

**描述 / Descriptions**

DFN1006-2L 塑封封装单线程双向 ESD 保护二极管。

DFN1006-2L Plastic Package 1-Line,Bi-directional , ESD Protection Diode.

**特征 / Features**

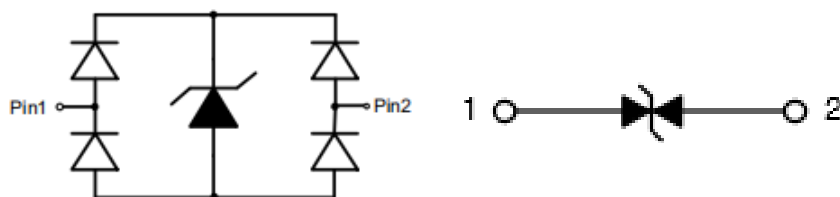
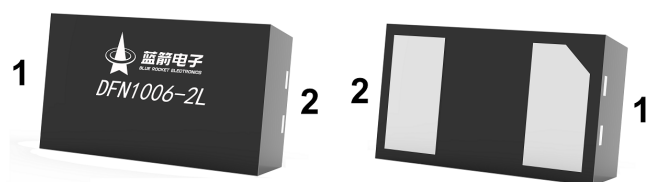
超小封装，正常响应时间小于 1ns，防静电等级达到 20KV 以上，符合 IEC61000-4-2 的 4 级 ESD 保护项目，无卤产品。

Ultra small package, Response Time is Typically < 1 ns, ESD > 20 kV per Human Body Model,IEC61000-4-2 Level 4 ESD Protection,HF Product.

**用途 / Applications**

适用于手机音频、MP3 播放器、数码相机、便携式设备、移动电话等用户端。

Suitable for cellular phones audio,MP3 players, Digital cameras, Portable devices, mobile telephone and other users.

**内部等效电路 / Equivalent Circuit****引脚排列 / Pinning****印章代码 / Marking**

见印章说明。

See Marking Instructions.



## 极限参数 / Absolute Maximum Ratings

| 参数<br>Parameter                                 | 符号<br>Symbol | 数值<br>Rating | 单位<br>Unit  |
|-------------------------------------------------|--------------|--------------|-------------|
| Peak Pulse Power( $t_p = 8/20\mu s$ )           | $P_{PK}$     | 56           | W           |
| Peak Pulse Current( $t_p = 8/20\mu s$ )         | $I_{PP}$     | 4            | A           |
| ESD according to IEC61000-4-2 air discharge     | $V_{ESD}$    | $\pm 20$     | KV          |
| ESD according to IEC61000-4-2 contact discharge |              | $\pm 20$     |             |
| Junction temperature                            | $T_J$        | 125          | $^{\circ}C$ |
| Storage Temperature                             | $T_{STG}$    | -55~+150     | $^{\circ}C$ |

电性能参数 / Electrical Characteristics( $T_a=25^{\circ}C$ )

## Definitions of electrical characteristics

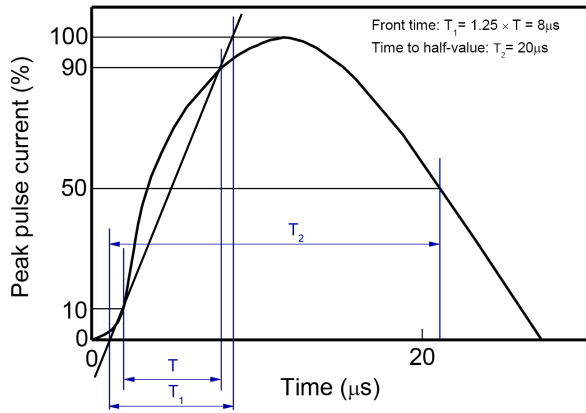
| 参数<br>Parameter                         | 符号<br>Symbol | 测试条件<br>Test Conditions             | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit |
|-----------------------------------------|--------------|-------------------------------------|------------|------------|------------|------------|
| Reverse maximum working voltage         | $V_{RWM}$    |                                     |            |            | 5.0        | V          |
| Reverse leakage current                 | $I_R$        | $V_{RWM} = 5.0V$                    |            |            | 100        | nA         |
| Reverse breakdown voltage <sup>1)</sup> | $V_{BR}$     | $I_T=1mA$                           | 6.0        |            |            | V          |
| Clamping voltage <sup>2)</sup>          | $V_{CL}$     | $I_{PP} = 1A \quad t_p = 8/20\mu s$ |            |            | 14         | V          |
|                                         |              | $I_{PP} = 4A \quad t_p = 8/20\mu s$ |            |            | 22         | V          |
| Junction Capacitance                    | $C_J$        | $V_R = 0V \quad f = 1MHz$           |            | 0.20       | 0.40       | pF         |

Notes:

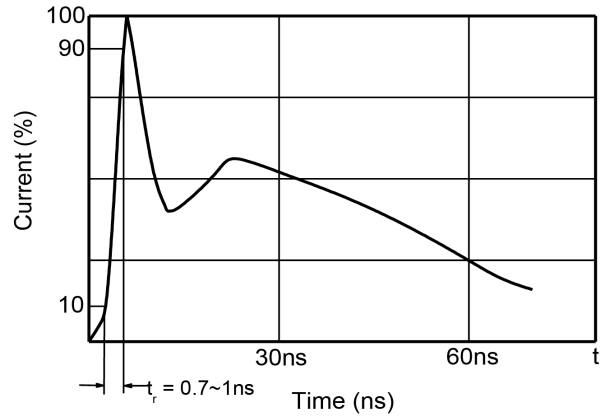
1)  $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of  $25^{\circ}C$ .

2) Non-repetitive current pulse, according to IEC61000-4-5.

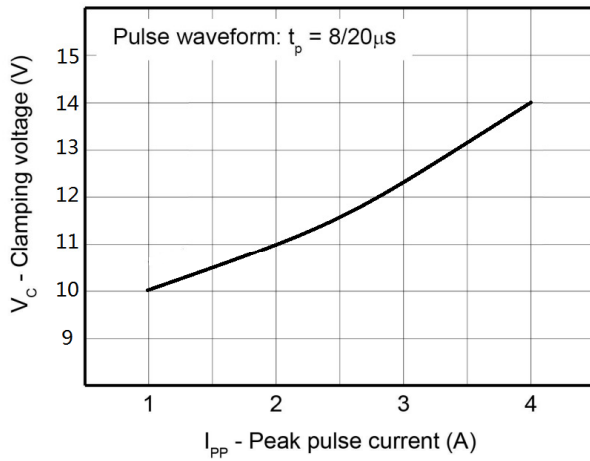
## 电参数曲线图 / Electrical Characteristic Curve( $T_a=25^\circ\text{C}$ )



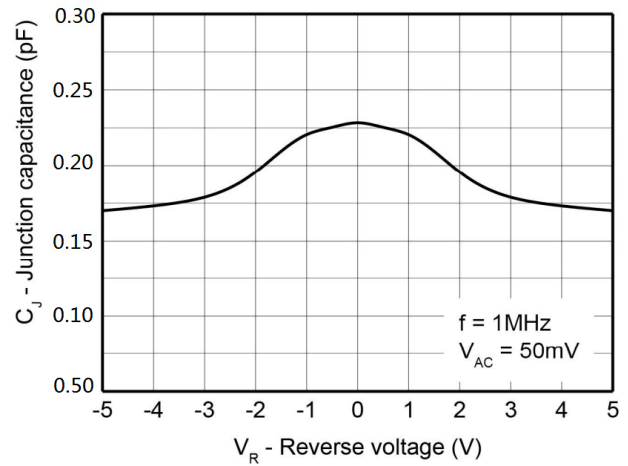
8/20 $\mu\text{s}$  waveform per IEC61000-4-5



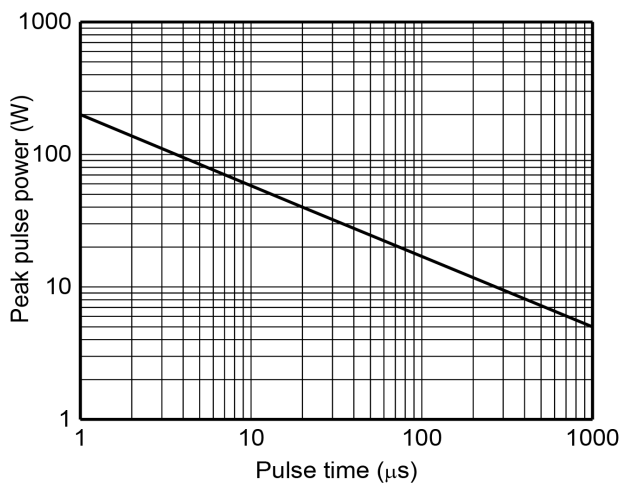
Contact discharge current waveform per IEC61000-4-2



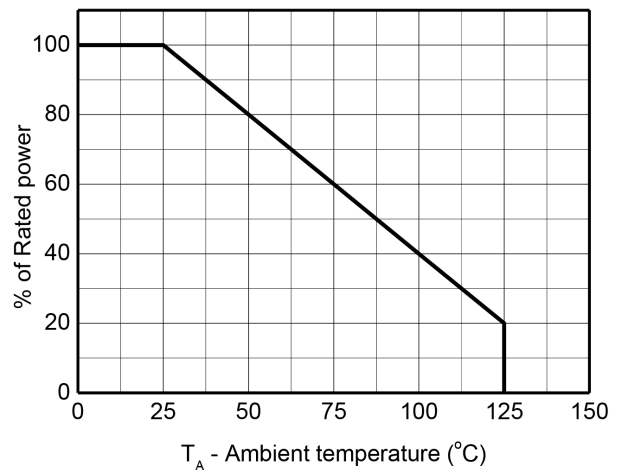
Clamping voltage vs. Peak pulse current



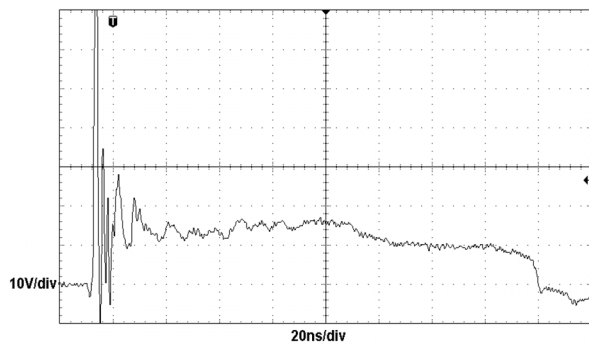
Capacitance vs. Reverse voltage



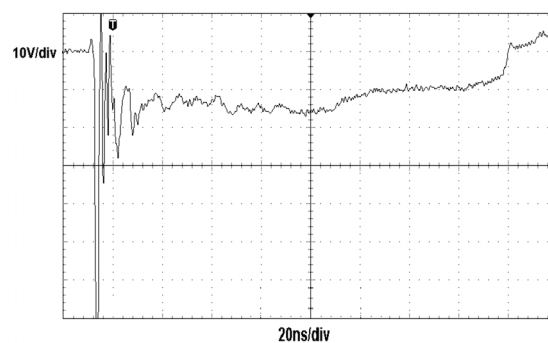
Non-repetitive peak pulse power vs. Pulse time



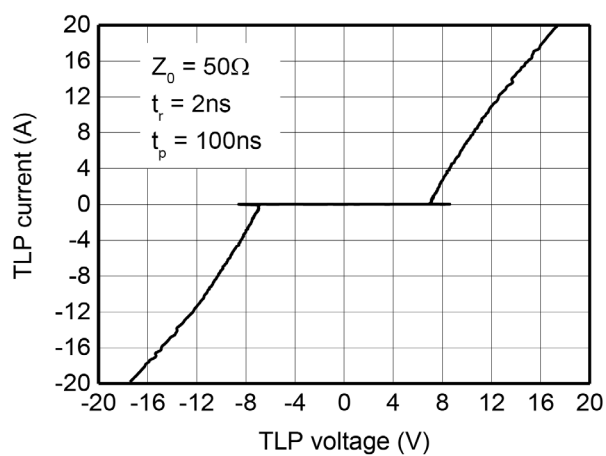
Power derating vs. Ambient temperature

电参数曲线图 / Electrical Characteristic Curve( $T_a=25^{\circ}\text{C}$ )

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

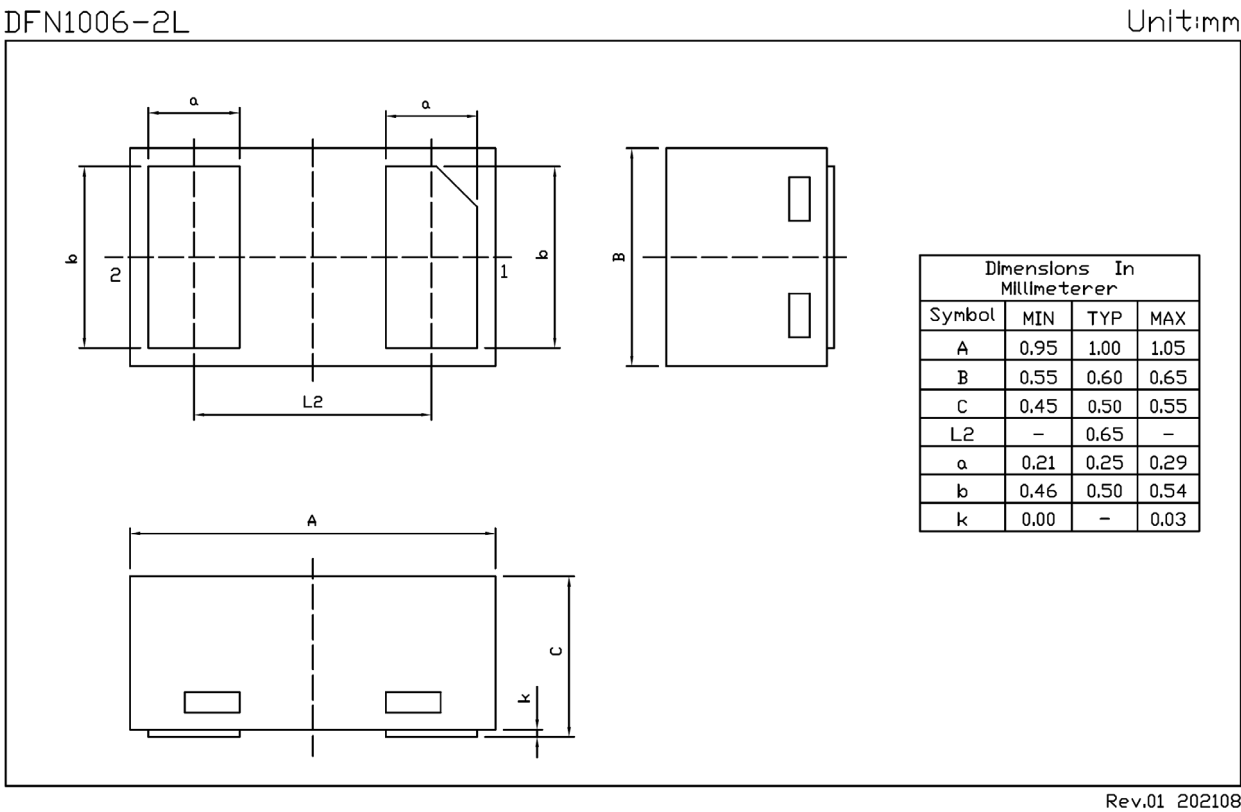


ESD clamping  
(-8kV contact discharge per IEC61000-4-2)

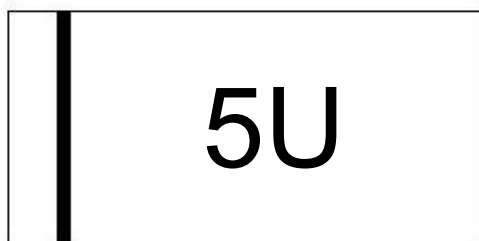


TLP Measurement

外形尺寸图 / Package Dimensions



**印章说明 / Marking Instructions**



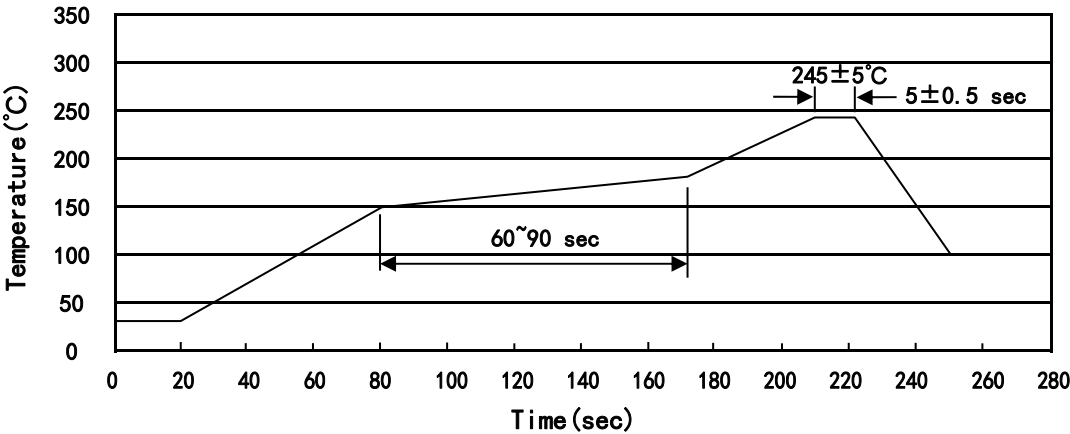
说明：

5U：为型号代码

Note：

5U：Product Type Code

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 |
| DFN1006-2L           | 10,000             | 10                      | 100,000                | 6                            | 600,000                | 7" ×8                                   | 180×120×180 | 390×385×205 |

使用说明 / Notices