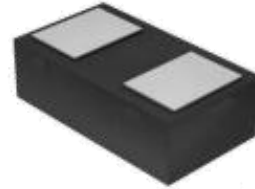


### 1. Features

- Ultra Low Capacitance: 0.30pF(typ.)
- Reverse Working Voltage: 5V
- IEC 61000-4-2 (ESD Air):  $\pm 20\text{kV}$   
IEC 61000-4-2 (ESD Contact):  $\pm 20\text{kV}$   
IEC 61000-4-5 (Lightning 8/20 $\mu\text{s}$ ): 4.5A

### 2. Pin Description



### 3. Applications

- Smart Phone and Tablet PC
- TV and Set Top Box
- Wearable Devices
- PDA

### 4. Schematic Diagram



### 5. Order Information

| Type         | Package | Size (mm)      | Delivery Form | Delivery Quantity |
|--------------|---------|----------------|---------------|-------------------|
| PESDUC2FD5VB | DFN1006 | 1.00x0.60x0.37 | 7" T&R        | 10,000            |

### 6. Limiting Values( $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| Symbol           | Parameter                       | Conditions                       | Min | Max      | Unit               |
|------------------|---------------------------------|----------------------------------|-----|----------|--------------------|
| $V_{\text{ESD}}$ | Electrostatic Discharge Voltage | IEC 61000-4-2; Contact Discharge | -   | $\pm 20$ | kV                 |
|                  |                                 | IEC 61000-4-2; Air Discharge     | -   | $\pm 20$ | kV                 |
| $P_{\text{PP}}$  | Peak Pulse Power                | $t_P = 8/20\text{ }\mu\text{s}$  | -   | 100      | W                  |
| $I_{\text{PPM}}$ | Rated Peak Pulse Current        | $t_P = 8/20\text{ }\mu\text{s}$  | -   | 4.5      | A                  |
| $T_A$            | Operating Temperature Range     | -                                | -55 | 125      | $^{\circ}\text{C}$ |
| $T_{\text{stg}}$ | Storage Temperature Range       | -                                | -55 | 150      | $^{\circ}\text{C}$ |

#### 7. Electrical Characteristics( $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Symbol    | Parameter               | Conditions                                    | Min | Typ. | Max  | Unit          |
|-----------|-------------------------|-----------------------------------------------|-----|------|------|---------------|
| $V_{RWM}$ | Reverse Working Voltage | $T_A = 25^\circ\text{C}$                      | -   | -    | 5.0  | V             |
| $V_{BR}$  | Breakdown Voltage       | $I_R = 1\text{mA}; T_A = 25^\circ\text{C}$    | 6.0 | 8.5  | 9.5  | V             |
| $I_R$     | Reverse Leakage Current | $V_{RWM} = 5\text{V}; T_A = 25^\circ\text{C}$ | -   | -    | 0.1  | $\mu\text{A}$ |
| $V_C$     | Clamping Voltage        | $I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$   | -   | -    | 12   | V             |
|           |                         | $I_{PP} = 4.5\text{A}, t_p = 8/20\mu\text{s}$ | -   | -    | 22   | V             |
| $C_J$     | Junction Capacitance    | $V_R = 0\text{V}, f = 1\text{MHz}$            | -   | 0.30 | 0.40 | pF            |

#### 8. Typical Characteristics

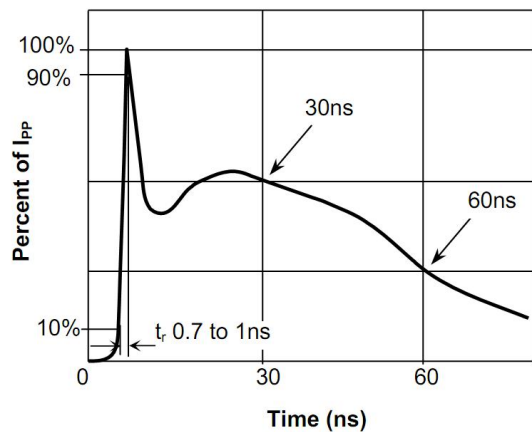


Fig.1 Pulse Waveform-ESD(IEC61000-4-2)

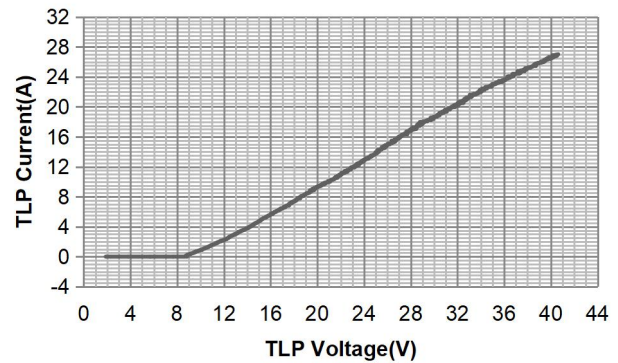


Fig.2 Transmission Line Pulse (TLP)

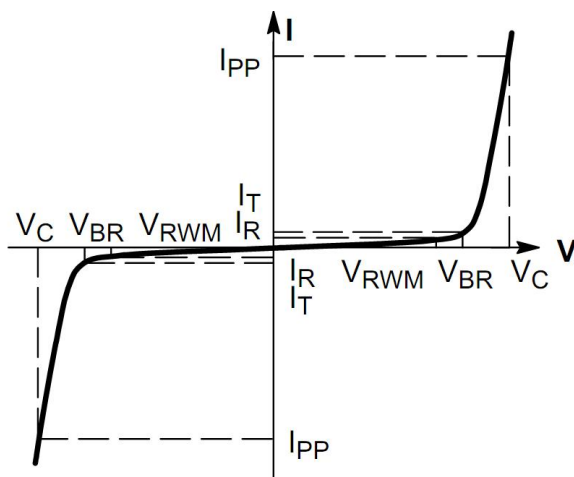


Fig.3 V-I Characteristics for Bidirectional Diode

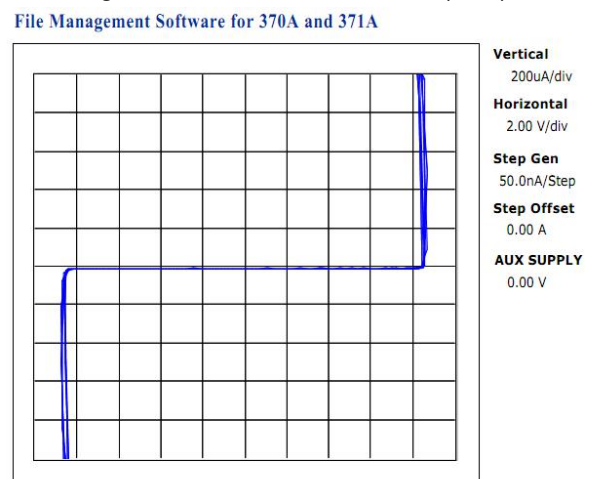
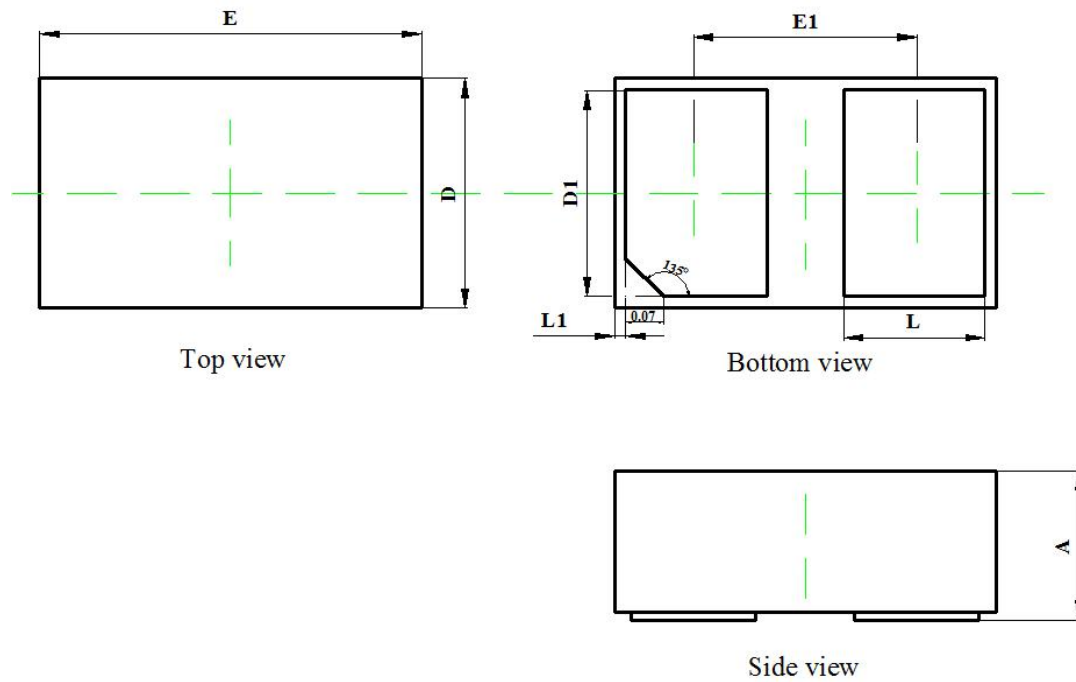


Fig.4 IV Curve

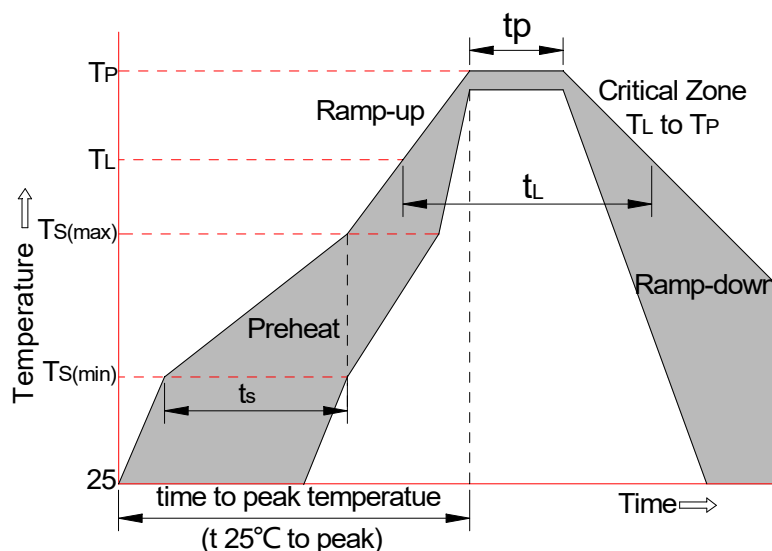
## 9. Package Dimension

**DFN1006 Package Outline**



| Symbol    | Dimensions In<br>Millimeters |       | Dimensions In<br>Inches |       |
|-----------|------------------------------|-------|-------------------------|-------|
|           | Min                          | Max   | Min                     | Max   |
| <b>A</b>  | 0.320                        | 0.420 | 0.013                   | 0.017 |
| <b>D</b>  | 0.550                        | 0.650 | 0.022                   | 0.026 |
| <b>E</b>  | 0.950                        | 1.050 | 0.037                   | 0.041 |
| <b>D1</b> | 0.450                        | 0.550 | 0.018                   | 0.022 |
| <b>E1</b> | 0.550                        | 0.650 | 0.022                   | 0.026 |
| <b>L</b>  | 0.280                        | 0.380 | 0.011                   | 0.015 |
| <b>L1</b> | 0.000                        | 0.100 | 0.000                   | 0.004 |

## 10. Soldering Parameters



| Reflow Condition                                        |                                   | Pb-Free Assembly |
|---------------------------------------------------------|-----------------------------------|------------------|
| Pre-heat                                                | -Temperature Min ( $T_{s(min)}$ ) | +150°C           |
|                                                         | -Temperature Max( $T_{s(max)}$ )  | +200°C           |
|                                                         | -Time (Min to Max) ( $t_s$ )      | 60-180 secs.     |
| Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak) |                                   | 3°C/sec. Max     |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                    |                                   | 3°C/sec. Max     |
| Reflow                                                  | -Temperature( $T_L$ )(Liquid us)  | +217°C           |
|                                                         | -Temperature( $t_L$ )             | 60-150 secs.     |
| Peak Temp ( $T_p$ )                                     |                                   | +260(+0/-5)°C    |
| Time within 5°C of actual Peak Temp ( $t_p$ )           |                                   | 30 secs. Max     |
| Ramp-down Rate                                          |                                   | 6°C/sec. Max     |
| xTime 25°C to Peak Temp ( $T_P$ )                       |                                   | 8 min. Max       |
| Do not exceed                                           |                                   | +260°C           |