

Description

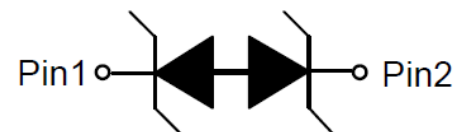
The XE2F5VB is a bi-directional ESD protection diode designed to protect sensitive electronic components which are connected to low speed data lines and control lines from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. The XE2F5VB may be used to provide ESD protection up to $\pm 30\text{kV}$ (contact and air discharge) according to IEC61000-4-2, and withstand peak pulse current up to 8A (8/20 μs) according to IEC61000-4-5.

The XE2F5VB is available in DFN1006-2L package. Standard products are Pb-free and Halogen-free.

<http://www.xihangsemi.com>



DFN1006-2L (Bottom View)



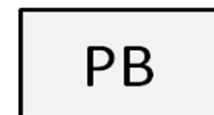
Circuit Diagram

Features

- ◆ Working voltage: 5V
- ◆ DFN1006-2L Package
- ◆ Transient protection for data lines to IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- ◆ IEC 61000-4-5 (Surge) 8A (8/20 μs)
- ◆ Low leakage current
- ◆ Low clamping voltage
- ◆ Solid-state silicon-avalanche technology

Applications

- ◆ Personal digital assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Cell phone Handsets and Accessories
- ◆ Portable Electronics
- ◆ Peripherals



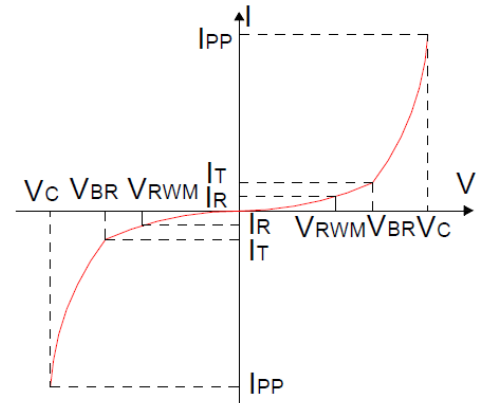
Marking (Top View)

Order Information

Device	Package	Shipping
XE2F5VB	DFN1006-2L	10000/Tape&Reel

Definitions of electrical characteristics

Symbol	Parameter
V_{RWM}	Reverse Stand-off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Reverse Breakdown Voltage @ I_T
I_R	Reverse Breakdown Current
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu S$)	P_{PK}	80	W
Peak Pulse Current ($t_p = 8/20\mu S$)	I_{pp}	8	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	kV
ESD according to IEC61000-4-2 contact discharge		± 30	kV
Lead Soldering Temperature	T_L	260 (10 sec)	$^{\circ}C$
Operating Temperature	T_{OP}	-55 to +125	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

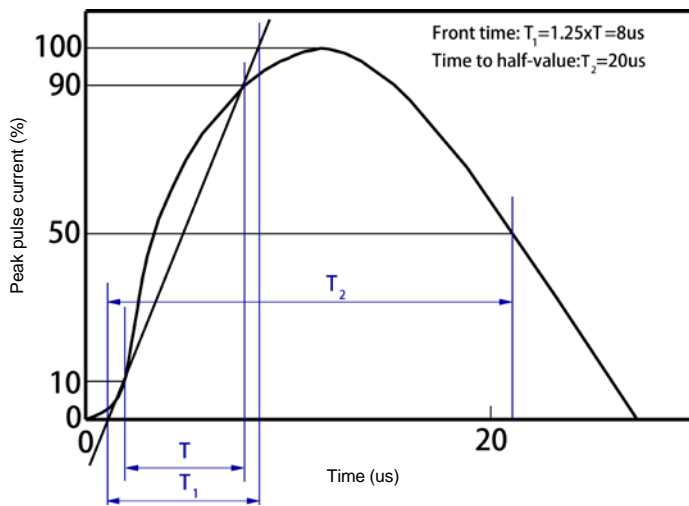
Electrical Characteristics (Ta=25 $^{\circ}C$, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				± 5	V
Reverse Leakage Current	I_R	$V_{RWM} = \pm 5V$			1	μA
Reverse Breakdown Voltage	V_{BR}	$I_T = 1mA$	5.7	5.9	6.5	V
Clamping Voltage ¹⁾	V_{CL}	$I_{PP} = 5A \quad t_p = 8/20\mu s$		8.5	9.5	V
		$I_{PP} = 8A \quad t_p = 8/20\mu s$		10	12	V
Junction Capacitance	C_j	$V_R = 0V \quad f = 1MHz$		14		pF

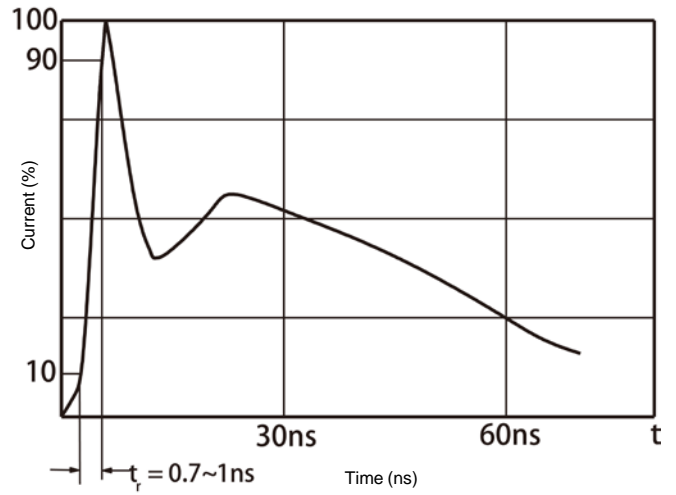
Notes:

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

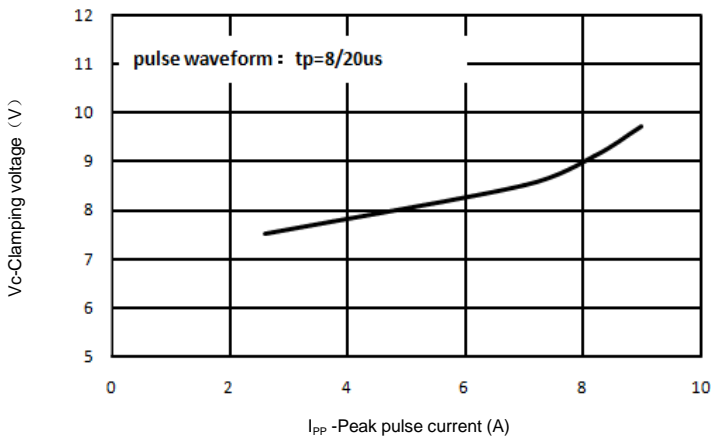
Typical Characteristics (Ta=25°C, unless otherwise noted)



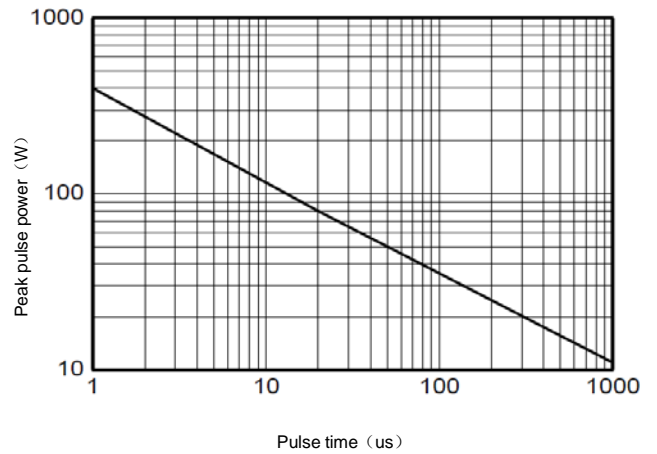
8/20 us waveform per IEC61000-4-5



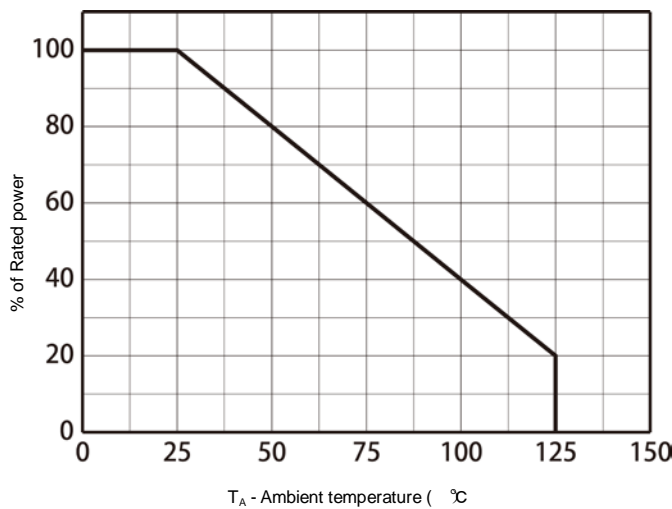
Contact discharge current waveform per IEC61000-4-2



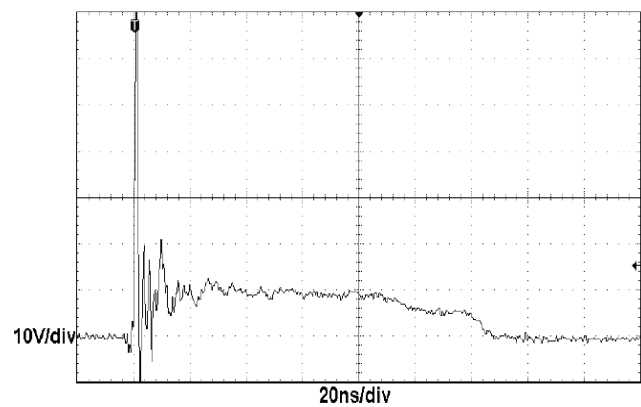
Clamping voltage vs. Peak pulse current



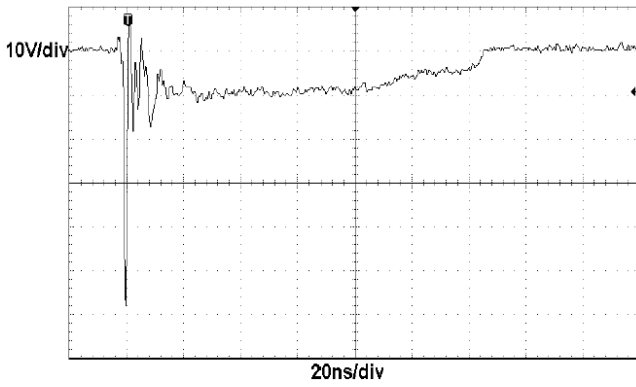
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

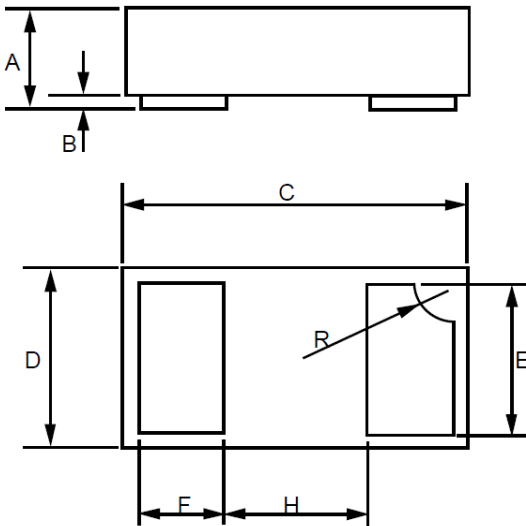


ESD Clamping(+8kV Contact Discharge)



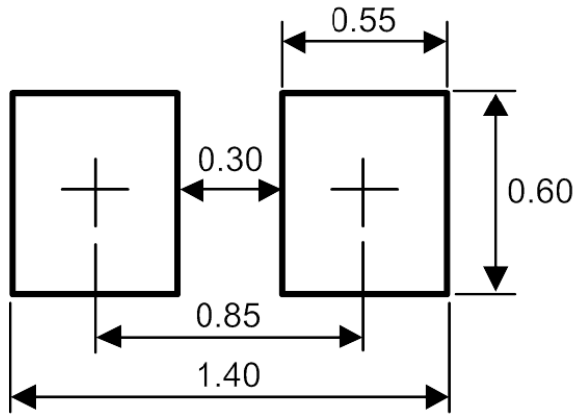
ESD Clamping(-8kV Contact Discharge)

Package Outline Dimensions (DFN1006-2L)



Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.018	0.020	0.46	0.51
B	0.000	0.002	0	0.05
C	0.037	0.041	0.95	1.05
D	0.022	0.025	0.55	0.65
E	0.017	0.021	0.45	0.55
F	0.008	0.012	0.20	0.30
H	0.015Typ.		0.40Typ	
R	0.001	0.005	0.05	0.15

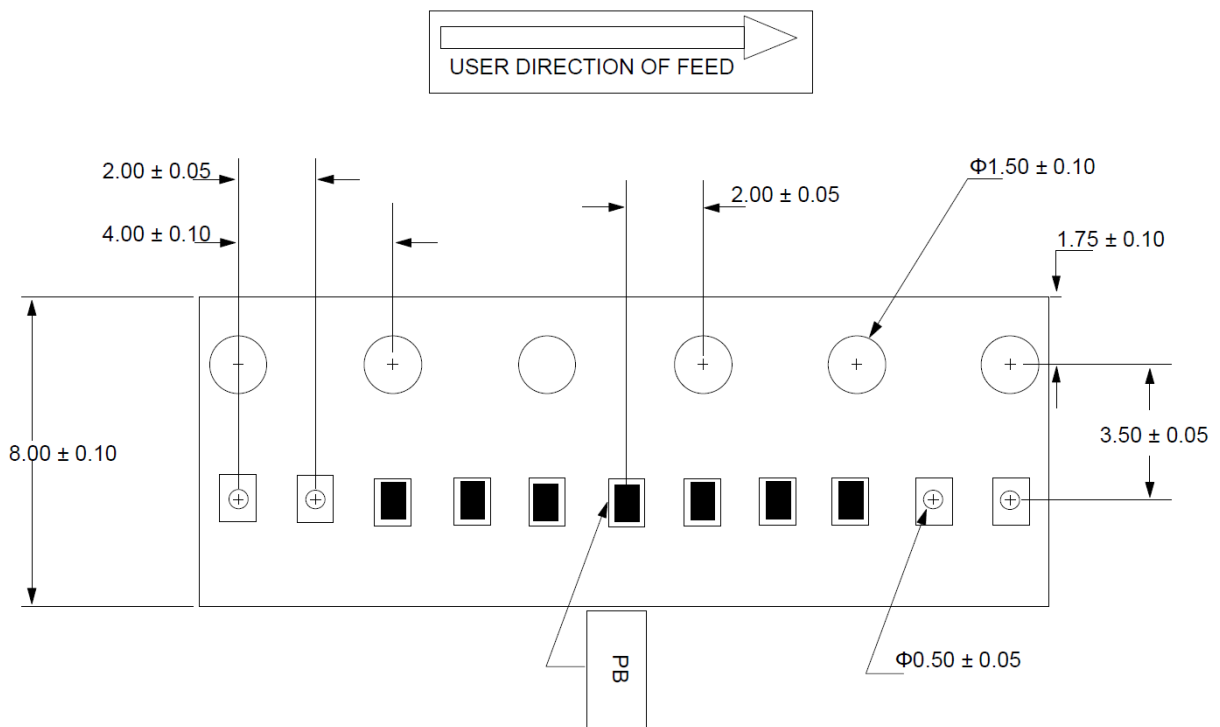
Recommend Land Pattern (Unit: mm)



Note:

This recommended land pattern is for reference purpose only.

Load with information



Unit: mm