

/ Descriptions

DFN1006-2L

ESD

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

/ FeaturesStand-off voltage: $\pm 12\text{V}$ Max.

Transient protection for each line according to

IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)

IEC61000-4-4 (EFT): 40A (5/50ns)

IEC61000-4-5(surge): 6A (8/20 μs)Ultra-low capacitance: $C_J = 5\text{pF}$ typ.

Low leakage current:

Low clamping voltage: $V_{CL} = 21.0\text{V}$ typ. @ $I_{PP} = 16\text{A}$ (TLP)

Solid-state silicon technology

HF Product

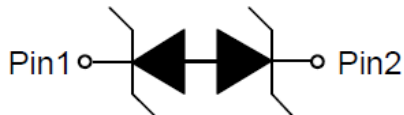
/ Applications

Computers and peripherals

Audio and video equipment

Communication systems

Portable electronics

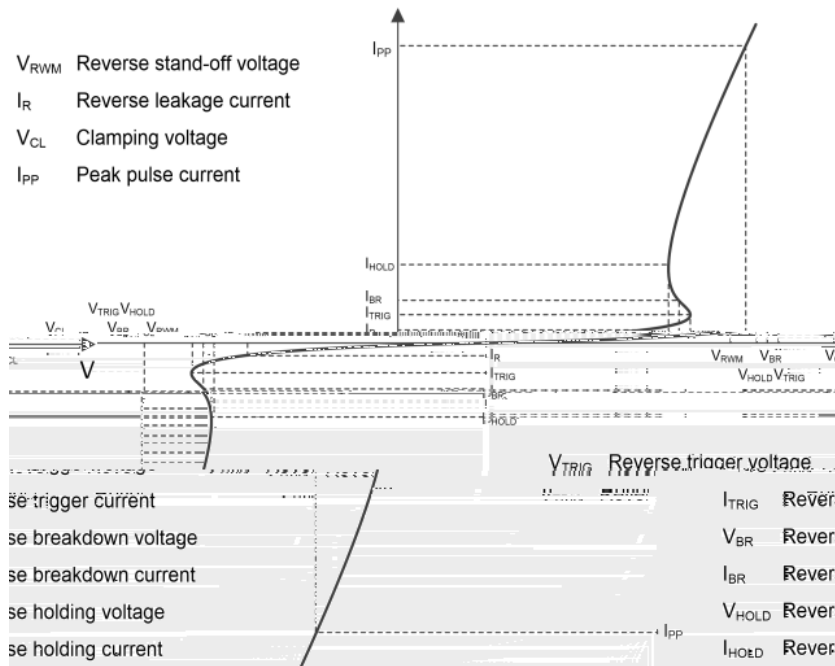
/ Equivalent Circuit**/ Pinning****/ Marking**

See Marking Instructions.

/ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Peak Pulse Power($t_p = 8/20\mu s$)	P_{PK}	120	W
Peak Pulse Current($t_p = 8/20\mu s$)	I_{PP}	6	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	KV
ESD according to IEC61000-4-2 contact discharge		± 30	
Junction temperature	T_J	125	
Operating temperature	T_{OP}	-40~85	
Lead temperature	T_L	260	
Storage Temperature	T_{STG}	-55~+150	

I Electrical Characteristics(Ta=25)



Definitions of electrical characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse maximum working voltage	V_{RWM}				12	V
Reverse leakage current	I_R	$V_{RWM} = 12V$			100	nA
Reverse breakdown voltage	V_{BR}	$I_{BR}=1mA$	13	14		V
Reverse holding voltage	V_{HOLD}	$I_{HOLD}=50mA$	13	14		V
Clamping voltage ¹⁾	V_{CL}	$I_{PP}=16A$ $t_p=100ns$		21.0		V
Dynamic resistance ¹⁾	R_{DYN}			0.35		Ω
Clamping voltage ²⁾	V_{CL}	$V_{ESD}= 8kV$		21.0		V
Clamping voltage ³⁾	V_{CL}	$I_{PP} = 1A$ $t_p = 8/20\mu s$		19	25	V
		$I_{PP} = 6A$ $t_p = 8/20\mu s$		28.5	30	V
Junction Capacitance	C_J	$V_R = 0V$ $f = 1MHz$		9	11	pF
	C_J	$V_R = 2.5V$ $f = 1MHz$		8	10	pF

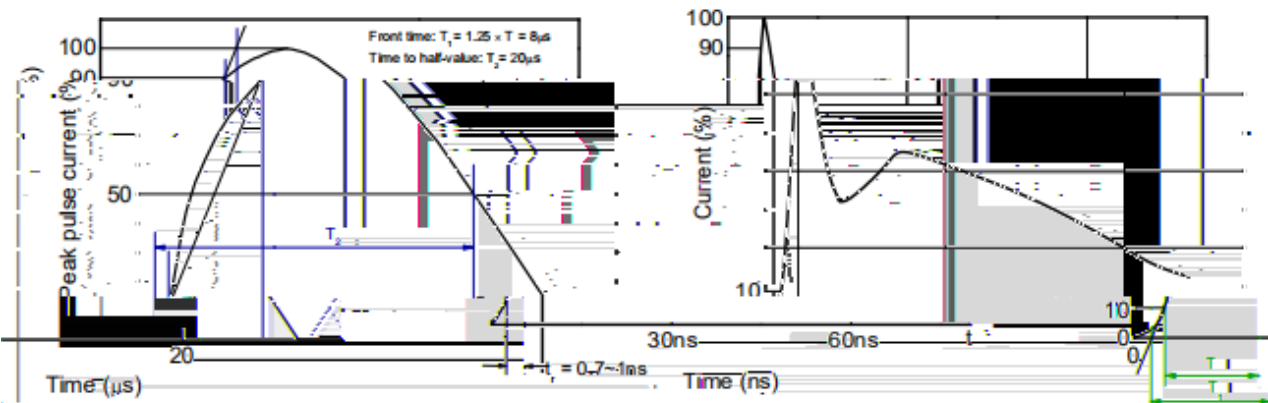
Notes:

1) TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

2) Contact discharge mode, according to IEC61000-4-2.

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

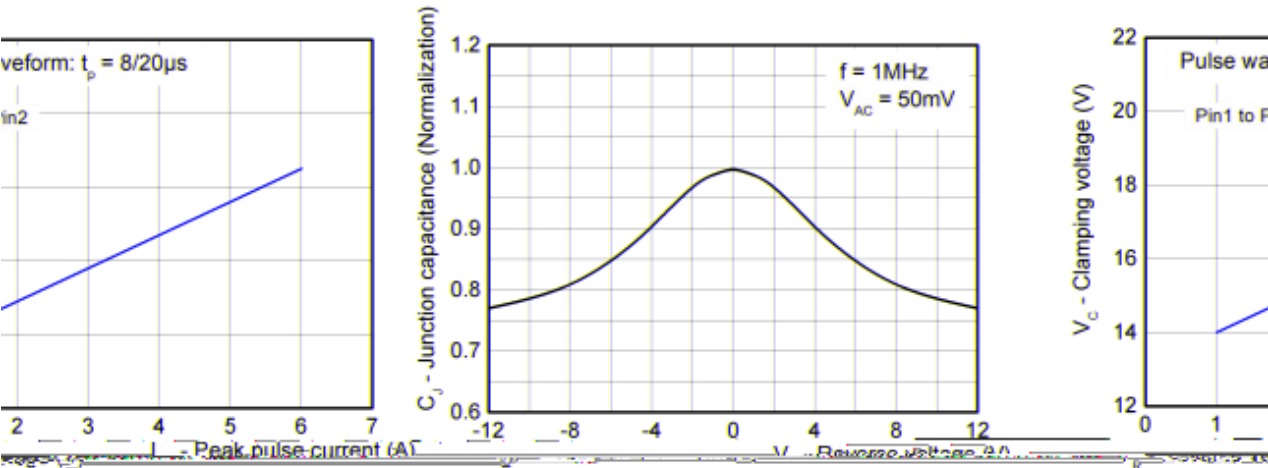
/ Electrical Characteristic Curve(Ta=25)



s waveform per IEC61000-4-5

Contact discharge current waveform per IEC61000-4-2

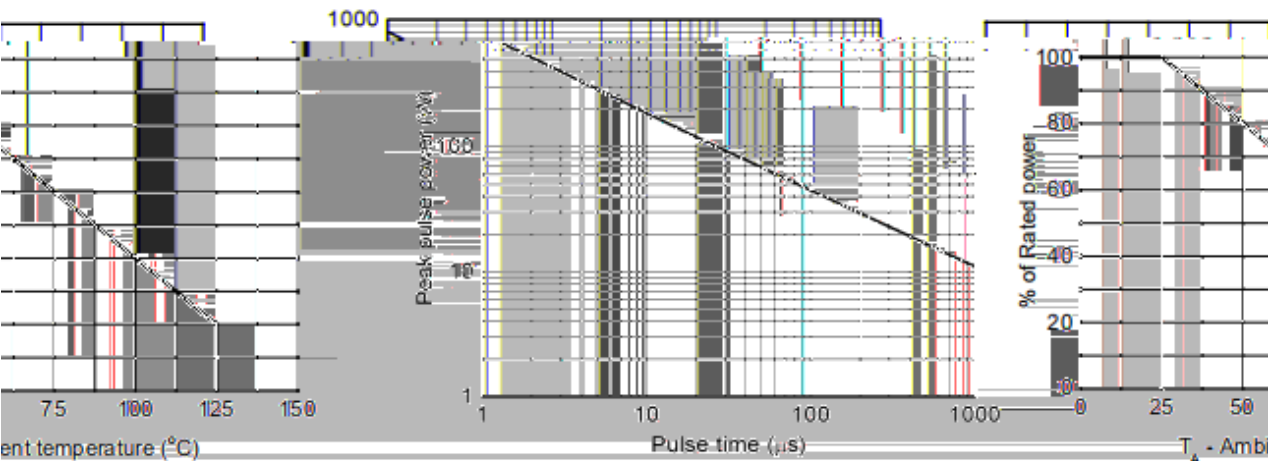
8/20μs



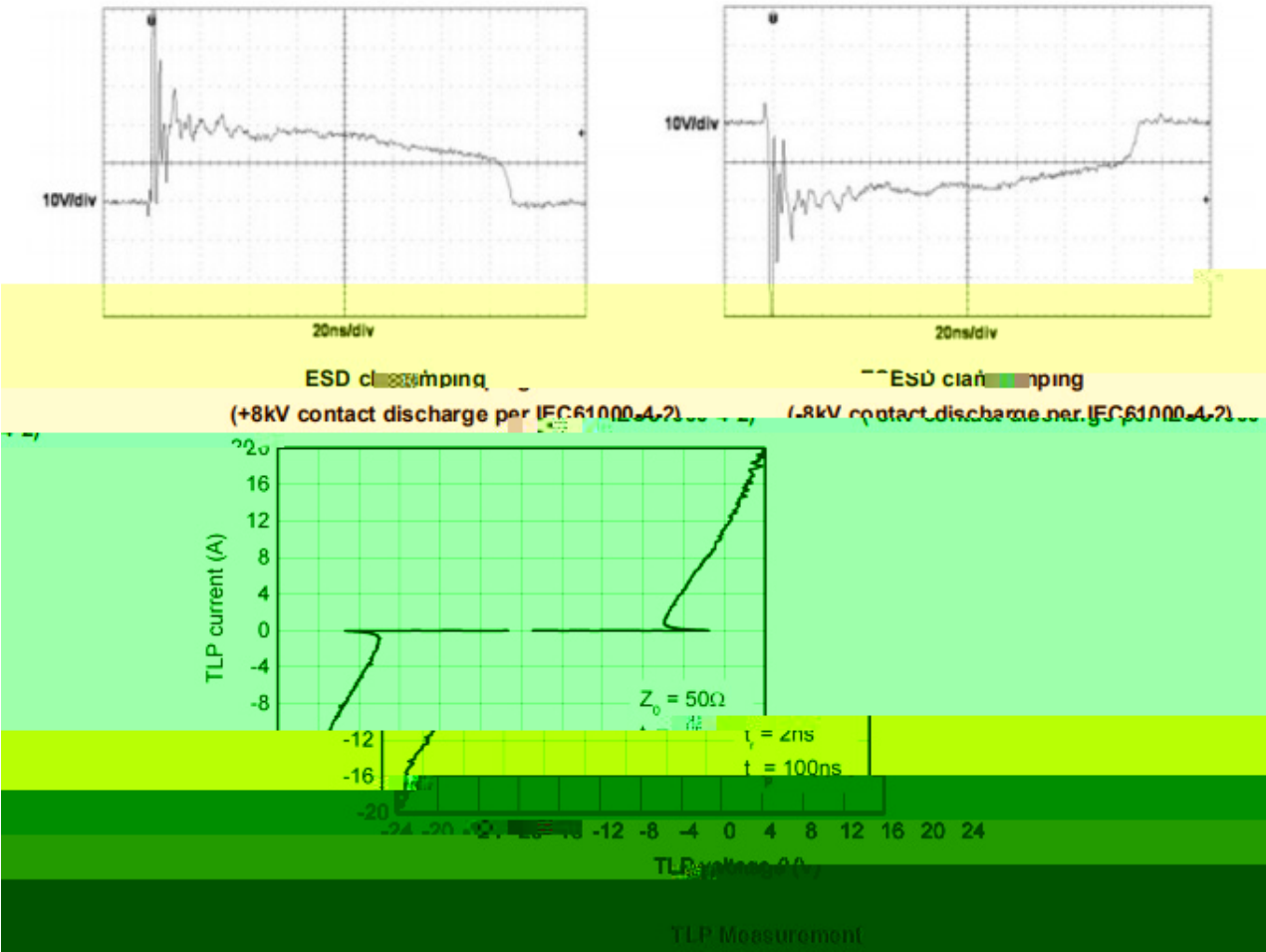
Reverse voltage

Clamping voltage vs. Peak pulse current

Capacitance vs. I



/ Electrical Characteristic Curve(Ta=25)



BRES12VP1B2ZP

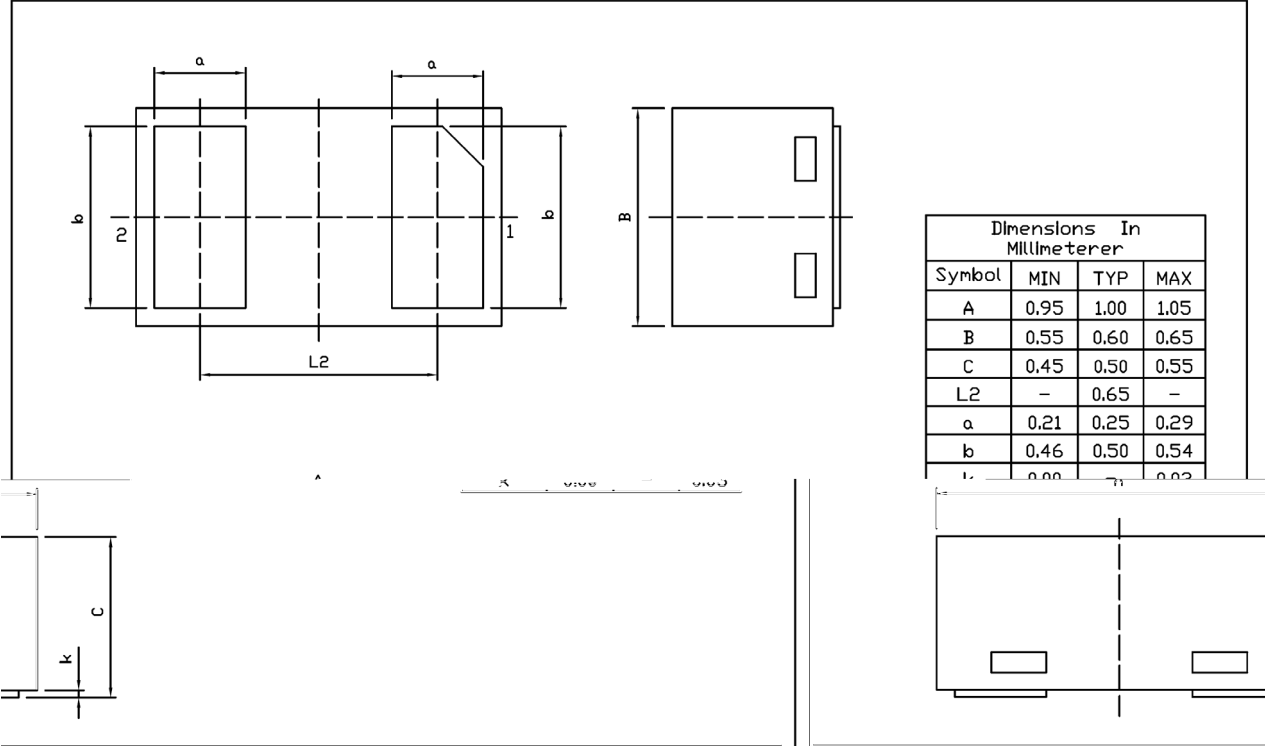
Rev.B Jul.-2024

DATA SHEET

/ Package Dimensions

DFN1006-2L

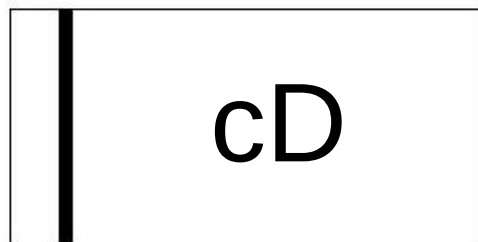
Unit:mm



Rev.01 202108



/ Marking Instructions

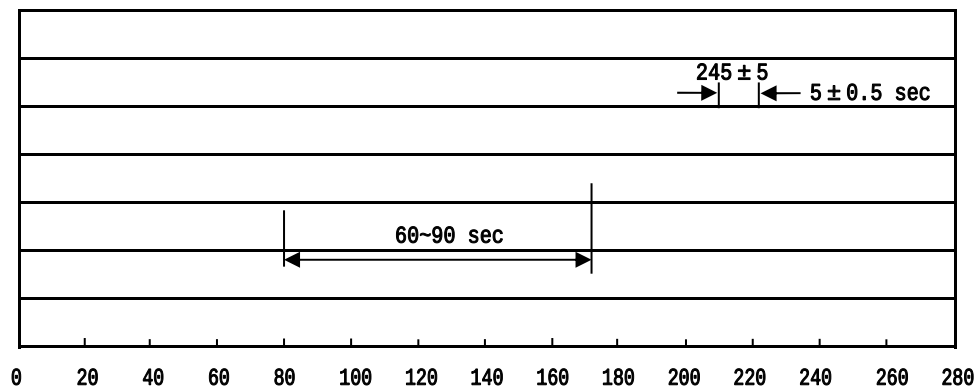


cD

Note

cD Product Type Code

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1

150 180

60 90sec;

1.Preheating:150~180 , Time:60~90sec.
- 2

245±5

5±0.5sec;

2.Peak Temp.:245±5 , Duration:5±0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm³)		
	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

/ Notices