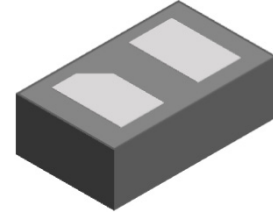
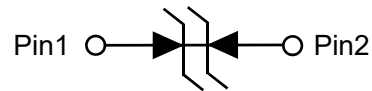
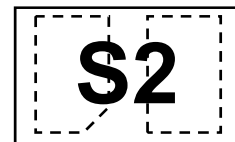


**Bi-directional 12V Normal Capacitance ESD Protector****Description**

The PESDNC2XD12VBHLF protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, low operating voltage. It gives designer the flexibility to protect one unidirectional line in applications where arrays are not practical.

**DFN0603-2L(Bottom View)****Circuit Diagram****Feature**

- 150W peak pulse power per line ( $t_p = 8/20\mu s$ )
- DFN0603-2L package
- Response time is typically  $< 1$  ns
- Bidirectional configurations
- Low clamping voltage
- RoHS compliant
- Transient protection for data lines to IEC 61000-4-2(ESD)  $\pm 30kV$ (air),  $\pm 30kV$ (contact); IEC 61000-4-5 (Lightning) 8A (8/20us)

**Marking (Top View)****Applications**

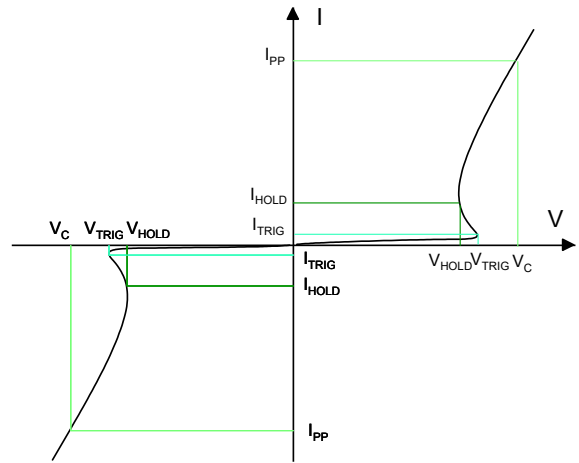
- Cell phone handsets and accessories
- Personal digital assistants (PDA's)
- Notebooks, desktops, and servers
- Portable instrumentation
- Cordless phones
- Digital cameras
- Peripherals

**Mechanical Characteristics**

- Mounting position: Any
- Qualified max reflow temperature: 260°C
- Device meets MSL 1 requirements
- DFN0603-2L without plating

## Electronics Parameter

| Symbol    | Parameter                           |
|-----------|-------------------------------------|
| $V_{RWM}$ | Peak Reverse Working Voltage        |
| $I_R$     | Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$  | Breakdown Voltage @ $I_T$           |
| $I_T$     | Test Current                        |
| $I_{PP}$  | Maximum Reverse Peak Pulse Current  |
| $V_C$     | Clamping Voltage @ $I_{PP}$         |
| $P_{PP}$  | Peak Pulse Power                    |
| $C_J$     | Junction Capacitance                |
| $I_F$     | Forward Current                     |
| $V_F$     | Forward Voltage @ $I_F$             |



## Electrical characteristics per line@25°C (unless otherwise specified)

| Parameter                    | Symbol    | Conditions                                  | Min. | Typ. | Max. | Units         |
|------------------------------|-----------|---|------|------|------|---------------|
| Peak Reverse Working Voltage | $V_{RWM}$ | -   | -    | -    | 12   | V             |
| Breakdown Voltage            | $V_{BR}$  | $I_t = 1\text{mA}$                          | 13   | -    | 17   | V             |
| Reverse Leakage Current      | $I_R$     | $V_{RWM} = 12\text{V}$                      | -    | -    | 1.0  | $\mu\text{A}$ |
| Clamping Voltage             | $V_C$     | $I_{PP} = 8\text{A}, t_p = 8/20\mu\text{s}$ | -    | 18   | 20   | V             |
| Junction Capacitance         | $C_J$     | $V_R = 0\text{V}, f = 1\text{MHz}$          | -    | 14.5 | 20   | pF            |

## Absolute maximum rating@25°C

| Rating   | Symbol         | Value        | Units |
|--|----------------|--------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )   | $P_{PP}$       | 150          | W     |
| Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ ) | $I_{PP}$       | 8.0          | A     |
| Lead Soldering Temperature                     | $T_L$          | 260 (10 sec) | °C    |
| Junction and Storage Temperature Range         | $T_J, T_{STG}$ | -55~+150     | °C    |
| ESD Protection-Contact Discharge               | $V_{ESD}$      | $\pm 30$     | kV    |
| ESD Protection-Air Discharge                   | $V_{ESD}$      | $\pm 30$     | kV    |

Typical Characteristics

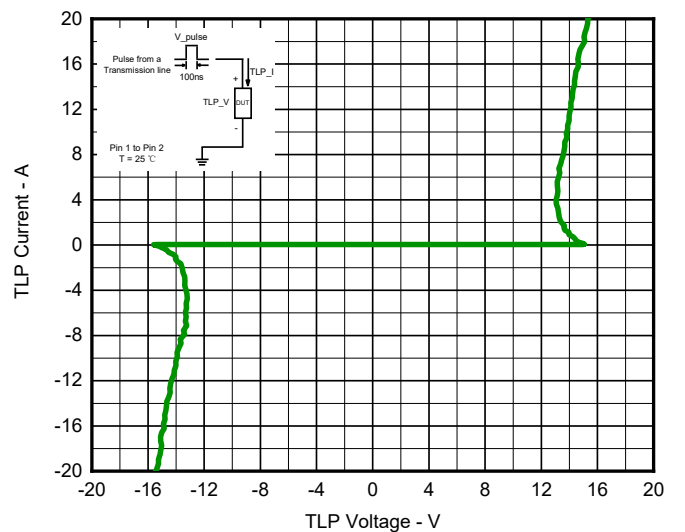
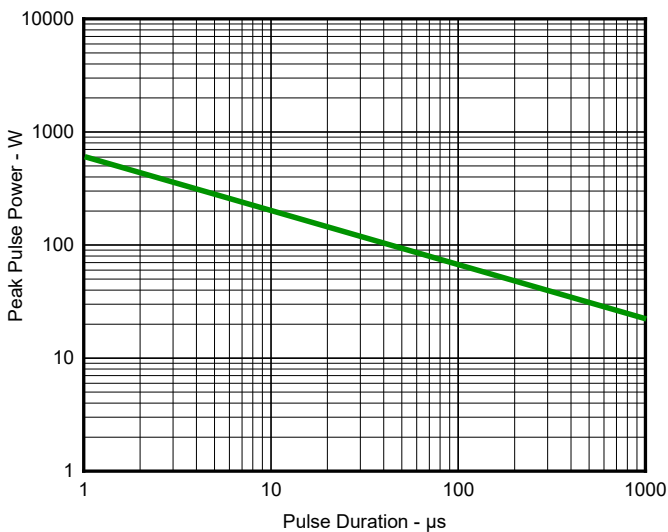
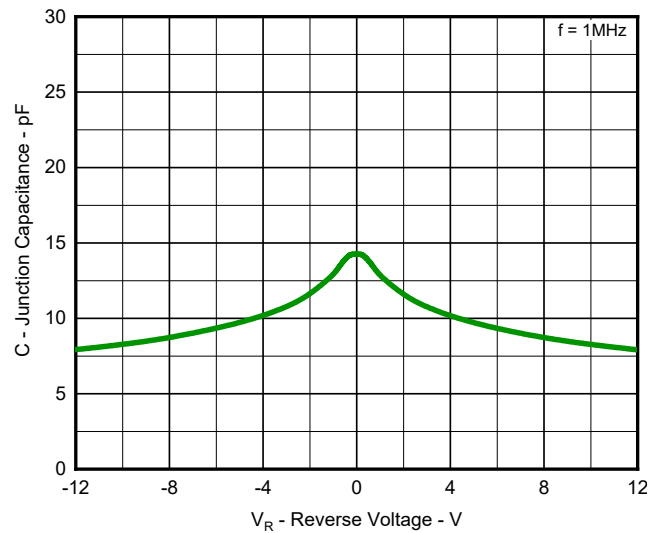
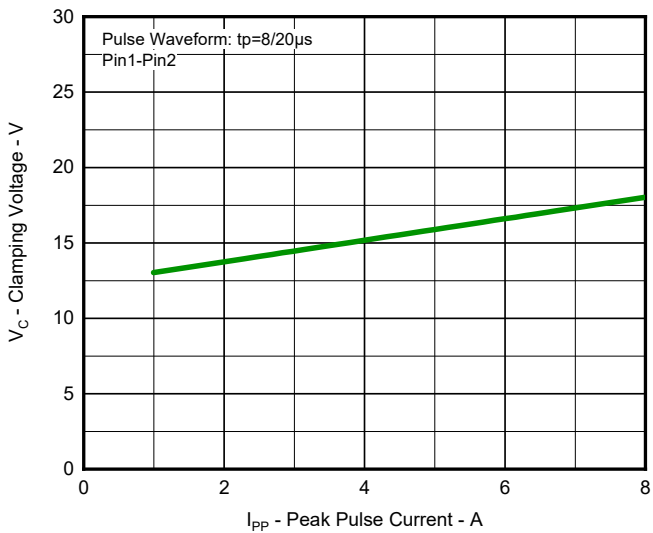
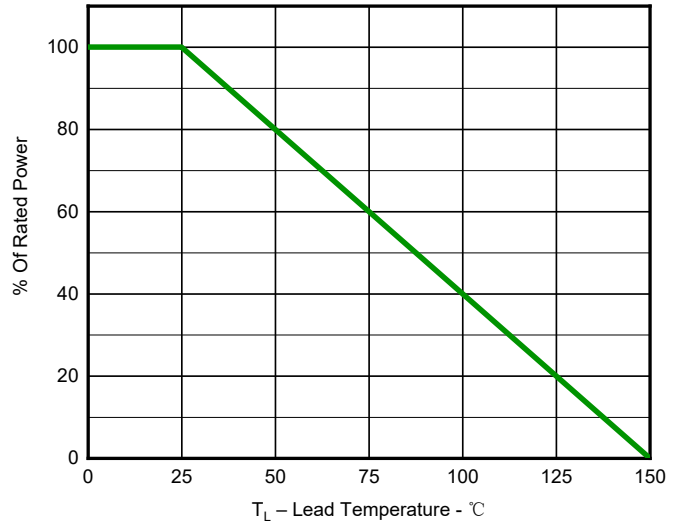
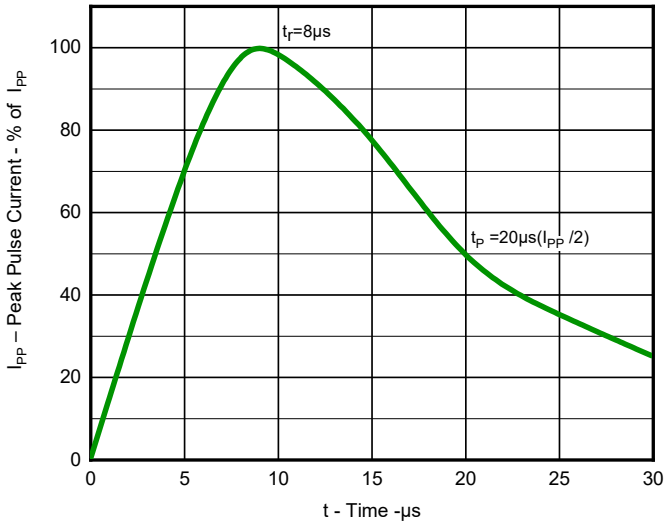
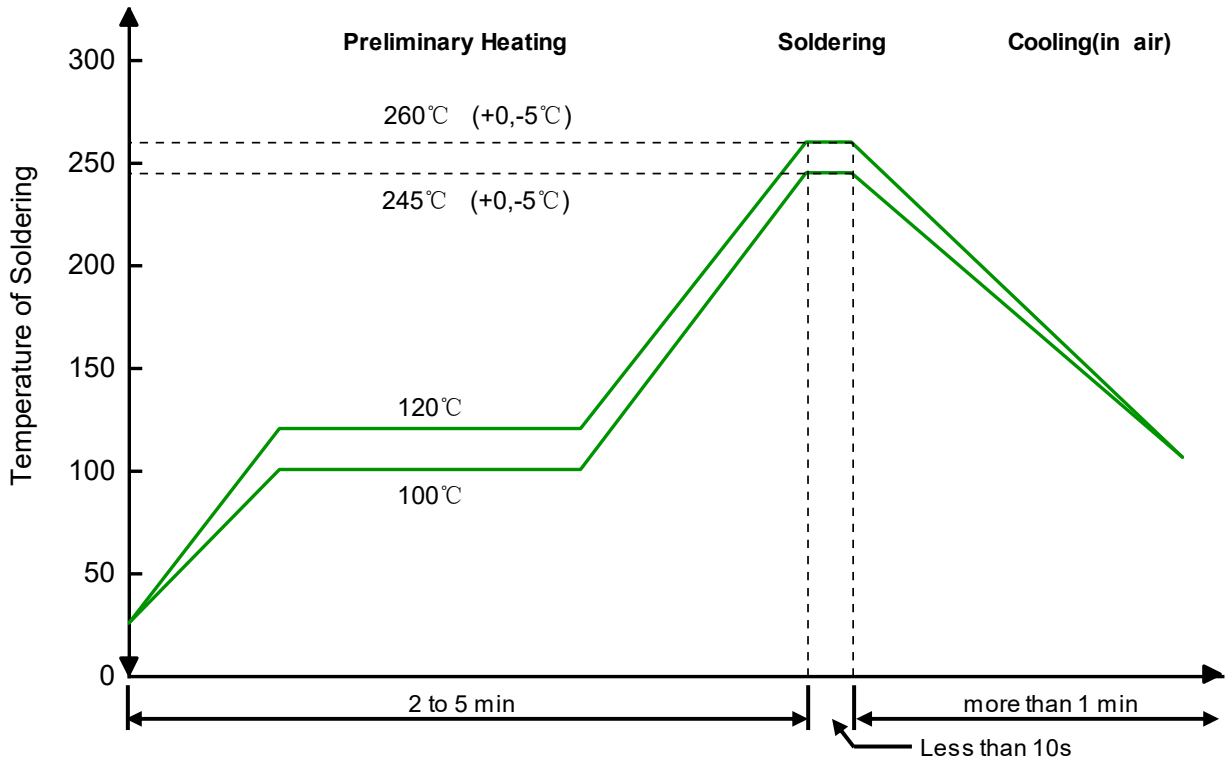


Fig 5. Non Repetitive Peak Pulse Power vs. Pulse Time

Fig 6. TLP Measurement

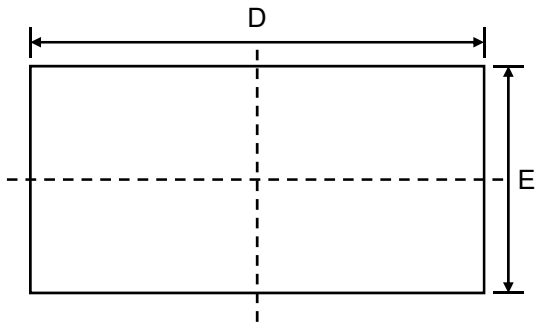
Solder Reflow Recommendation



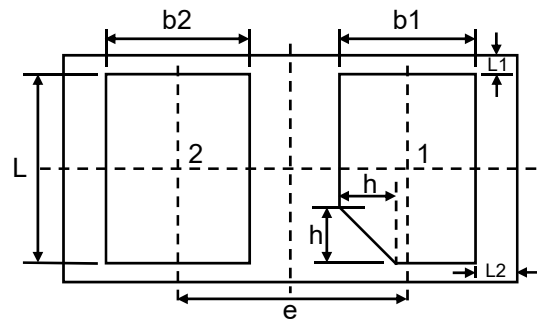
Remark: Pb free for 260°C; Pb for 245°C.



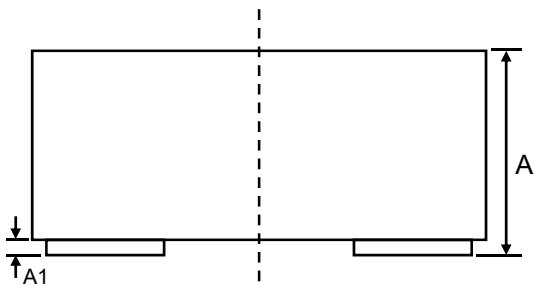
Product dimension (DFN0603-2L)



Top View

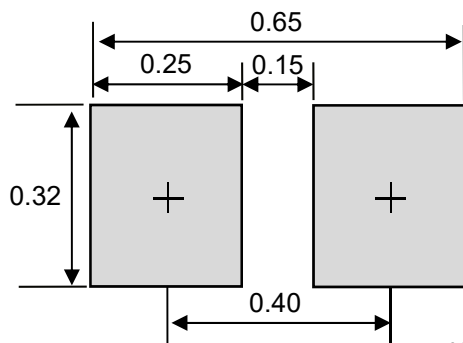


Bottom View



Side View


| Dim | Millimeters |      | Inches    |       |
|-----|-------------|------|-----------|-------|
|     | Min         | Max  | Min       | Max   |
| A   | 0.28        | 0.35 | 0.011     | 0.014 |
| A1  | 0.00        | 0.05 | 0.000     | 0.002 |
| b1  | 0.12        | 0.24 | 0.005     | 0.009 |
| b2  | 0.13        | 0.24 | 0.005     | 0.009 |
| D   | 0.55        | 0.65 | 0.022     | 0.026 |
| E   | 0.25        | 0.35 | 0.010     | 0.014 |
| e   | 0.36 BSC    |      | 0.014 BSC |       |
| L   | 0.18        | 0.30 | 0.007     | 0.012 |
| L1  | 0.04 BSC    |      | 0.002 BSC |       |
| L2  | 0.04 BSC    |      | 0.002 BSC |       |
| h   | 0.05        | 0.10 | 0.002     | 0.004 |



Unit: mm

Suggested PCB Layout


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