

# BRES3V3L1B2ZP

Rev.E Dec.-2024

## 描述 / Descriptions

DFN1006-2L 塑封封装 ESD 保护二极管。  
DFN1006-2L Plastic Package 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 30KV 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 > 30 kV per Human Body Model, IEC61000-4-2 Level 4 ESD Protection, HF Product.

## 用途 / Applications

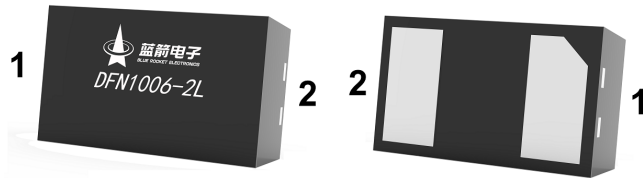
适用于手机音频、MP3 播放器、数码相机、便携式设备、移动电话等用户端。

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 Parameter	符号 Symbol	数值 Rating	单位 Unit
Peak pulse power ( $t_p = 8/20\mu s$ )	$P_K$	69	W
Peak pulse current ( $t_p = 8/20\mu s$ )	$I_{PP}$	5.5	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	$T_J$	150	$^{\circ}C$
Storage temperature	$T_{STG}$	-55~+150	$^{\circ}C$

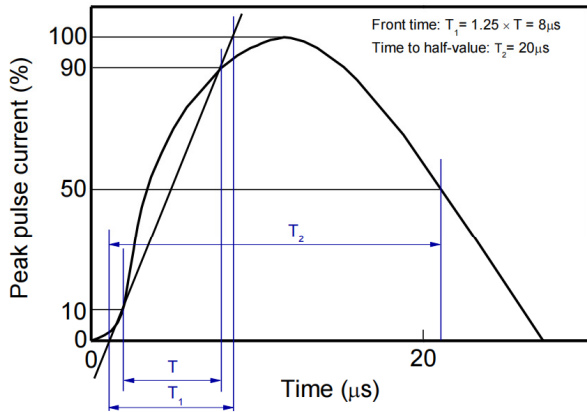
**电性能参数 / Electrical Characteristics( $T_a=25^{\circ}C$ )**

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Reverse maximum working voltage	$V_{RWM}$				3.3	V
Reverse leakage current	$I_R$	$V_{RWM} = \pm 3.3V$			$\pm 0.1$	$\mu A$
Reverse breakdown voltage <sup>1)</sup>	$V_{BR}$	$I_T = 1mA$	5.0		6.8	V
Clamping voltage <sup>2)</sup>	$V_C$	$I_{PP} = 1A$ $t_p = 8/20\mu s$			9.8	V
		$I_{PP} = 5.5A$ $t_p = 8/20\mu s$			12.5	V
Junction capacitance	$C_J$	$V_R = 0V$ $f = 1MHz$			15	pF

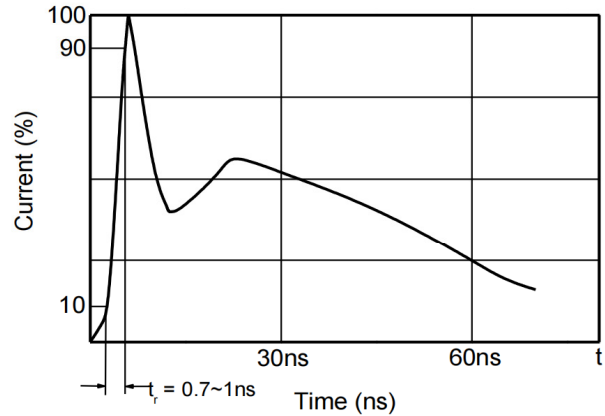
Notes:

- $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of  $25^{\circ}C$ .
- Non-repetitive current pulse, according to IEC61000-4-5.

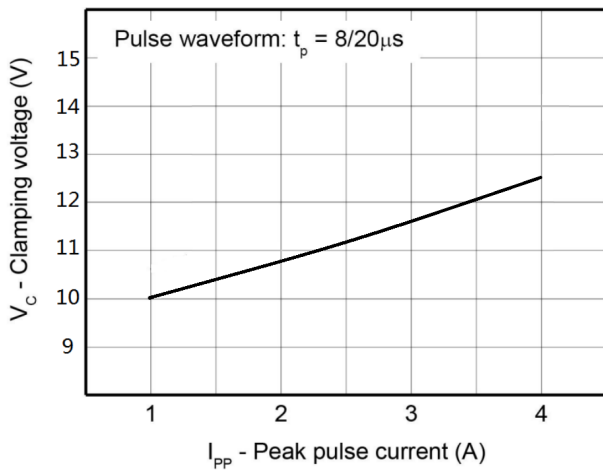
**电参数曲线图 / Electrical Characteristic Curve**



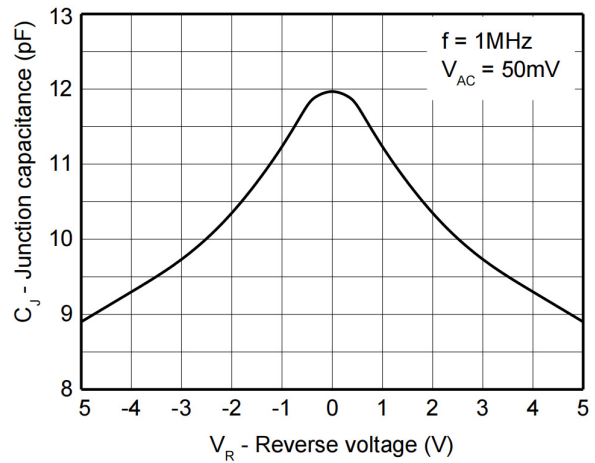
**8/20μs waveform per IEC61000-4-5**



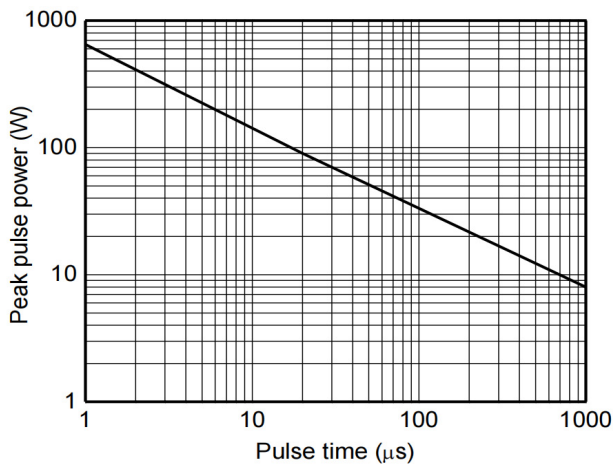
**Contact discharge current waveform per IEC61000-4-2**



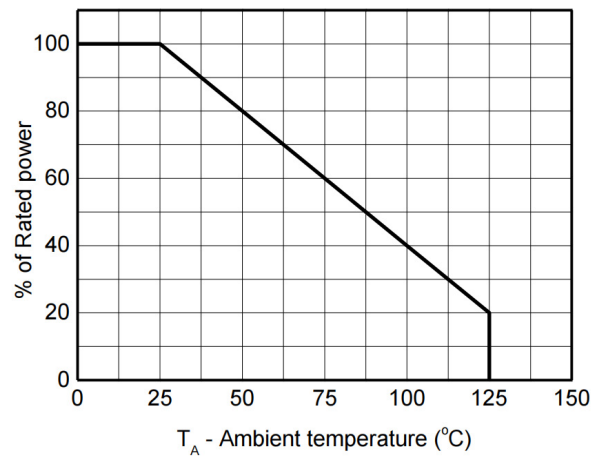
**Clamping voltage vs. Peak pulse current**



**Capacitance vs. Reverse voltage**

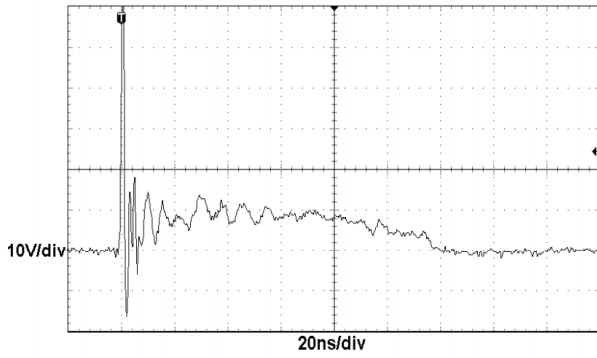


**Non-repetitive peak pulse power vs. Pulse time**

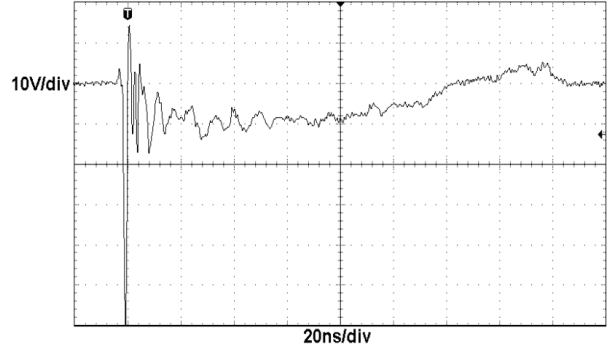


**Power derating vs. Ambient temperature**

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)

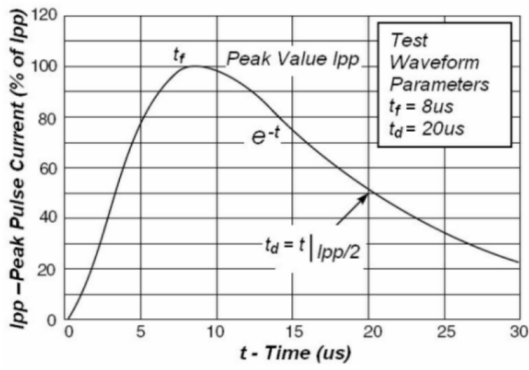


Fig3. Pulse Waveform

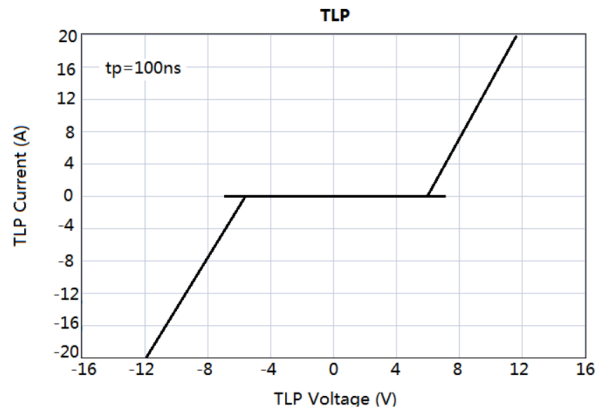
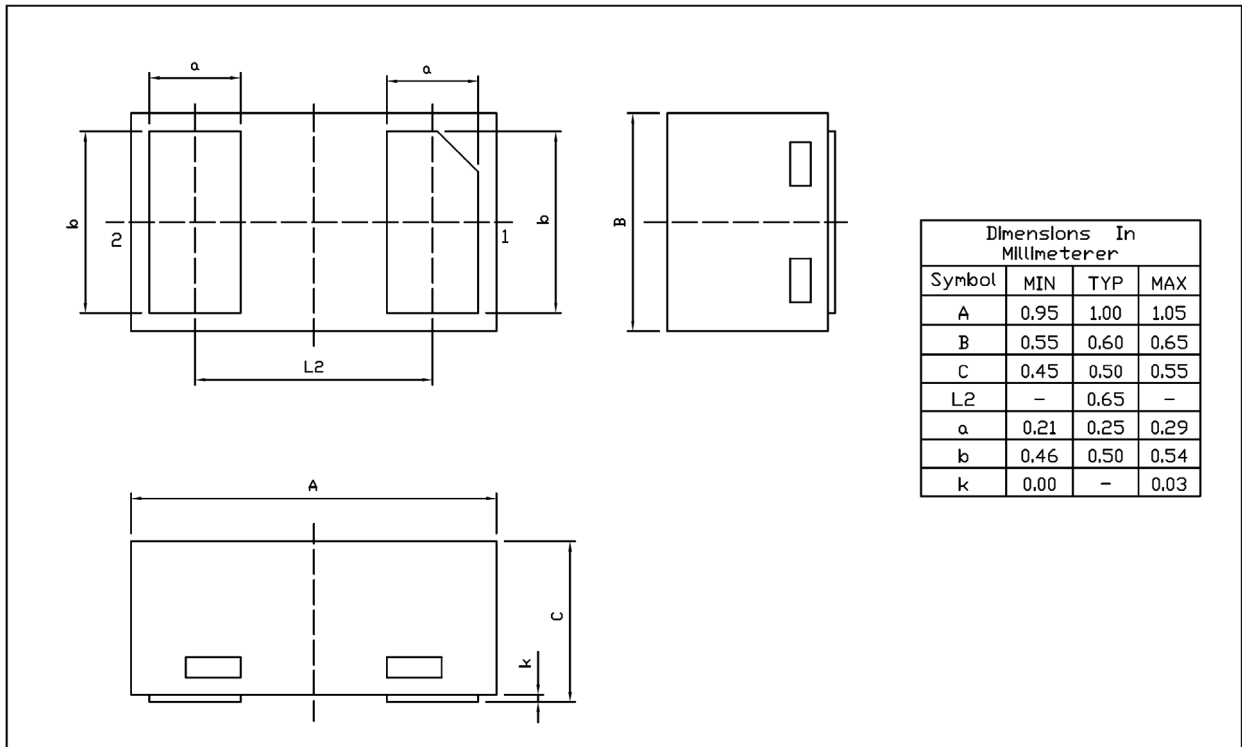


Fig4.TLP Measurement

外形尺寸图 / Package Dimensions

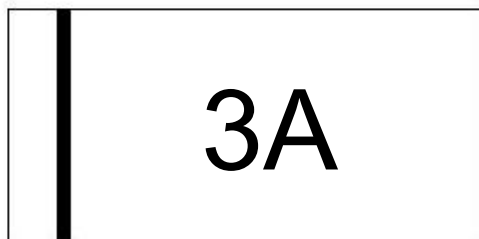
DFN1006-2L

Unit:mm



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**印章说明 / Marking Instructions**



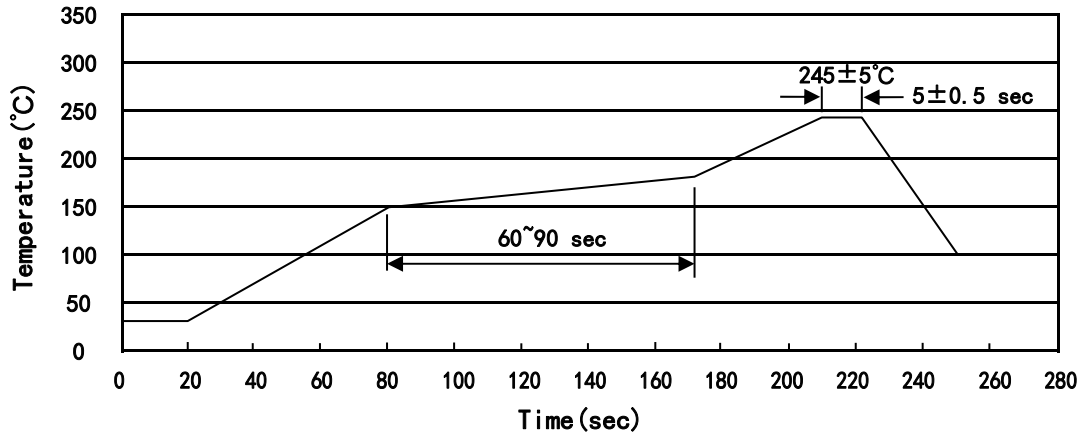
说明：

3A： 为型号代码

Note：

3A： 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 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 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**