

**描述 / Descriptions**

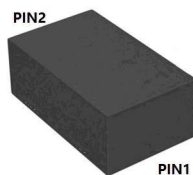
DFN0603 塑封封装 ESD 保护二极管。  
DFN0603 Plastic Package ESD Protection Diode.

**特征 / Features**

超小封装, 低电容  $C_d = 9\text{pF}$ , ESD 防护能力高达  $\pm 30\text{ kV}$ , 符合 IEC 61000-4-2 项目。无卤产品。  
Ultra small package, Low diode capacitance  $C_d = 9\text{ pF}$ , ESD protection up to  $\pm 30\text{ kV}$  according IEC 61000-4-2. HF Product.

**用途 / Applications**

适用于手机及配件, 便携式电子产品, 通信系统, 计算机及周边设备。  
Suitable for cellular handsets and accessories, Portable electronics, Communication systems, Computers and peripherals.

**内部等效电路 / Equivalent Circuit****引脚排列 / Pinning****放大及印章代码 /  $h_{FE}$  Classifications & Marking**

见印章说明。See Marking Instructions.


**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter                                 | 符号<br>Symbol | 数值<br>Rating | 单位<br>Unit |
|-------------------------------------------------|--------------|--------------|------------|
| Peak pulse power ( $t_p = 8/20\mu s$ )          | $P_{pp}$     | 70           | W          |
| Peak pulse current ( $t_p = 8/20\mu s$ )        | $I_{pp}$     | 6.0          | A          |
| ESD according to IEC61000-4-2 air discharge     | $V_{ESD}$    | $\pm 30$     | KV         |
| ESD according to IEC61000-4-2 contact discharge |              | $\pm 30$     |            |
| Junction temperature                            | $T_J$        | 125          | °C         |
| Storage temperature                             | $T_{STG}$    | -55~+150     | °C         |

**电性能参数 / Electrical Characteristics(Ta=25°C)**

| 参数<br>Parameter                         | 符号<br>Symbol | 测试条件<br>Test Conditions     | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit |
|-----------------------------------------|--------------|-----------------------------|------------|------------|------------|------------|
| Reverse maximum working voltage         | $V_{RWM}$    |                             |            |            | $\pm 5.0$  | V          |
| Reverse leakage current                 | $I_R$        | $V_{RWM} = 5V$              |            |            | 1          | uA         |
| Reverse breakdown voltage <sup>3)</sup> | $V_{BR}$     | $I_R = \pm 1.0mA$           | $\pm 5.1$  |            |            | V          |
| Clamping voltage <sup>1,2)</sup>        | $V_{CL}$     | $I_{PP} = 1.0A$             |            |            | 8          | V          |
|                                         |              | $I_{PP} = 6.0A$             |            |            | 12         |            |
| Diode capacitance <sup>4)</sup>         | $C_J$        | $V_R = 0V \quad f = 1MHz$   |            | 9          | 12         | pF         |
|                                         |              | $V_R = 5.0V \quad f = 1MHz$ |            | 6          | 8          |            |
| Dynamic resistance <sup>5)</sup>        | $R_{dyn}$    |                             |            | 0.28       |            | $\Omega$   |

## Notes:

[1] Non-repetitive current pulse 8/20  $\mu s$  exponentially decaying waveform according to IEC 61000-4-5.

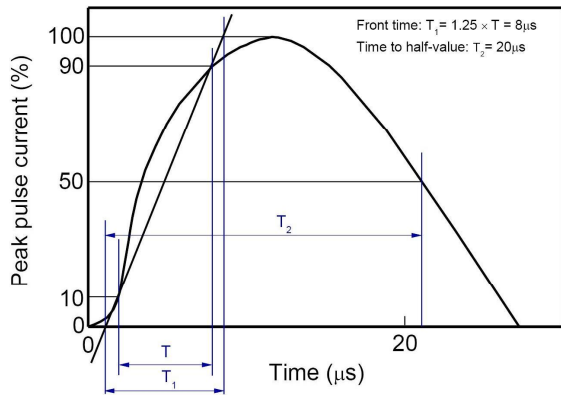
[2] Measured from pin 1 to pin 2.

[3] Breakdown voltage is always symmetrical within the characterized range, which means no difference breakdown voltage from pin 1 to pin 2 and vice versa.

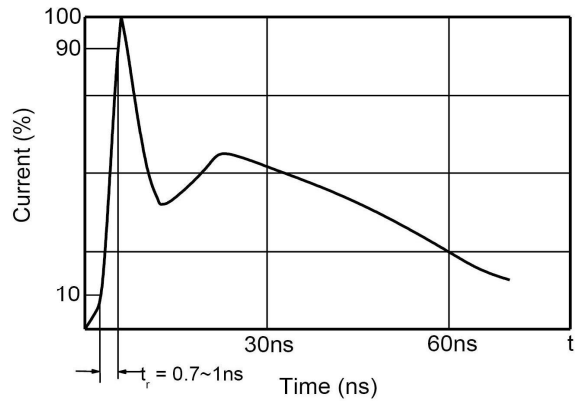
[4] This parameter is guaranteed by design.

[5] Calculated from S-parameter values.

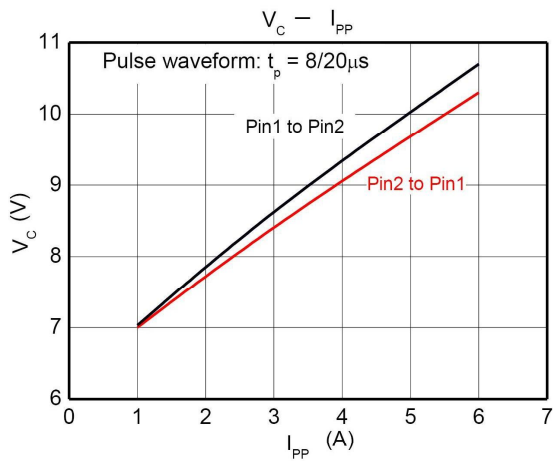
## 电参数曲线图 / Electrical Characteristic Curve



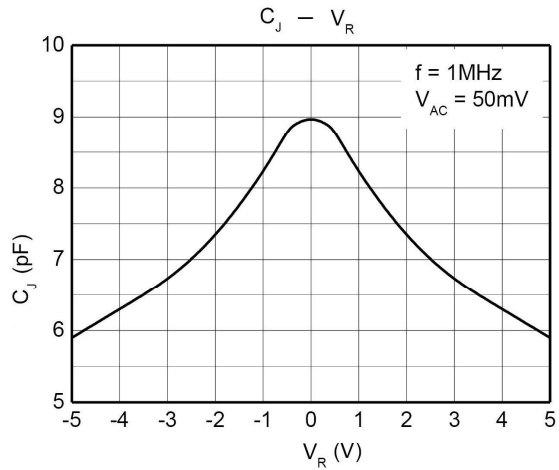
8/20μs waveform per IEC61000-4-5



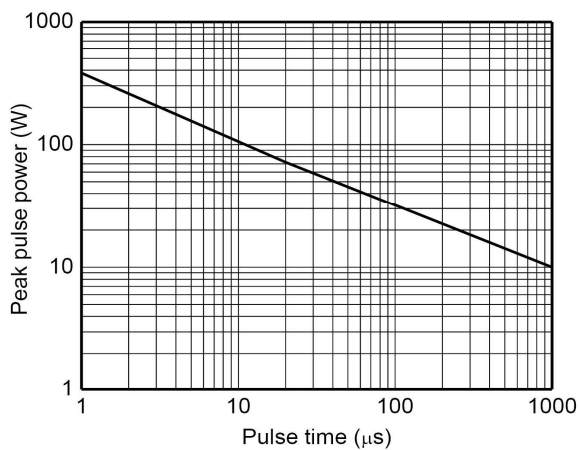
Contact discharge current waveform per IEC61000-4-2



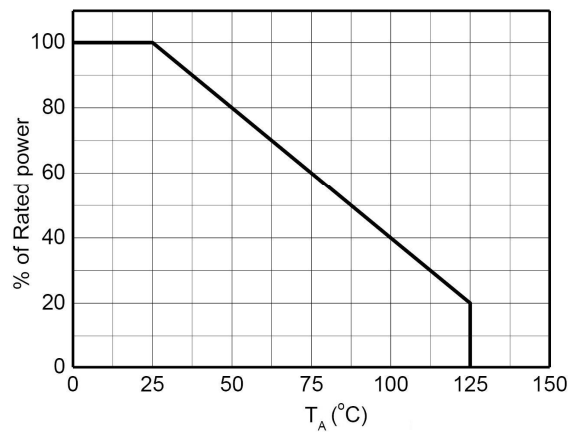
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage

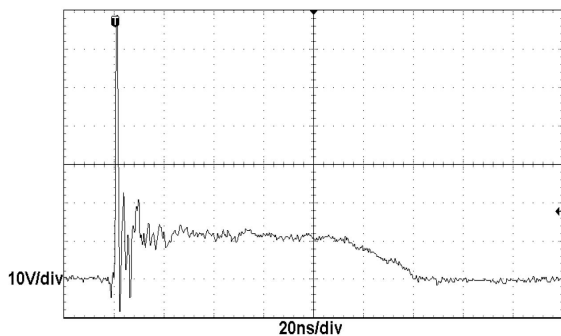


Non-repetitive peak pulse power vs. Pulse time

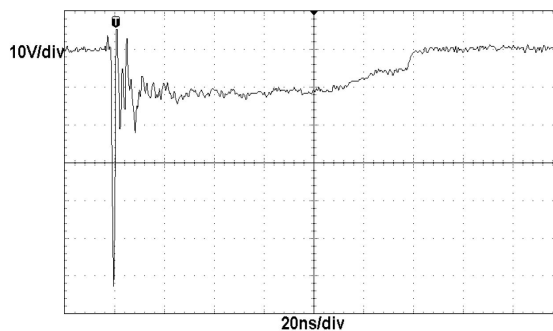


Power derating vs. Ambient temperature

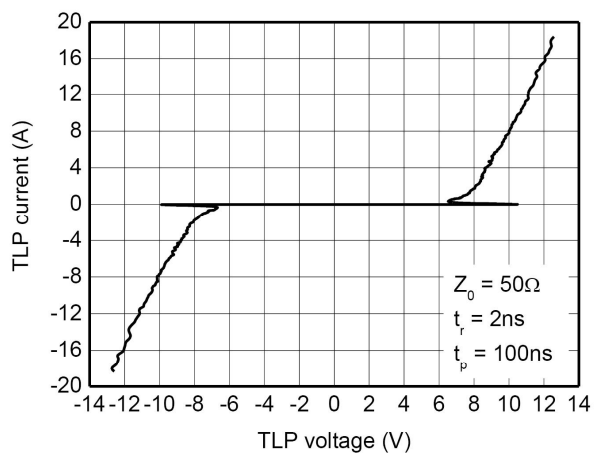
## 电参数曲线图 / Electrical Characteristic Curve



ESD clamping  
(+8kV contact discharge per IEC61000-4-2)



ESD clamping  
(-8kV contact discharge per IEC61000-4-2)

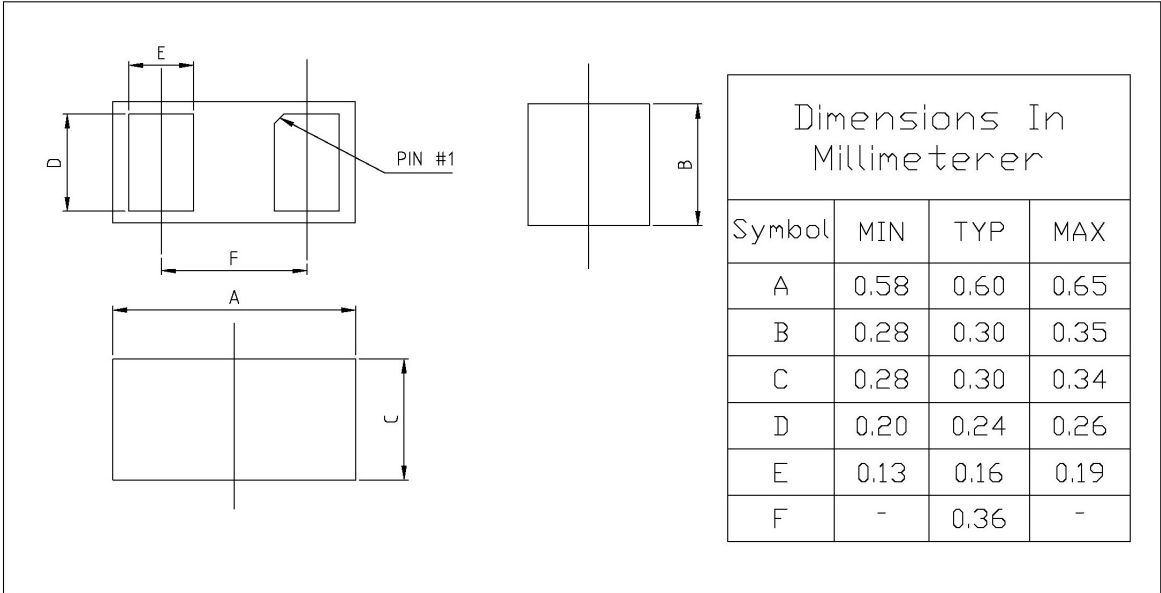


TLP Measurement

外形尺寸图 / Package Dimensions

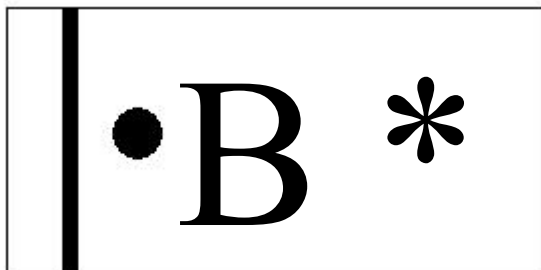
DFN0603-2L

Unit:mm





**印章说明 / Marking Instructions**



说明：

B：为型号代码

\*：为生产批号代码，随生产批号变化

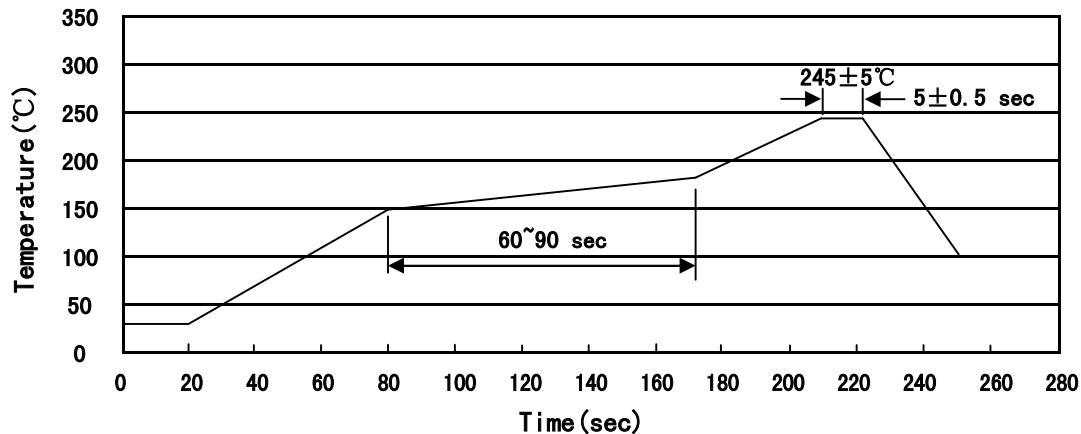
Note：

B：Product Type.

\*：Lot No. Code,code change with Lot No.



## 回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 150 ~ 180°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

## 耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

## 包装规格 / Packaging SPEC.

卷盘包装 / REEL

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|-----------------------------------------|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Reel                                    | Inner Box 盒 | Outer Box 箱 |
| DFN0603-2L           | 15,000             | 10                      | 150,000                | 6                            | 900,000                | 7" ×8                                   | 180×120×180 | 390×385×205 |

## 使用说明 / Notices