

## Description

The XE2F4V5BS 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 XE2F4V5BS 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 6A (8/20 $\mu\text{s}$ ) according to IEC61000-4-5.

The XE2F4V5BS is available in DFN1006-2L package. Standard products are Pb-free and Halogen-free.

## Features

- ◆ Working voltage: 4.5V
- ◆ 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) 6A (8/20 $\mu\text{s}$ )  
IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ Low leakage current
- ◆ Low clamping voltage
- ◆ Solid-state silicon-avalanche technology

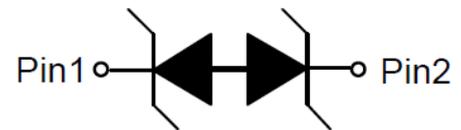
## Applications

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

<http://www.xihangsemi.com>



## DFN1006-2L (Bottom View)



## Circuit Diagram



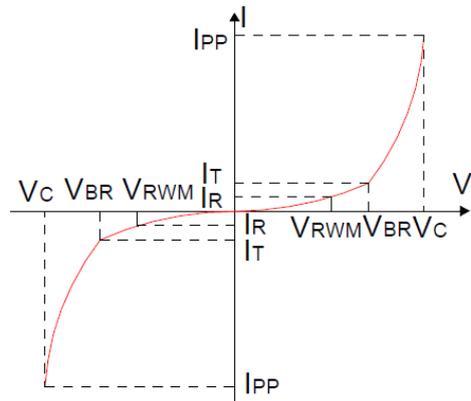
## Marking (Top View)

## Order Information

Device	Package	Shipping
XE2F4V5BS	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 ( $t_p = 8/20\mu S$ )	$P_{PK}$	66	W
Peak Pulse Current ( $t_p = 8/20\mu S$ )	$I_{pp}$	6	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	$^{\circ}C$

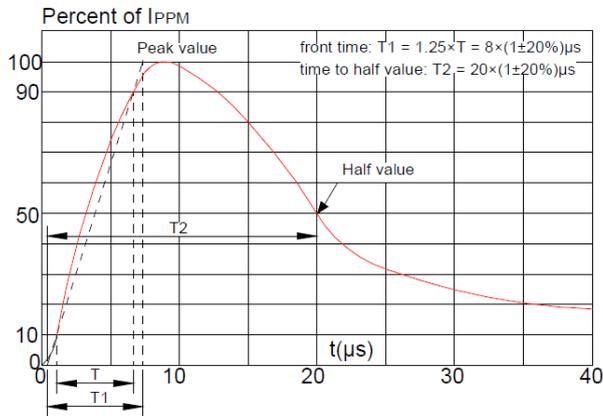
**Electrical Characteristics (Ta=25 $^{\circ}C$ , unless otherwise noted)**

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

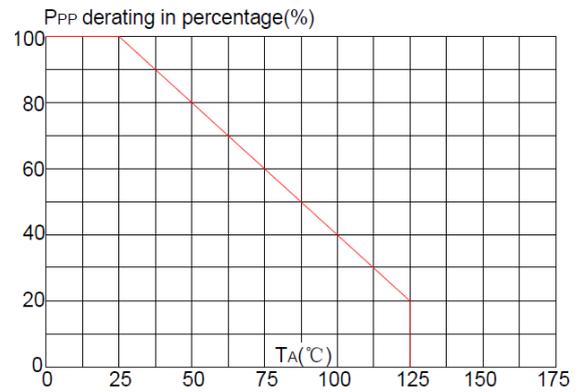
Notes:

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

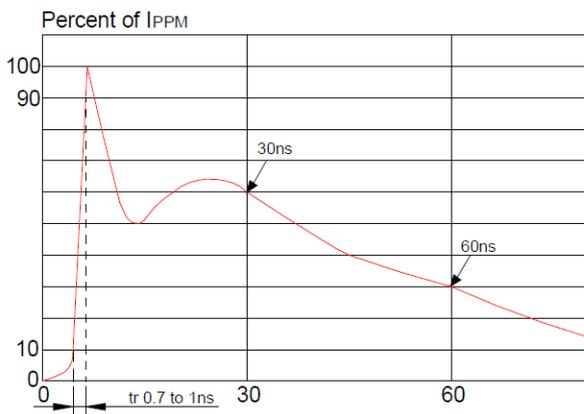
**Typical Characteristics (Ta=25°C, unless otherwise noted)**



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

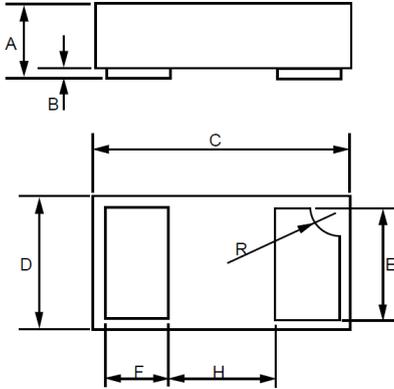


**Pulse Derating Curve**



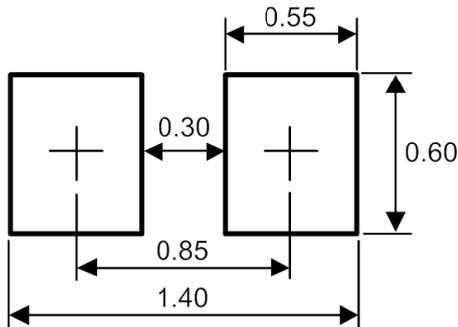
**ESD Clamping(8kV Contact Discharge )**

**Package Outline Dimensions (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.

