Description

The XE3FUC5VU is an ultra-low capacitance ESD protection diode designed to protect sensitive electronic components which are connected to high speed data lines and control lines from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. The XE3FUC5VU may be used to provide ESD protection up to ±20kV (contact) and ±25（air）discharge according to IEC61000-4-2, and withstand peak pulse current up to 5A (8/20μs) according to IEC61000-4-5.
The XE3FUC5VU is available in DFN1006-3L package. Standard products are Pb-free and Halogen-free.

Features

- Working voltage: 5V
- DFN1006-3L Package
- Ultra Low Capacitance：0.65pF
- Transient protection for data lines to
  IEC61000-4-2 (ESD) ±25kV (air),
  ±20kV (contact)
  IEC61000-4-5 (Surge) 5A (8/20us)
  IEC61000-4-4(EFT)40A(5/50ns)
- Low leakage current
- Low clamping voltage
- Solid-state silicon-avalanche technology

Applications

- USB2.0 and USB3.0
- HDMI1.3 and HDMI1.4
- SATA and eSATA
- DVI
- IEEE1394
- PCI Express
- Portable Electronics
- Notebook

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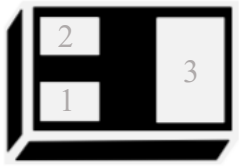
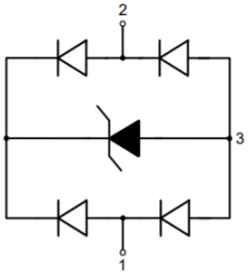
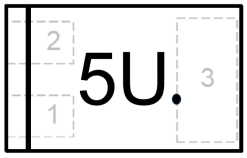


DFN1006-3L（Bottom View）



Circuit Diagram



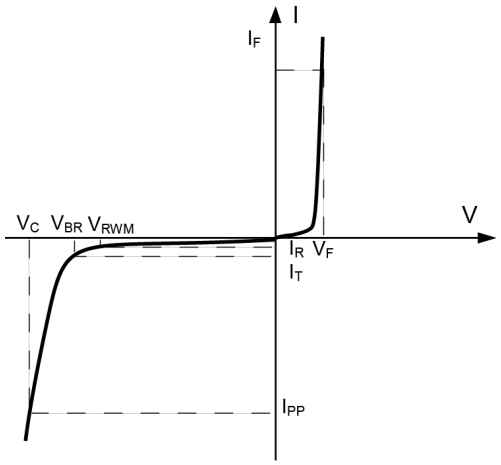
Marking（Top View）

Order Information

Device	Package	Shipping
XE3FUC5VU	DFN1006-3L	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_{BR}	Reverse Breakdown Current
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_T	Test current



Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_P = 8/20μS)	P_{PK}	75	W
Peak Pulse Currentr (t_P = 8/20μS)	I_{pp}	5	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±25	kV
ESD according to IEC61000-4-2 contact discharge		±20	kV
Lead Soldering Temperature	T_L	260 (10 sec)	℃
Operating Temperature	T_{OP}	-55 to +125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

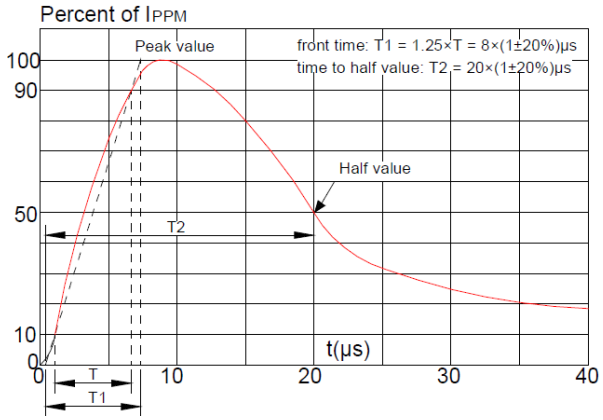
Electrical Characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5.0	V
Reverse Leakage Current	I_R	V_{RWM} =5V			100	nA
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.0	8.0	9.0	V
Clamping Voltage[1)]	V_c	I_{PP}=1A t_P = 8/20μs		8.5	10	V
		I_{PP}=5A t_P = 8/20μs		13	15	V
Junction Capacitance	C_j	V_R=0V f = 1MHz		0.65	0.8	pF

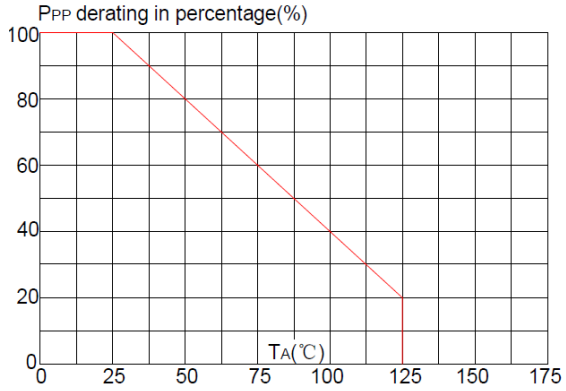
Notes:

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

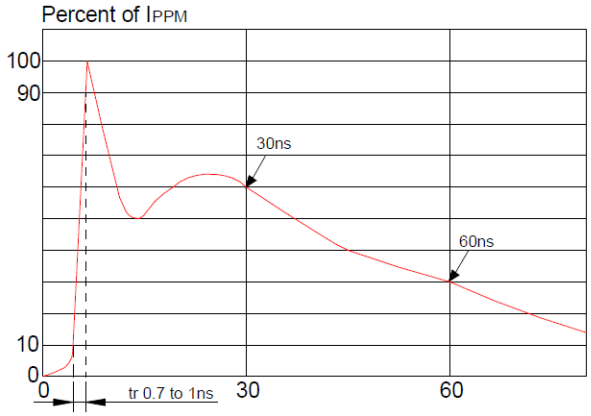
Typical Characteristics (Ta=25℃, unless otherwise noted)



Pulse Waveform (8/20us)



Pulse Derating Curve



ESD Clamping(8kV Contact Discharge)

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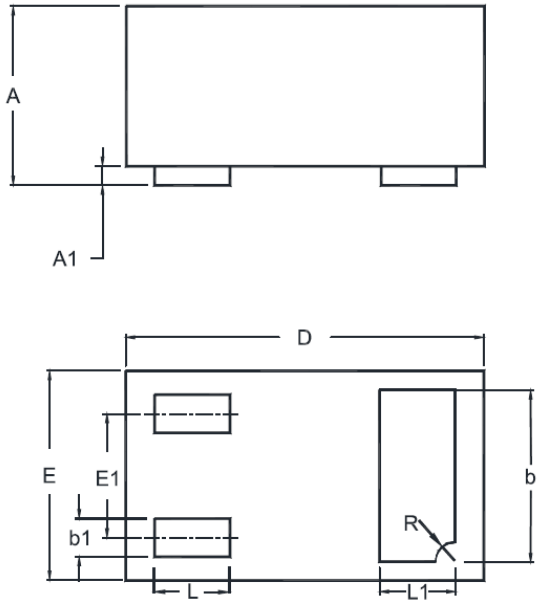
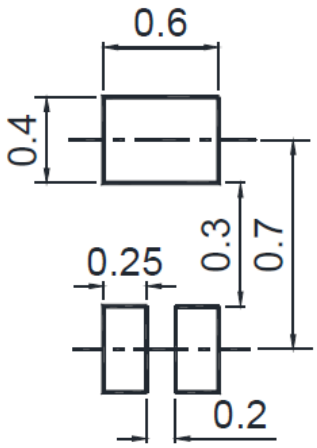
Package Outline Dimensions (DFN1006-3L）



UNIT	A	A1	b	b1	D	E	E1	L	L1	R
mm	0.51 0.46	0.05 0	0.55 0.45	0.2 0.1	1.05 0.95	0.65 0.55	0.325	0.3 0.2	0.3 0.2	0.15 0.05

Recommend Land Pattern (Unit: mm)



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

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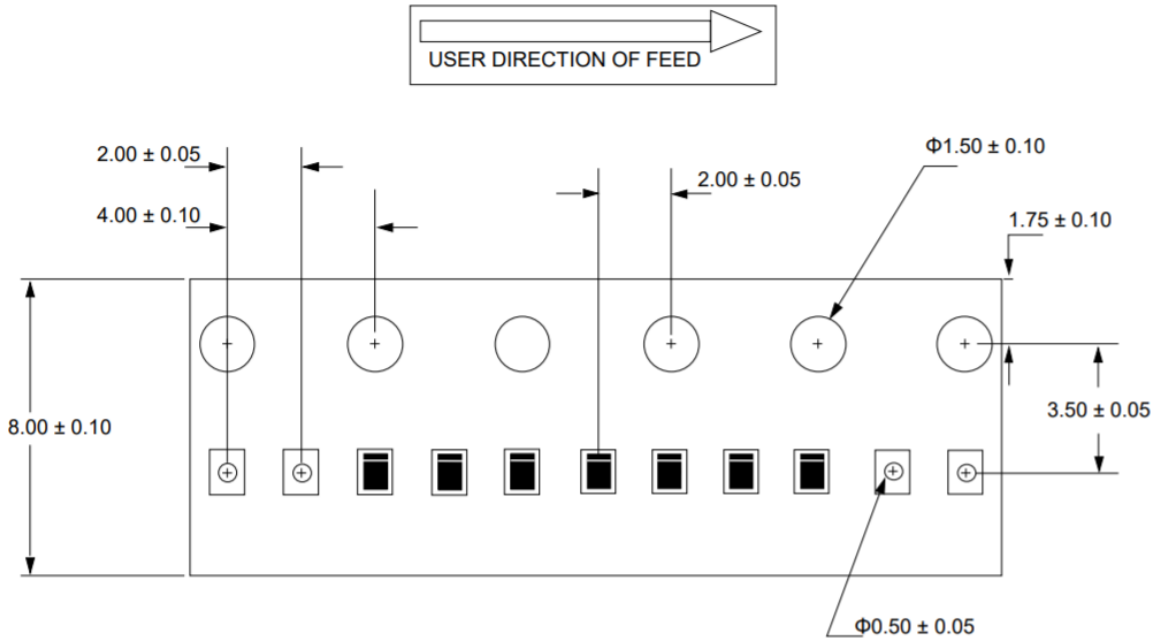

Unit：mm

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