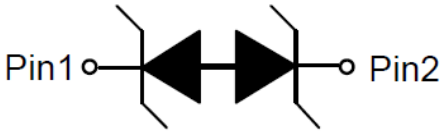
## Description

The XE2X5VB 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 XE2X5VB may be used to provide ESD protection up to ±30kV (contact and air discharge) according to IEC61000-4-2, and withstand peak pulse current up to 8A (8/20μs) according to IEC61000-4-5.

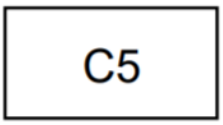
The XE2X5VB is available in DFN0603-2L package. Standard products are Pb-free and Halogen-free.

**http//:www.xihangsemi.com**

**DFN0603-2L（Bottom View）**




**Circuit Diagram**




**Marking（Top View）**

## Features

- Working voltage: 5V
- DFN0603-2L Package
- Transient protection for data lines to
  IEC 61000-4-2 (ESD) ±30kV (air),
  ±30kV (contact)
  IEC 61000-4-5 (Surge) 8A (8/20us)
  IEC61000-4-4（EFT）50A（5/50ns）
- Low leakage current
- Low clamping voltage
- Solid-state silicon-avalanche technology

## Order Information

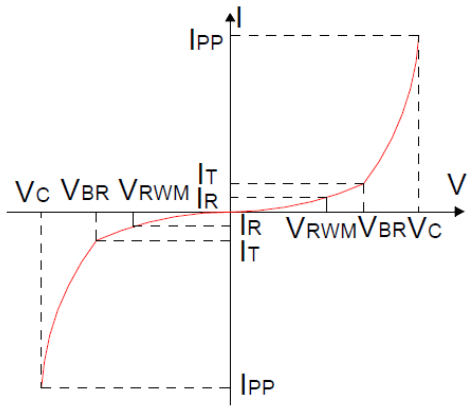
| Device | Package | Shipping |
|---|---|---|
| XE2X5VB | DFN0603-2L | 10000/Tape&Reel |

## 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 ( $t_P$ = 8/20μS ) | $P_{PK}$ | 80 | W |
| Peak Pulse Currentr ( $t_P$ = 8/20μS ) | $I_{pp}$ | 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) | ℃ |
| Operating Temperature | $T_{OP}$ | -55 to +125 | ℃ |
| Storage Temperature | $T_{STG}$ | -55 to +150 | ℃ |

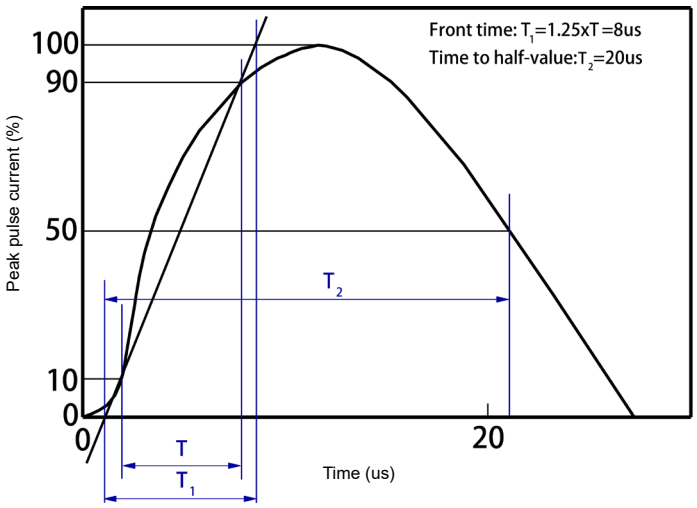
## Electrical Characteristics (Ta=25℃, unless otherwise noted)

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

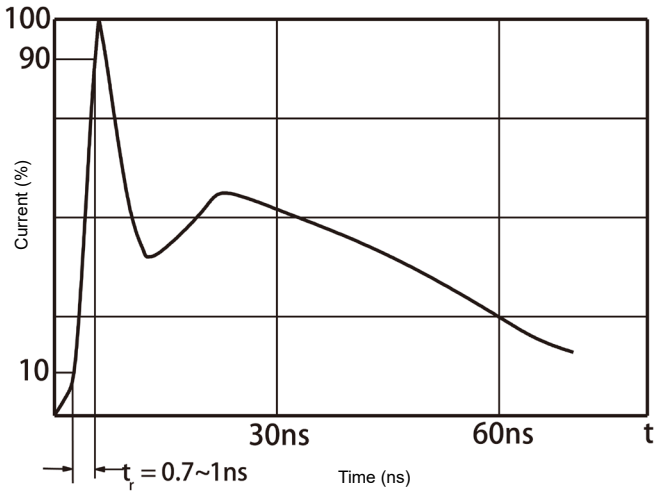
Notes:

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

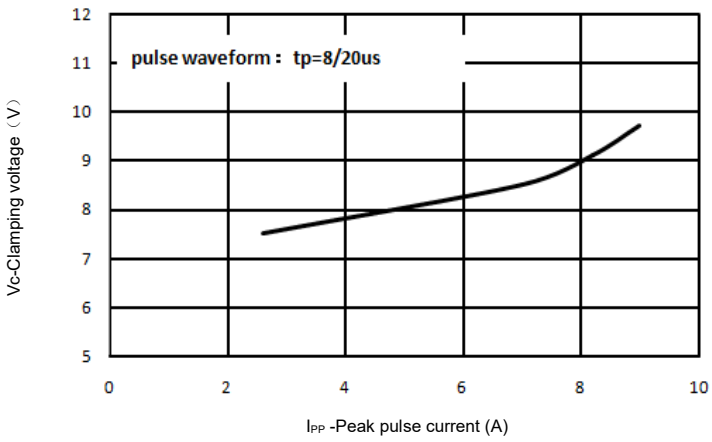
## Typical Characteristics (Ta=25℃, unless otherwise noted)



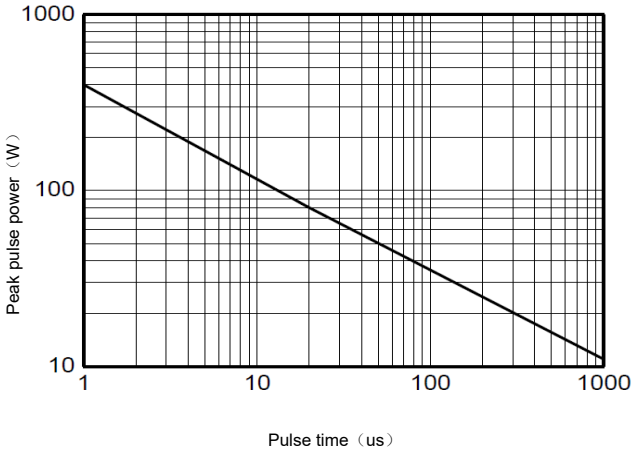

8/20 us waveform per IEC61000-4-5



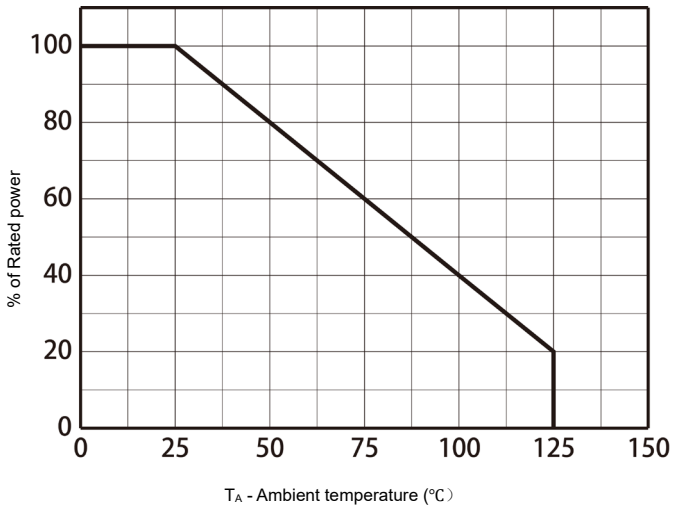

Contact discharge current waveform per IEC61000-4-2



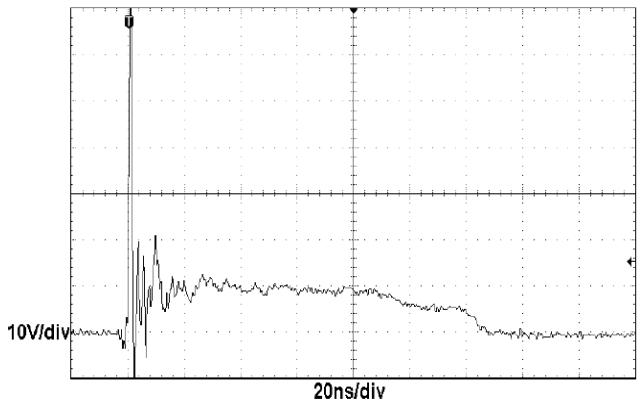

Clamping voltage vs. Peak pulse current



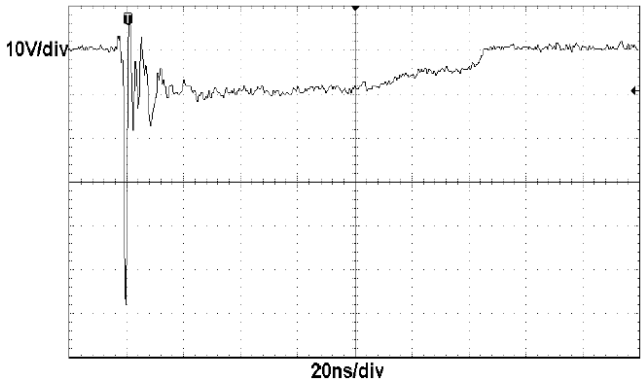

Non-repetitive peak pulse power vs. Pulse time




Power derating vs. Ambient temperature

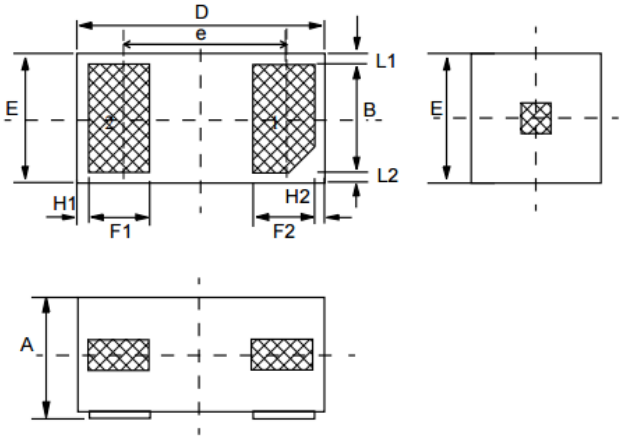



ESD Clamping(+8kV Contact Discharge )



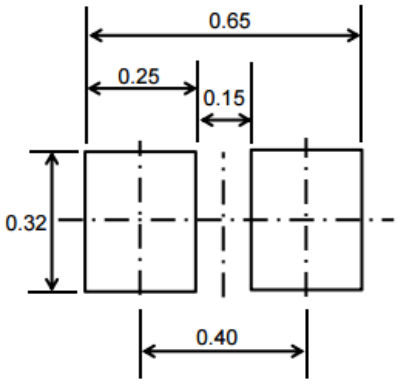

**ESD Clamping(-8kV Contact Discharge)**

## Package Outline Dimensions (DFN0603-2L）



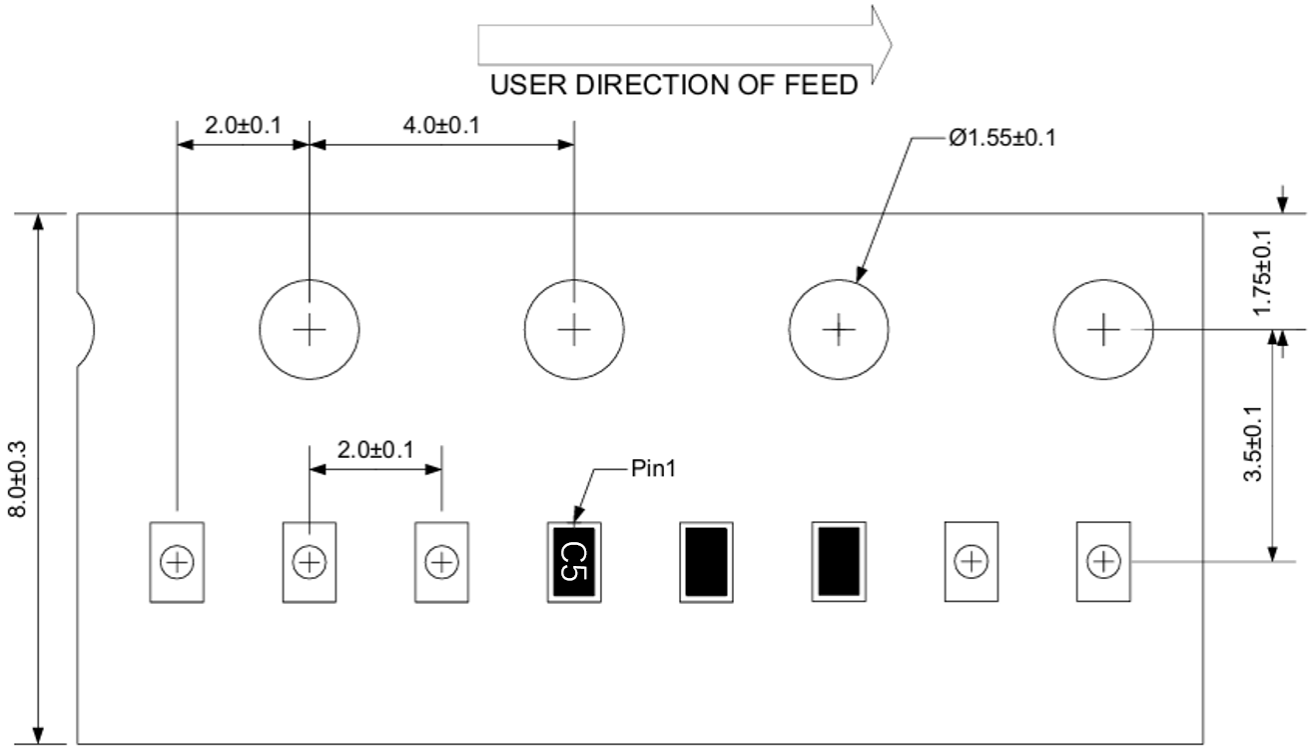

| Dim | Millimeters | | |
|---|---|---|---|
| | MIN | Typ. | MAX |
| A | 0.270 | 0.300 | 0.340 |
| B | 0.200 | 0.250 | 0.300 |
| D | 0.550 | 0.600 | 0.650 |
| E | 0.250 | 0.300 | 0.350 |
| e | - | 0.350 | - |
| F1 | 0.130 | 0.180 | 0.230 |
| F2 | 0.130 | 0.180 | 0.230 |
| L1 | 0.015 | 0.030 | 0.045 |
| L2 | 0.015 | 0.030 | 0.045 |
| H1 | 0.030 | 0.045 | 0.060 |
| H2 | 0.030 | 0.045 | 0.060 |

## Recommend Land Pattern (Unit: mm)




Note:
This recommended land pattern is for reference purpose only.

## Load with information




Unit:mm

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