

## Features

- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 10pF max
- Ultra low leakage: nA level
- Low operating voltage:  $\pm 5V$
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30kV$
    - Contact discharge:  $\pm 30kV$
  - – IEC61000-4-5 (Lightning) 7A (8/20  $\mu s$ )
- RoHS Compliant

## Mechanical Characteristics

- Package: DFN1006-2 (0402)
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Shipping Qty : 12000pcs/7Inch Tape & Reel

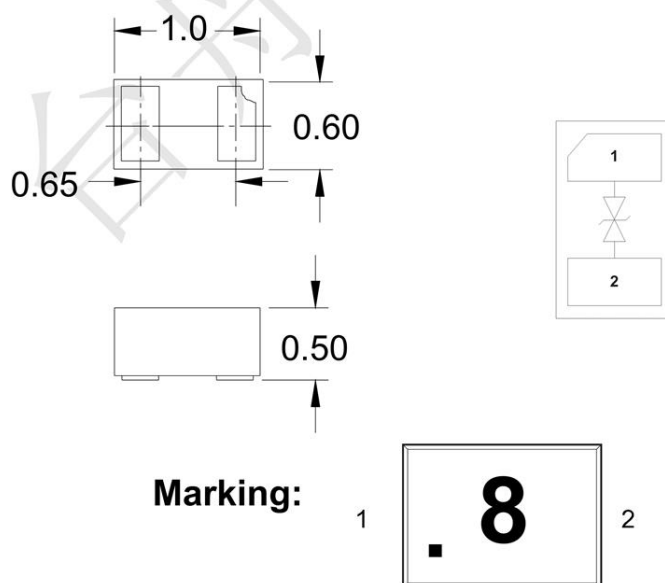
## Applications

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

## Ordering Information

| Part Number | Qty per Reel | Reel Size |
|-------------|--------------|-----------|
| ESD5471X    | 12000        | 7"        |

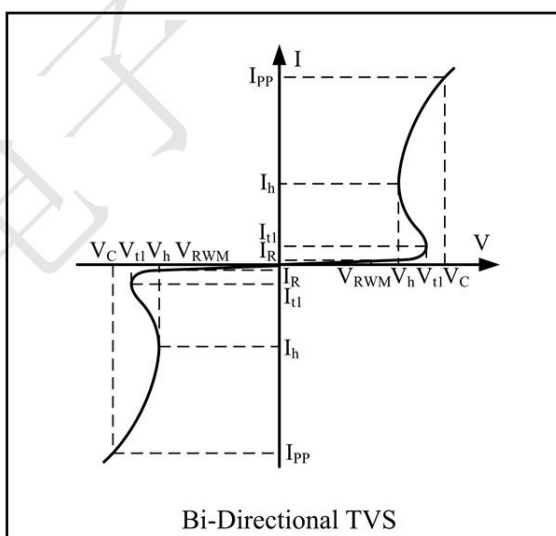
## Dimensions and Pin Configuration



**Absolute Maximum Ratings** (Tamb=25°C unless otherwise specified)

| Parameter                       | Symbol | Value       | Unit |
|---------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs)       | Ppk    | 75          | W    |
| Peak Pulse Current (8/20μs)     | Ipp    | 7           | A    |
| ESD per IEC 61000-4-2 (Air)     | VESD   | ±30         | kV   |
| ESD per IEC 61000-4-2 (Contact) |        | ±30         |      |
| Operating Temperature Range     | TJ     | -55 to +125 | °C   |
| Storage Temperature Range       | Tstg   | -55 to +150 | °C   |

| Symbol    | Parameter                           |
|-----------|-------------------------------------|
| $V_{RWM}$ | Nominal Reverse Working Voltage     |
| $I_R$     | Reverse Leakage Current @ $V_{RWM}$ |
| $V_{tl}$  | Trigger Voltage                     |
| $I_{tl}$  | Trigger Current @ $V_{tl}$          |
| $V_h$     | Holding Voltage                     |
| $I_h$     | Holding Current @ $V_h$             |
| $V_C$     | Clamping Voltage @ $I_{PP}$         |
| $I_{PP}$  | Maximum Peak Pulse Current          |
| $V_F$     | Forward Voltage @ $I_F$             |
| $C_{ESD}$ | Parasitic Capacitance               |

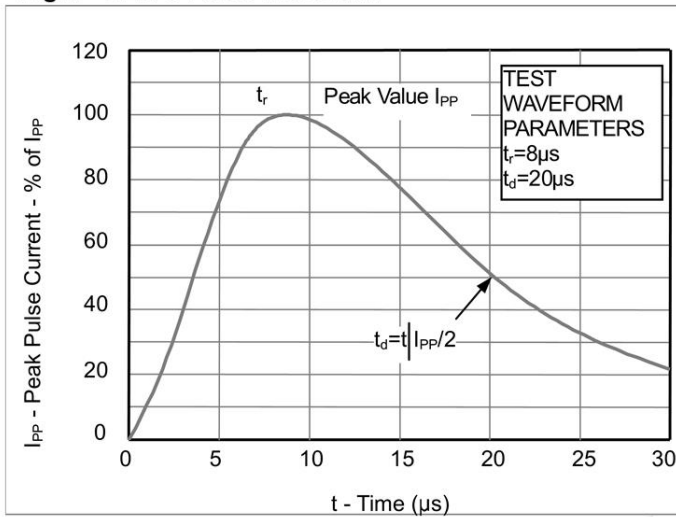


**Electrical Characteristics** (TA=25°C unless otherwise specified)

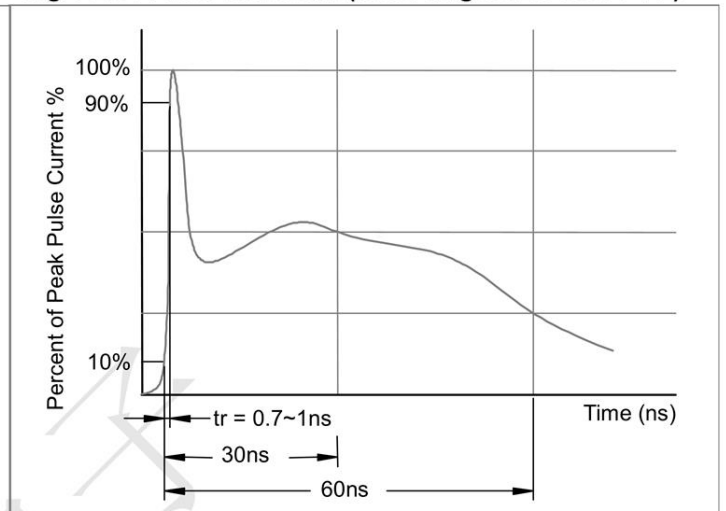
| Parameter               | Symbol    | Min | Typ | Max | Unit | Test Condition                                   |
|-------------------------|-----------|-----|-----|-----|------|--|
| Reverse Working Voltage | $V_{RWM}$ |     |     | 5   | V    |  |
| Breakdown Voltage       | $V_{BR}$  | 5.6 |     |     | V    | $I_T = 1\text{mA}$                               |
| Reverse Holding Voltage | $V_H$     | 5.5 |     |     | V    | $I_H = 1\text{mA}$                               |
| Reverse Leakage Current | $I_R$     |     |     | 0.2 | μA   | $V_{RWM} = 5\text{V}$                            |
| Clamping Voltage        | $V_C$     |     |     | 9   | V    | $I_{pp}=1\text{A}(8 \times 20\mu\text{s pulse})$ |
| Clamping Voltage        | $V_C$     |     | 15  | 17  | V    | $I_{pp}=7\text{A}(8 \times 20\mu\text{s pulse})$ |
| Junction Capacitance    | $C_J$     |     | 9   | 10  | pF   | $V_R = 0\text{V}, f = 1\text{MHz}$               |

**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**

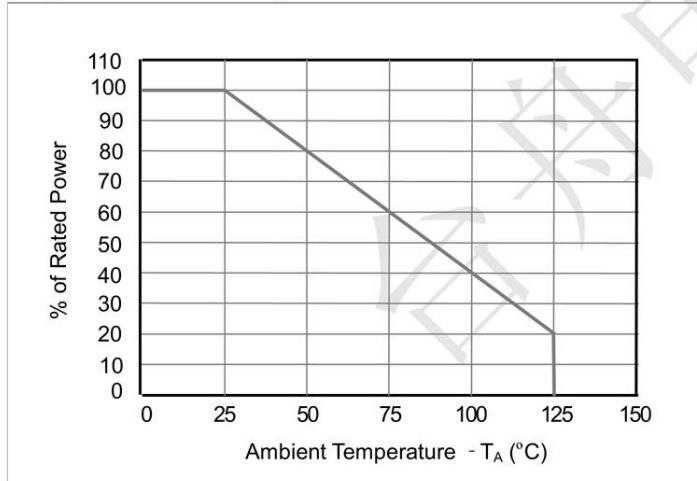
**Fig1. 8/20 $\mu\text{s}$  Pulse Waveform**



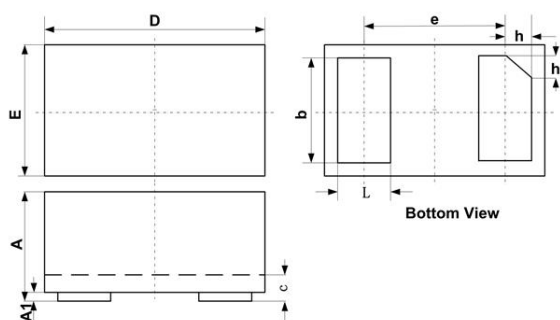
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**

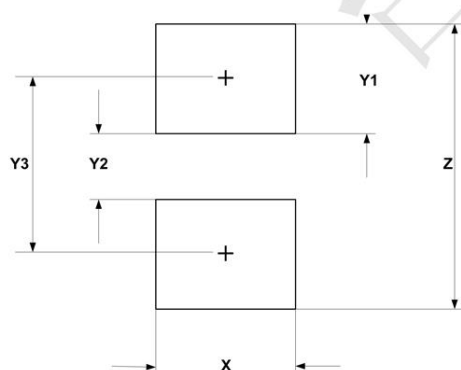


**DFN1006-2 Package Outline Drawing (0402)**



| SYM | DIMENSIONS  |      |      |           |       |       |
|-----|-------------|------|------|-----------|-------|-------|
|     | MILLIMETERS |      |      | INCHES    |       |       |
|     | MIN         | NOM  | MAX  | MIN       | NOM   | MAX   |
| A   | 0.45        | 0.50 | 0.55 | 0.018     | 0.020 | 0.022 |
| A1  | 0.00        | 0.02 | 0.05 | 0.000     | 0.001 | 0.002 |
| b   | 0.45        | 0.50 | 0.55 | 0.018     | 0.020 | 0.022 |
| c   | 0.12        | 0.15 | 0.18 | 0.005     | 0.006 | 0.007 |
| D   | 0.95        | 1.00 | 1.05 | 0.037     | 0.039 | 0.041 |
| e   | 0.65 BSC    |      |      | 0.026 BSC |       |       |
| E   | 0.55        | 0.60 | 0.65 | 0.022     | 0.024 | 0.026 |
| L   | 0.20        | 0.25 | 0.30 | 0.008     | 0.010 | 0.012 |
| h   | 0.07        | 0.12 | 0.17 | 0.003     | 0.005 | 0.007 |

**Suggested Land Pattern**



| SYM | DIMENSIONS  |        |
|-----|-------------|--------|
|     | MILLIMETERS | INCHES |
| X   | 0.60        | 0.024  |
| Y1  | 0.50        | 0.020  |
| Y2  | 0.30        | 0.012  |
| Y3  | 0.80        | 0.032  |
| Z   | 1.30        | 0.052  |

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