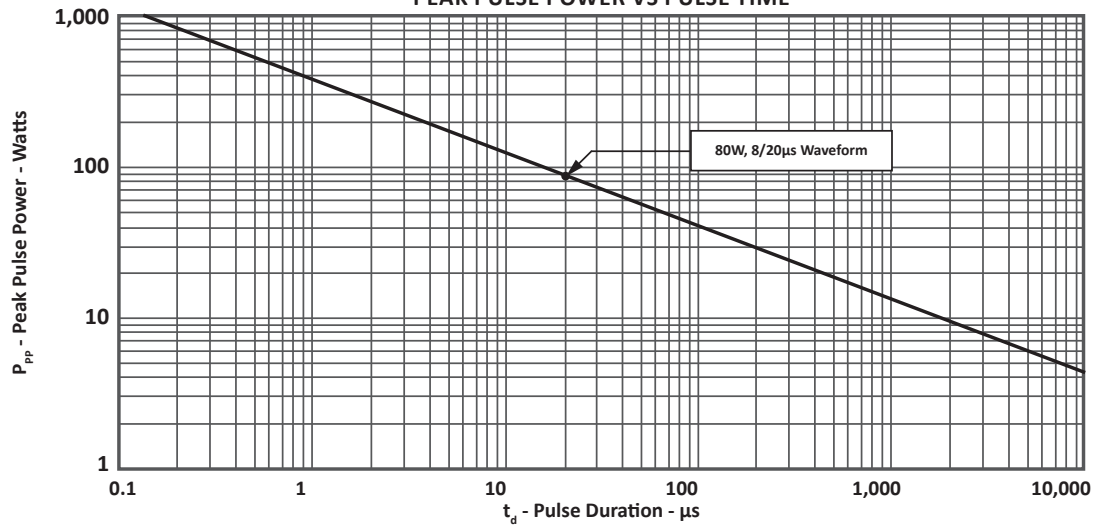
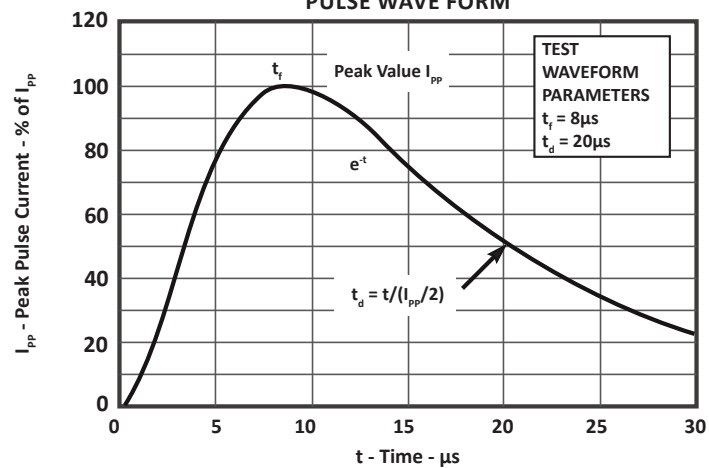


FIGURE 2  
PULSE WAVE FORM

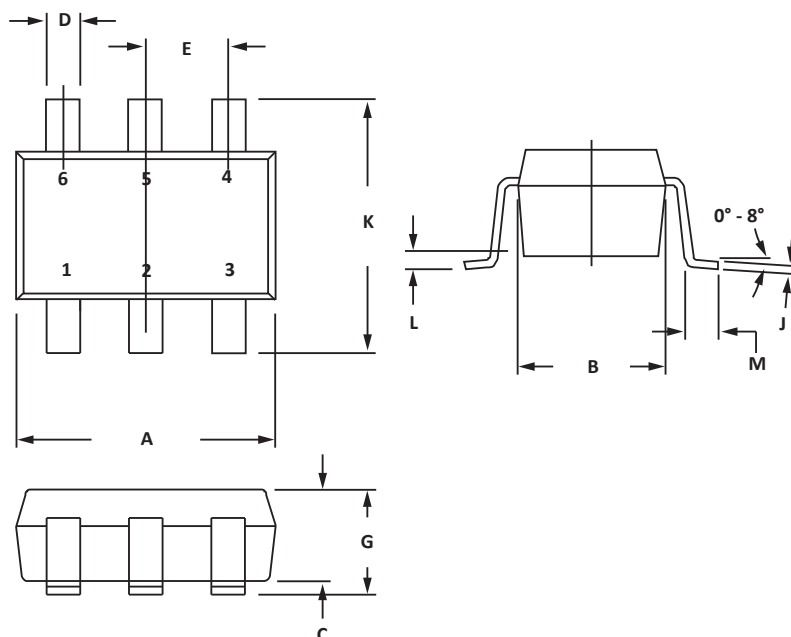


**SOT-23-6 PACKAGE INFORMATION**
**OUTLINE DIMENSIONS**

| 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   | 0.30        | 0.40 | 0.012  | 0.016 |
| E   | 0.85        | 1.05 | 0.033  | 0.040 |
| 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   | 0.0         | 0.15 | 0.0    | 0.006 |
| M   | 0.30        | 0.60 | 0.012  | 0.024 |

**NOTES**

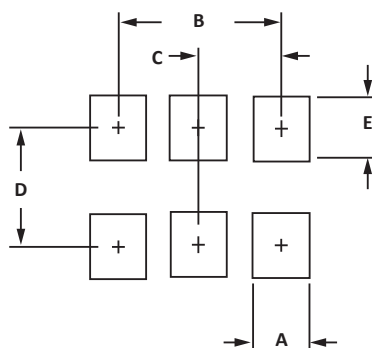
1. Controlling dimension: inches.
2. Dimensioning and tolerances per ANSI Y14.5M, 1985.
3. Dimensions are exclusive of mold flash and metal burrs.


**PAD LAYOUT DIMENSIONS**

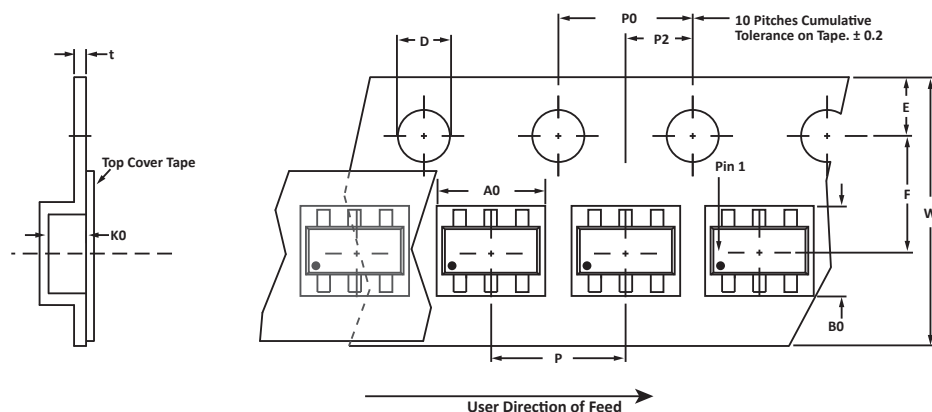
| DIM | MILLIMETERS | INCHES  |
|-----|-------------|---------|
|     | NOMINAL     | NOMINAL |
| A   | 0.70        | 0.028   |
| B   | 1.90        | 0.074   |
| C   | 0.95        | 0.037   |
| D   | 2.40        | 0.094   |
| E   | 1.00        | 0.039   |

**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        | 3.20 ± 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 |

## NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T7 = 7" Reel - 3,000 pieces per 8mm tape.
4. Marking on Part - marking code (see page 2) and pin one defined by dot on package.

Package outline, pad layout and tape specifications per document number 06013.R5 2/11

## ORDERING INFORMATION

| BASE PART NUMBER | LEADFREE SUFFIX | TAPE SUFFIX | QTY/REEL | REEL SIZE | TUBE QTY |
|------------------|-----------------|-------------|----------|-----------|----------|
| ESDA05C-5        | -LF             | -T7         | 3,000    | 7"        | n/a      |

This device is only available in a Lead-Free configuration.

## COMPANY INFORMATION

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### COMPANY PROFILE

In business more than 25 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers LED wafer die for ESD protection and related high frequency products. ProTek Devices is ISO 9001:2015 certified.

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