

Description

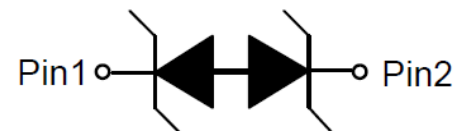
The XE2X3V3B is a bi-directional ESD protection diode designed to protect sensitive electronic components which are connected to low speed data lines and control lines from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. The XE2X3V3B may be used to 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 9A (8/20 μs) according to IEC61000-4-5.

The XE2X3V3B is available in DFN1006-2L package. Standard products are Pb-free and Halogen-free.

<http://www.xihangsemi.com>



DFN0603-2L (Bottom View)



Circuit Diagram

Features

- ◆ Working voltage: 3.3V
- ◆ 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) 10A (8/20 μs)
- ◆ Low leakage current
- ◆ Low clamping voltage
- ◆ Solid-state silicon-avalanche technology



Marking (Top View)

Order Information

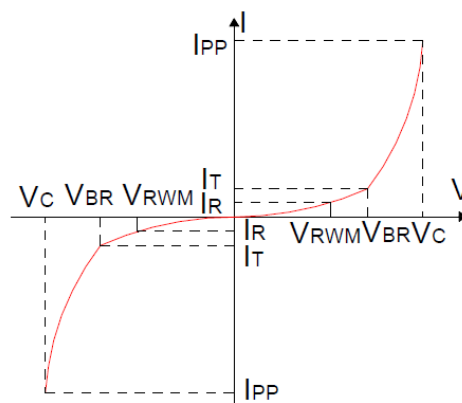
Device	Package	Shipping
XE2X3V3B	DFN0603-2L	10000/Tape&Reel

Applications

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

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}	85	W
Peak Pulse Current ($t_P = 8/20\mu S$)	I_{pp}	9	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	$^{\circ}C$

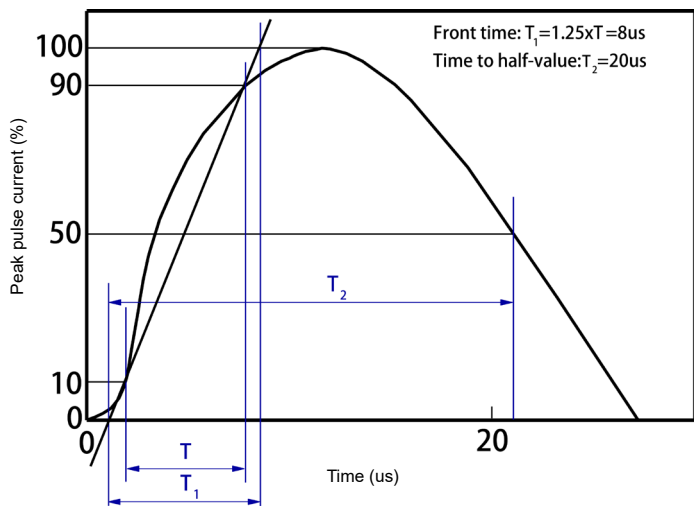
Electrical Characteristics ($T_a=25^{\circ}C$, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				± 3.3	V
Reverse Leakage Current	I_R	$V_{RWM} = \pm 3.3V$			100	nA
Reverse Breakdown Voltage	V_{BR}	$I_T = 1mA$	3.7	4.1	5	V
Clamping Voltage ¹⁾	V_{CL}	$I_{PP}=5A \quad t_P = 8/20\mu s$		6	7	V
		$I_{PP}=9A \quad t_P = 8/20\mu s$		8.5	9.5	V
Junction Capacitance	C_j	$V_R=0V \quad f = 1MHz$		13	15	pF

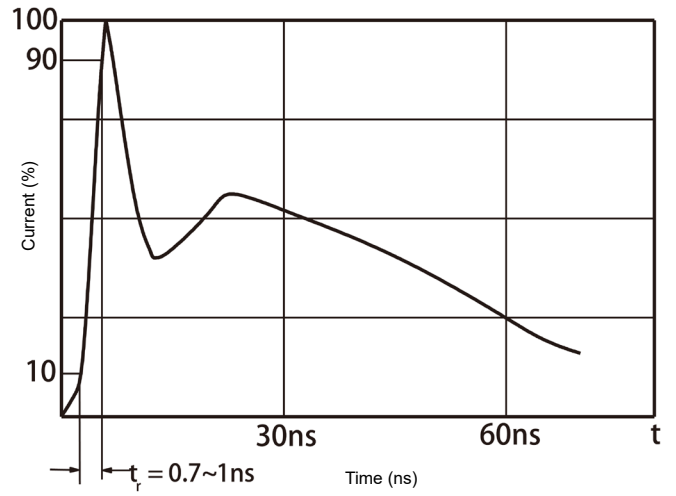
Notes:

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

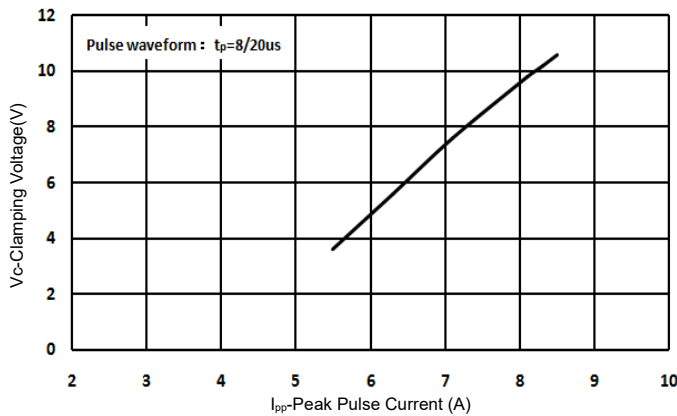
Typical Characteristics (Ta=25℃, unless otherwise noted)



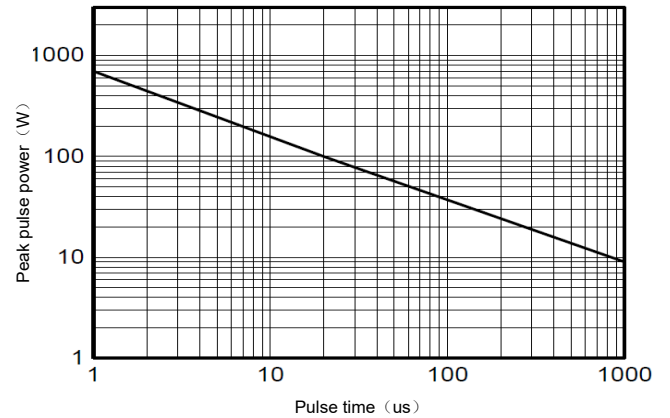
8/20 us waveform per IEC61000-4-5



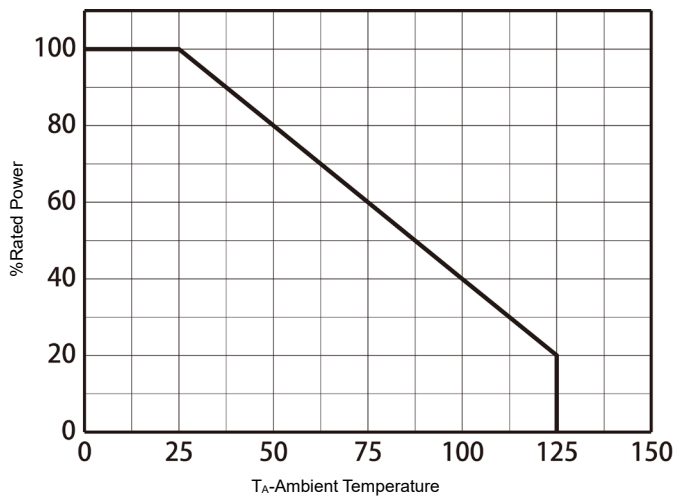
Contact discharge current waveform per IEC61000-4-2



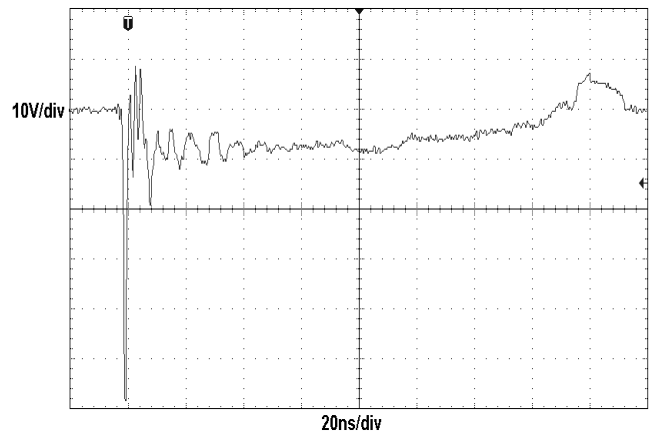
Clamping voltage vs. Peak pulse current



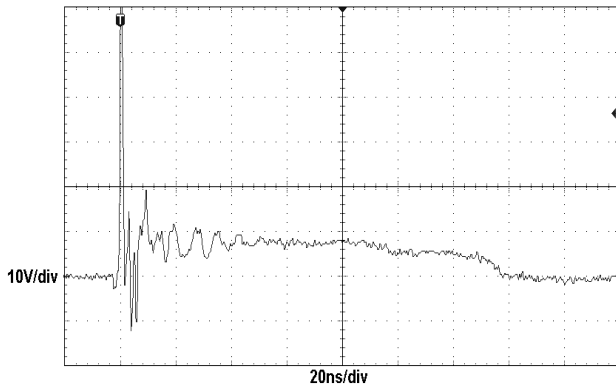
Non-repetitive peak pulse power vs. Pulse time



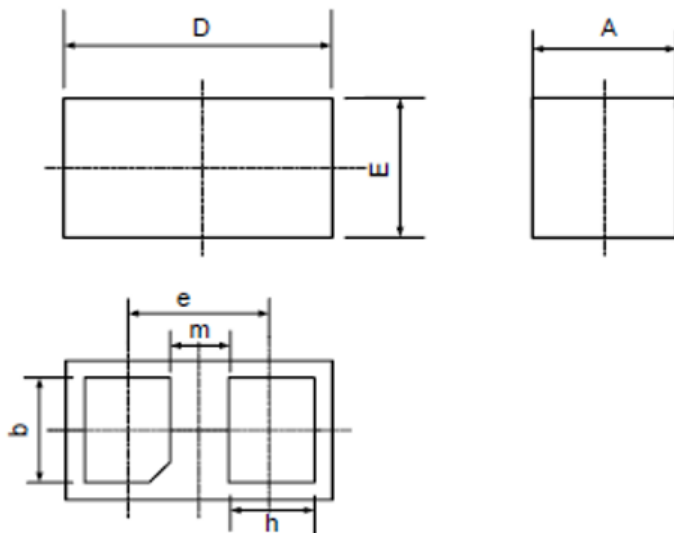
Power derating vs. Ambient temperature



ESD Clamping(+8kV Contact Discharge)

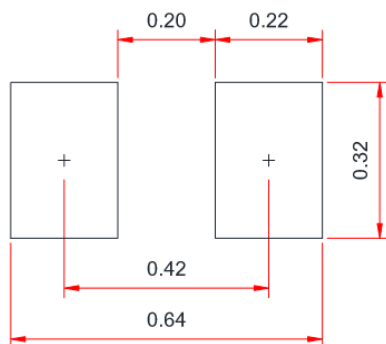

ESD Clamping(-8kV Contact Discharge)

Package Outline Dimensions (DFN0603-2L)



Symbol	Millimeter	
	Min.	Max.
A	0.28	0.32
D	0.55	0.65
E	0.25	0.35
b	0.20	0.30
e	0.350	
m	0.165	
h	0.14	0.24

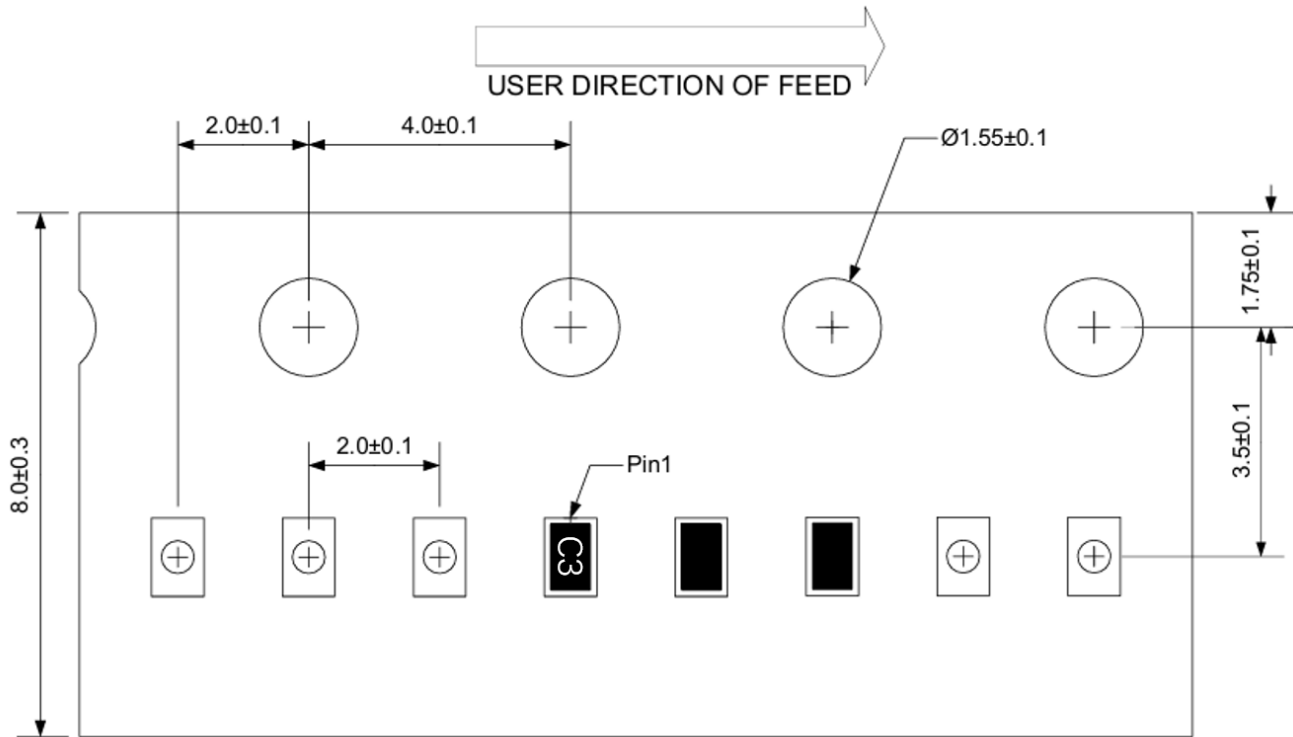
Recommend Land Pattern (Unit: mm)



Note:

This recommended land pattern is for reference purpose only.

Load With Information



Unit:mm

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