

## Description

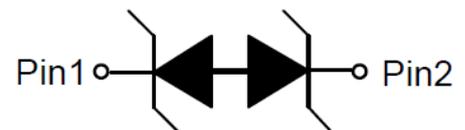
The XE2X4V5BS is a bi-directional ESD protection diode designed to protect sensitive electronic components which are connected to low speed data lines and control lines from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. The XE2X4V5BS may be used to provide ESD protection up to  $\pm 30\text{kV}$  contact discharge and  $\pm 30\text{kV}$  air discharge according to IEC61000-4-2, and withstand peak pulse current up to 6A (8/20 $\mu\text{s}$ ) according to IEC61000-4-5.

The XE2X4V5BS is available in DFN0603-2L package. Standard products are Pb-free and Halogen-free.

<http://www.xihangsemi.com>



## DFN0603-2L (Bottom View)



## Circuit Diagram

## Features

- ◆ Working voltage: 4.5V
- ◆ DFN0603-2L 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) 6A (8/20 $\mu\text{s}$ )
- ◆ 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



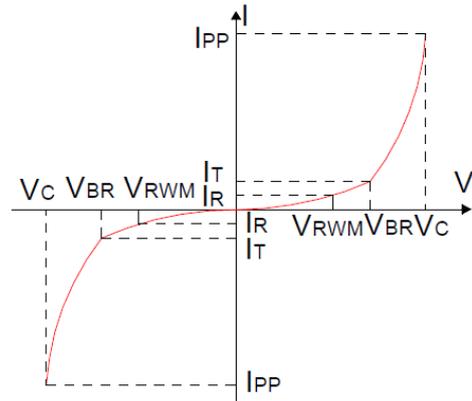
## Marking (Top View)

## Order Information

Device	Package	Shipping
XE2X4V5BS	DFN0603-2L	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 ( $t_P = 8/20\mu S$ )	$P_{PK}$	60	W
Peak Pulse Current ( $t_P = 8/20\mu S$ )	$I_{pp}$	66	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 30$	kV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	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	$^{\circ}C$

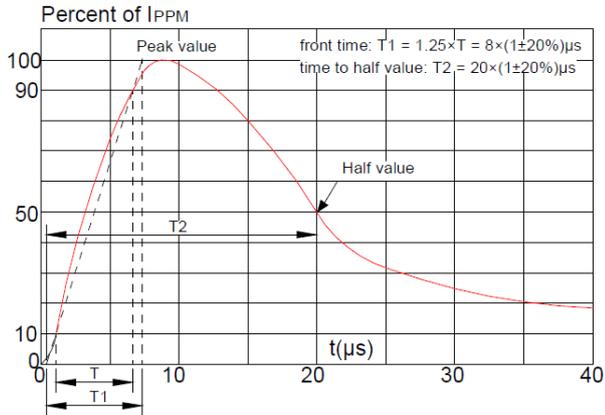
## Electrical Characteristics ( $T_a=25^{\circ}C$ , unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				$\pm 4.5$	V
Reverse Leakage Current	$I_R$	$V_{RWM} = \pm 4.5V$			100	nA
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	4.8			V
Clamping Voltage <sup>1)</sup>	$V_{CL}$	$I_{PP}=2A$ $t_P = 8/20\mu s$		7	8.5	V
		$I_{PP}=6A$ $t_P = 8/20\mu s$		9.5	11	V
Junction Capacitance	$C_j$	$V_R=0V$ $f = 1MHz$		12		pF

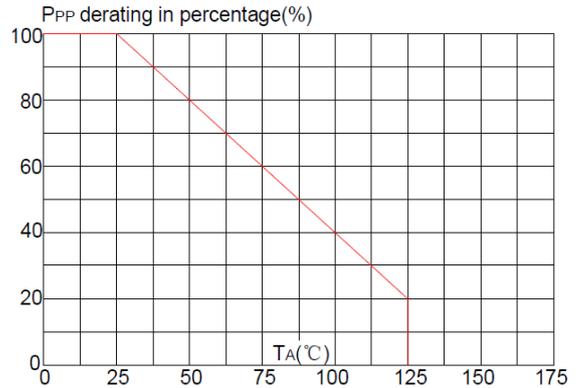
Notes:

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

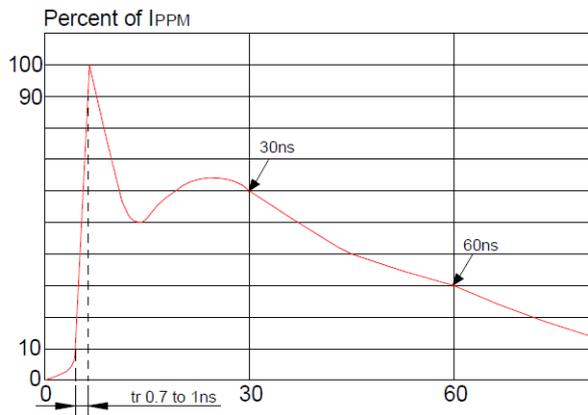
**Typical Characteristics (Ta=25°C, unless otherwise noted)**



**Pulse Waveform (8/20us)**

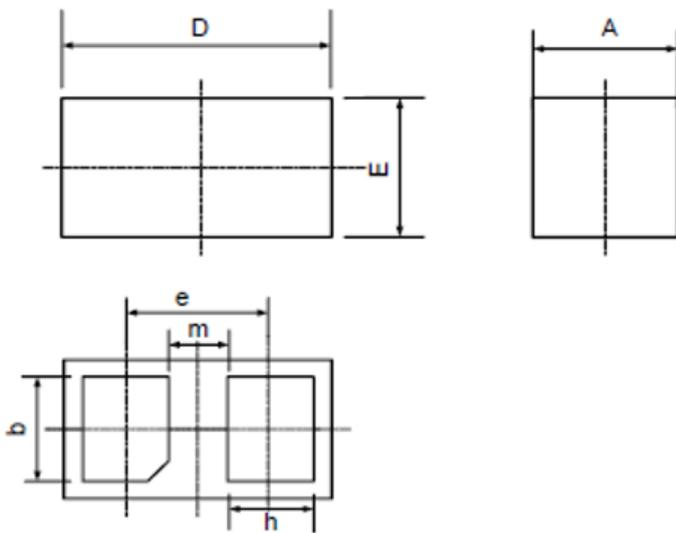


**Pulse Derating Curve**



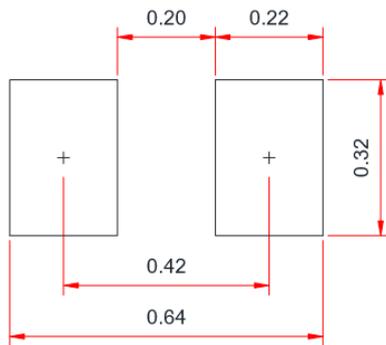
**ESD Clamping(8kV Contact Discharge )**

**Package Outline Dimensions (DFN0603-2L)**



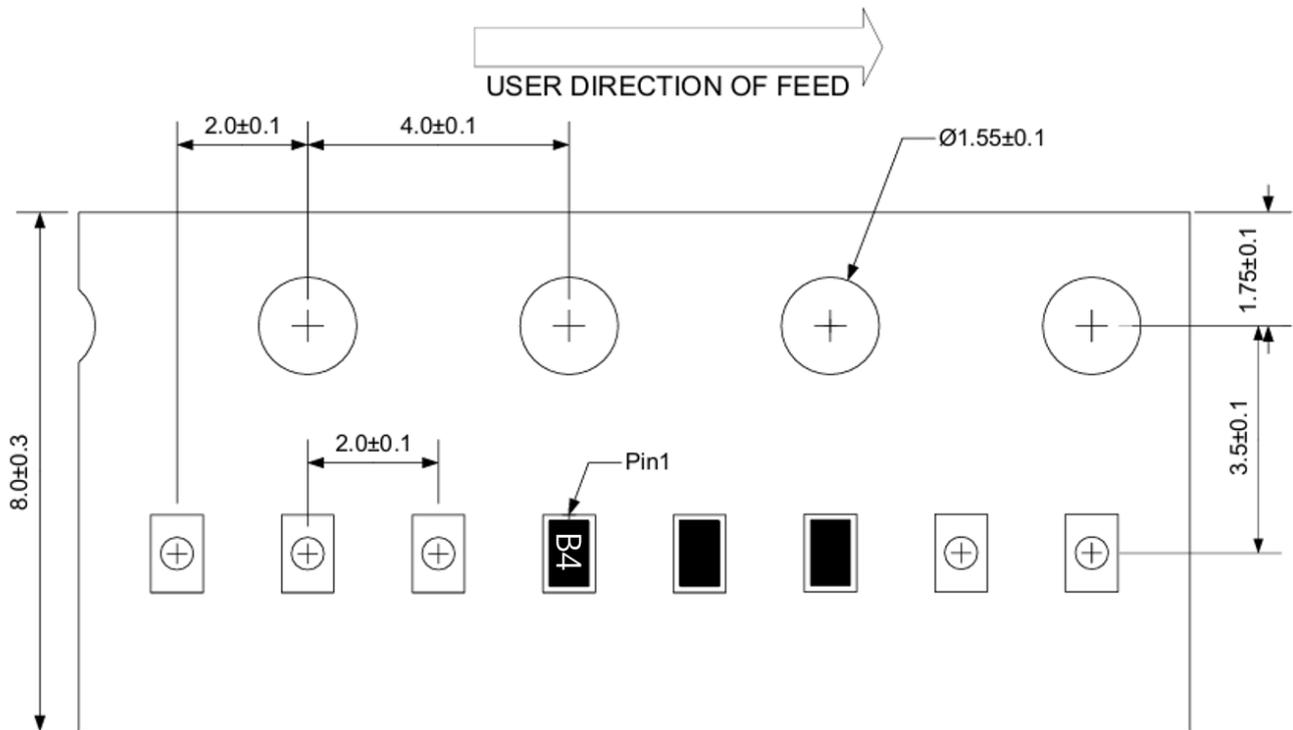
Symbol	Millimeter	
	Min.	Max.
A	0.28	0.32
D	0.55	0.65
E	0.25	0.35
b	0.20	0.30
e	0.350	
m	0.165	
h	0.14	0.24

**Recommend Land Pattern (Unit: mm)**



**Note:**

This recommended land pattern is for reference purpose only.

**Load With Information**


Unit:mm

**NOTICE**

XIHANG's products are not authorized for use as components in any life support device or systems.

XIHANG reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. XIHANG does not assume any liability arising out of the application or use of any product described herein.

**Datasheet Revision History**