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## Small Package Bi-directional TVS for ESD Protection

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### **Compliance Standard**

- ◆ IEC 61000-4-2 (ESD)  
8KV - Contact Discharge  
15KV - Air Discharge
- ◆ IEC 61000-4-4 (EFT) 40A (5/50ns)

### **Applications**

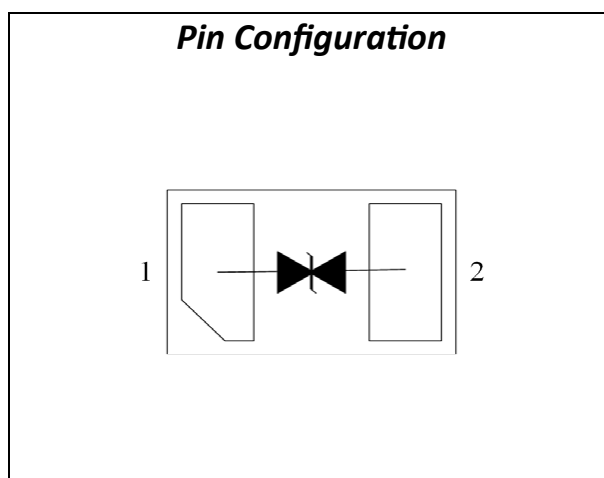
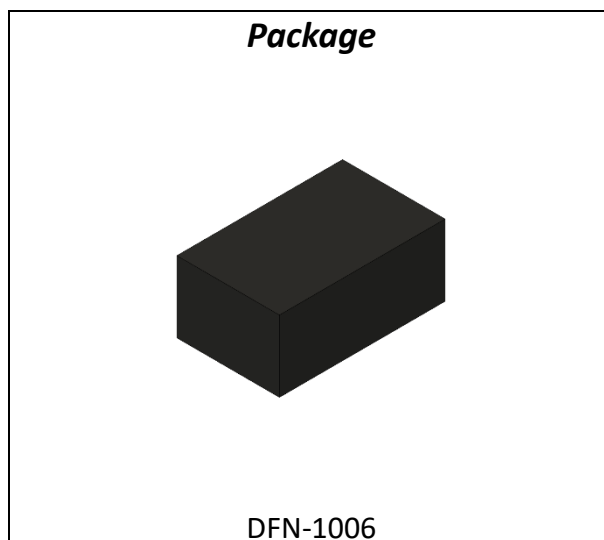
- ◆ Networking
- ◆ Embedded System
- ◆ Handheld Device
- ◆ Computer

### **Features**

- ◆ 50W Peak Pulse Power
- ◆ Low Clamping Voltage
- ◆ Low Leakage Current
- ◆ Single Line, Bi-Directional

### **Mechanical Characteristics**

- ◆ DFN-1006 Package (0402)
- ◆ Weight 0.5 Milligram (Approximate)
- ◆ Flammability Rating UL94V-0
- ◆ Lead Free Plating
- ◆ Reel Size 7"
- ◆ 10000 PCS Per Reel



## DEVICE CHARACTERISTICS

| Maximum Rating              |                  |           |      |
|-----------------------------|------------------|-----------|------|
| Parameter                   | Symbol           | Value     | Unit |
| Peak Pulse Power            | P <sub>PP</sub>  | 50        | Watt |
| Lead Soldering Temperature  | T <sub>L</sub>   | 260 (10s) | °C   |
| Operating Temperature Range | T <sub>J</sub>   | -40~125   | °C   |
| Storage Temperature Range   | T <sub>STG</sub> | -55~150   | °C   |

| Electrical Characteristics (@25 °C) |         |                            |                          |                          |                        |                        |                        |
|-------------------------------------|---------|----------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|
| Part Number                         | Marking | V <sub>RWM</sub><br>(Volt) | V <sub>B</sub><br>(Volt) | V <sub>C</sub><br>(Volt) | I <sub>PP</sub><br>(A) | I <sub>R</sub><br>(uA) | C <sub>J</sub><br>(pF) |
| NLESDA12CP                          | LR      | 12.0                       | 13.3                     | 23.0                     | 2.0                    | 1.0                    | 4.5                    |



Figure1. Clamping waveform of positive 8KV ESD contact



Figure2. Clamping waveform of negative 8KV ESD contact

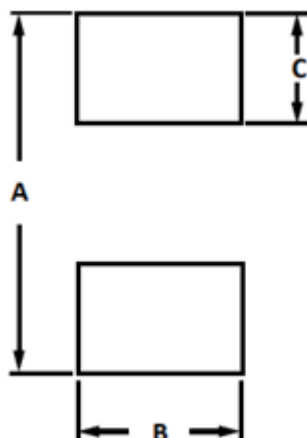
## DEVICE OUTLINE

| <i>Outline Dimension</i> |             |       |        |       |
|--------------------------|-------------|-------|--------|-------|
| Symbol                   | Millimeters |       | Inches |       |
|                          | Min         | Max   | Min    | Max   |
| A                        | 0.95        | 1.05  | 0.037  | 0.041 |
| B                        | 0.55        | 0.65  | 0.022  | 0.026 |
| C                        | 0.42        | 0.58  | 0.016  | 0.022 |
| H                        | 0.01        | 0.07  | 0.000  | 0.003 |
| L1                       | 0.275       | 0.325 | 0.011  | 0.013 |
| L2                       | 0.275       | 0.325 | 0.011  | 0.013 |
| L4                       | 0.675       | 0.725 | 0.027  | 0.029 |
| b                        | 0.45        | 0.55  | 0.017  | 0.021 |



## LAYOUT PAD DIMENSION

| <i>Layout PAD Dimension</i> |             |      |        |       |
|-----------------------------|-------------|------|--------|-------|
| Symbol                      | Millimeters |      | Inches |       |
|                             | Min         | Max  | Min    | Max   |
| A                           | 1.3         | 1.5  | 0.051  | 0.059 |
| B                           | 0.5         | 0.6  | 0.02   | 0.024 |
| C                           | 0.43        | 0.53 | 0.017  | 0.021 |



| <i>Revision History</i> | <i>Description</i>           |
|-------------------------|------------------------------|
| v2.0                    | Re-organize datasheet layout |
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