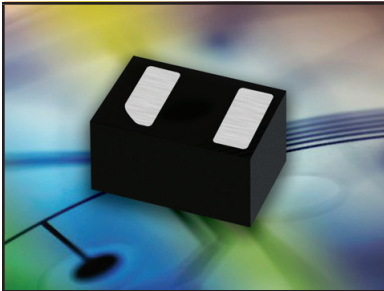


**LOW CAPACITANCE TVS ARRAY****DFN1006-2L PACKAGE****DESCRIPTION**

The PESD12LCB is a low capacitance TVS array that is designed to protect components from damage or upset due to electrostatic discharge (ESD). The device is offered in a bidirectional configuration and is available in two lead DFN-1006 package. The PESD12LCB features a large cross sectional area junction for conducting high transient currents, fast response time and low operating voltage. This device meets the IEC 61000-4-2 and IEC 61000-4 requirements.

**FEATURES**

- Compatible with IEC 61000-4-2 (ESD): Air  $\pm 30\text{kV}$ , Contact  $\pm 30\text{kV}$
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- 90 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu\text{s}$ )
- Bidirectional Configuration
- Protects 1 Data Line
- Low Clamping Voltage
- Response Time Typically  $< 1\text{ns}$
- Replacement for MLV (0402)
- Low Capacitance
- Fast Response Time:  $< 1\text{ns}$
- RoHS Compliant
- REACH Compliant

**APPLICATIONS**

- Cellular Phones
- Portable Devices
- Digital Cameras
- Power Supplies

**MECHANICAL CHARACTERISTICS**

- Molded DFN1006-2L Package
- Approximate Weight: 0.8 milligrams
- Lead-Free Plating: 100% Matte Sn(Tin)
- Solder Reflow Temperature -  $260\text{--}270^\circ\text{C}$
- 8mm Tape and Reel Per EIA Standard 481
- Meets MSL 1 Requirements
- Flammability Rating UL 94V-0

**PIN CONFIGURATION**

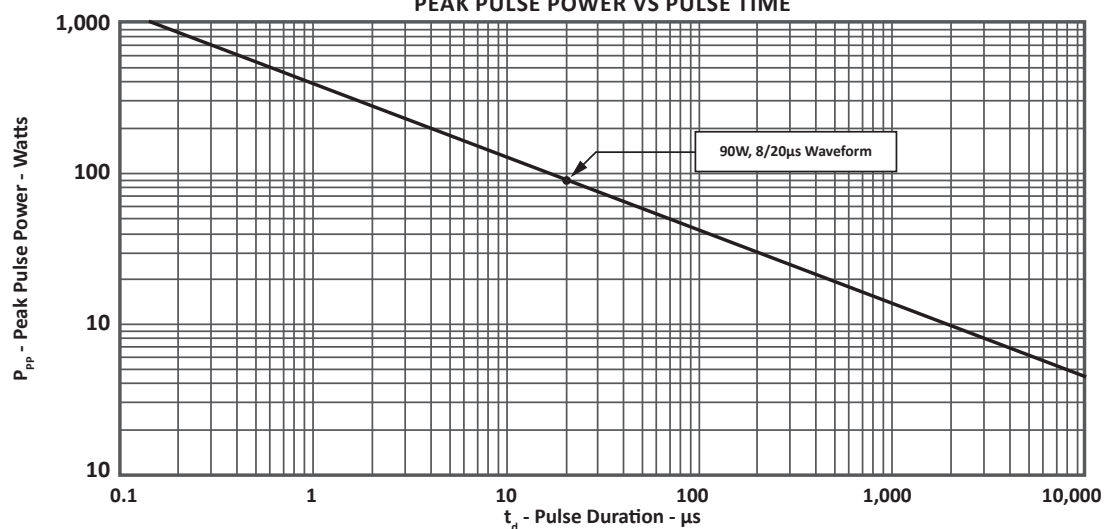
## TYPICAL DEVICE CHARACTERISTICS

## MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

| PARAMETER                                             | SYMBOL    | VALUE      | UNITS |
|-------------------------------------------------------|-----------|------------|-------|
| Storage Temperature                                   | $T_{STG}$ | -55 to 150 | °C    |
| Junction Temperature                                  | $T_J$     | -55 to 150 | °C    |
| Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1 | $P_{PP}$  | 90         | Watts |

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

| PART NUMBER | DEVICE MARKING | RATED STAND-OFF VOLTAGE<br><br>$V_{WM}$<br>VOLTS | MINIMUM BREAKDOWN VOLTAGE<br><br>@ 1mA<br>$V_{(BR)}$<br>VOLTS | MAXIMUM CLAMPING VOLTAGE (Fig. 2)<br><br>@ IP = 1A<br>$V_C$<br>VOLTS | MAXIMUM CLAMPING VOLTAGE (Fig. 2)<br><br>@ IP = 4A<br>$V_C$<br>VOLTS | MAXIMUM LEAKAGE CURRENT<br><br>@ 12V<br>$I_D$<br>$\mu A$ | TYPICAL CAPACITANCE<br><br>@ 0V, 1MHz<br>C<br>pF |
|-------------|----------------|--------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------|
| PESD12LCB   | N              | 12.0                                             | 14                                                            | 22                                                                   | 27                                                                   | 1.0                                                      | 8                                                |

 FIGURE 1  
 PEAK PULSE POWER VS PULSE TIME


## TYPICAL DEVICE CHARACTERISTICS

FIGURE 2  
PULSE WAVE FORM

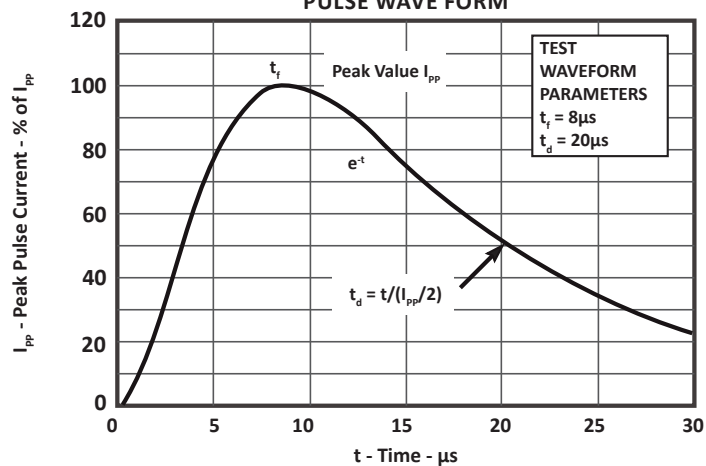
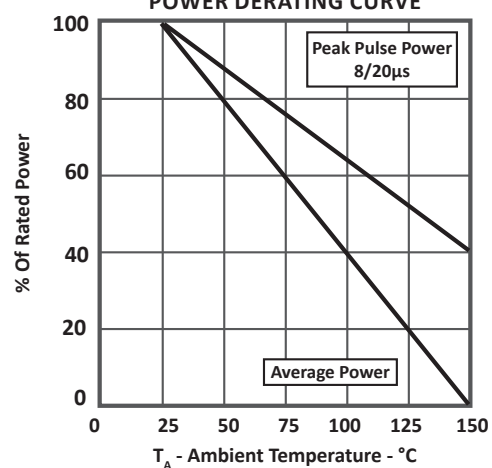
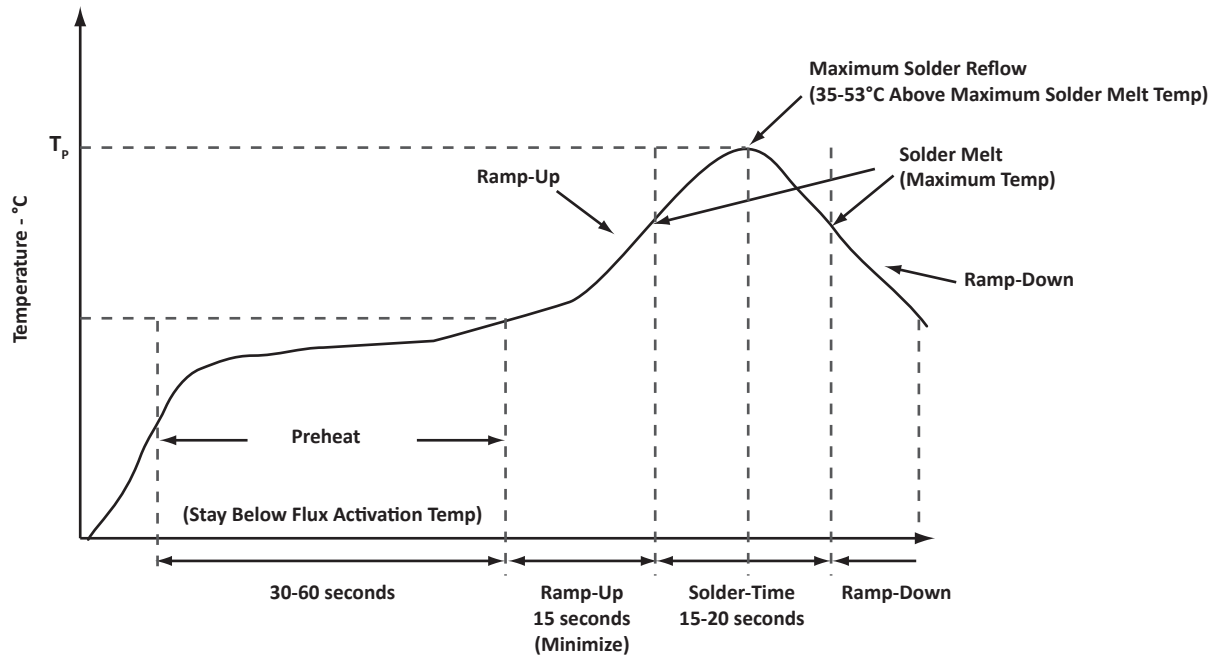


FIGURE 3  
POWER DERATING CURVE



**PACKAGE INFORMATION**

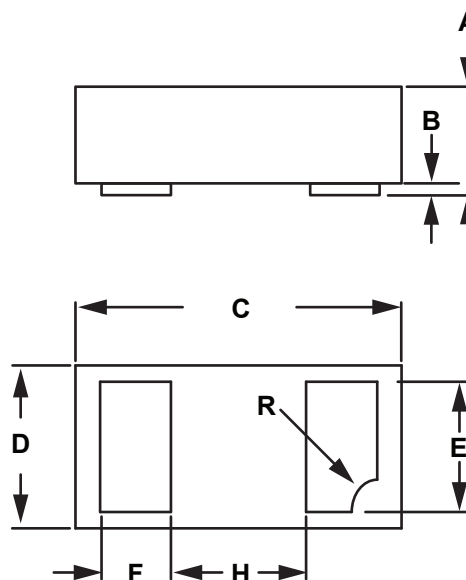
## PACKAGE INFORMATION

### OUTLINE DIMENSIONS

| DIM | MILLIMETERS |       | INCHES    |       |
|-----|-------------|-------|-----------|-------|
|     | MIN         | MAX   | MIN       | MAX   |
| A   | 0.34        | 0.50  | 0.013     | 0.020 |
| B   | 0.00        | 0.05  | 0.00      | 0.002 |
| C   | 0.95        | 1.075 | 0.037     | 0.042 |
| D   | 0.55        | 0.675 | 0.021     | 0.026 |
| E   | 0.45        | 0.55  | 0.017     | 0.021 |
| F   | 0.20        | 0.30  | 0.007     | 0.011 |
| H   | 0.40 TYP    |       | 0.015 TYP |       |
| R   | 0.05        | 0.15  | 0.001     | 0.005 |

#### NOTES

1. Controlling dimension: inches.

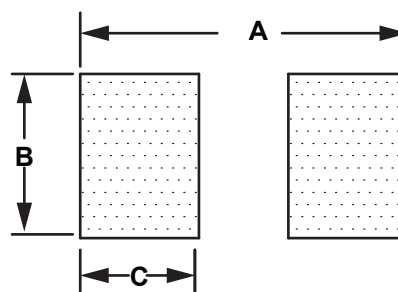


### PAD LAYOUT DIMENSIONS

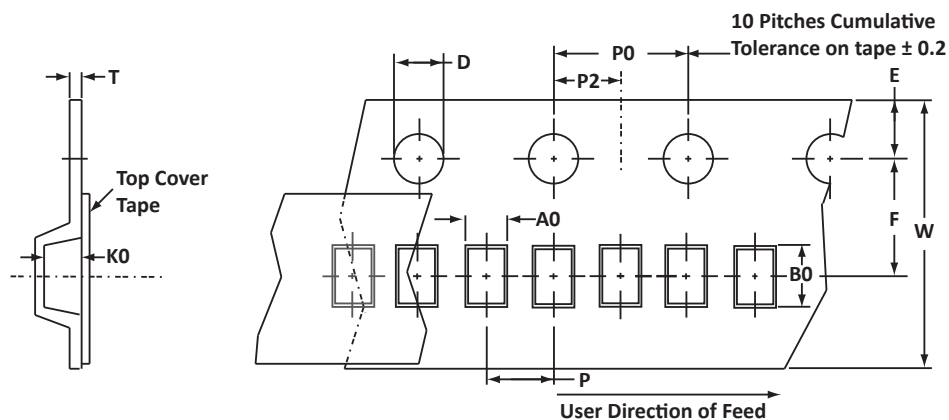
| DIM | MILLIMETERS |  | INCHES |  |
|-----|-------------|--|--------|--|
|     | NOM         |  | NOM    |  |
| A   | 1.10        |  | 0.043  |  |
| B   | 0.60        |  | 0.024  |  |
| C   | 0.40        |  | 0.016  |  |

#### NOTES

1. Decimal tolerances for mounting pad:  $\pm 0.003''$  ( $\pm 0.08$  mm).



## TAPE AND REEL



## SPECIFICATIONS

| REEL DIA.  | TAPE WIDTH | A0  | B0  | K0  | D               | E               | F               | W               | P0              | P2              | P               | tmax |
|------------|------------|-----|-----|-----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| 178mm (7") | 8mm        | TBD | TBD | TBD | $1.55 \pm 0.10$ | $1.75 \pm 0.10$ | $3.50 \pm 0.05$ | $8.00 \pm 0.30$ | $4.00 \pm 0.10$ | $2.00 \pm 0.05$ | $2.00 \pm 0.05$ | 0.25 |

## NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T710 = 7" Reel - 10,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2).

## ORDERING INFORMATION

| BASE PART NUMBER | LEADFREE SUFFIX | TAPE SUFFIX | QTY/REEL | REEL SIZE | TUBE QTY |
|------------------|-----------------|-------------|----------|-----------|----------|
| PESD12LCB        | N/A             | -T710       | 10,000   | 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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