

Description

The XT3N4V5B TVS diode is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebooks, and PDA's. It offers superior electrical characteristics such as low clamping voltage, low leakage current and high surge capability. It is designed to protect sensitive electronic components which are connected to power lines, from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lighting.

The XT3N4V5B is in a DFN2x2-3L package and will protect one bi-directional line. Standard products are Pb-free and Halogen-free.

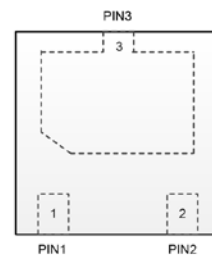
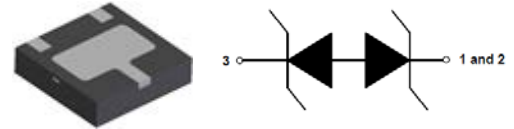
Features

- ◆ Working voltage: 4.5V
- ◆ DFN2x2-3L Package
- ◆ 6000 Watts peak pulse power ($t_p=8/20\mu s$)
- ◆ Transient protection for data lines to IEC 61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
IEC 61000-4-5 (Surge) 290A (8/20 μs)
- ◆ Low leakage current
- ◆ Low clamping voltage
- ◆ Solid-state silicon-avalanche technology

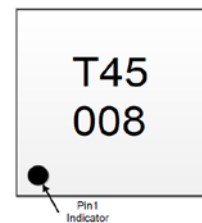
Applications

- ◆ Power supply protection
- ◆ Personal digital assistants (PDA's)
- ◆ Microprocessors based equipment
- ◆ Power Management
- ◆ Cell phone Handsets and Accessories
- ◆ Portable Electronics
- ◆ Peripherals

<http://www.xihangsemi.com>



Pin Configuration (Top View)



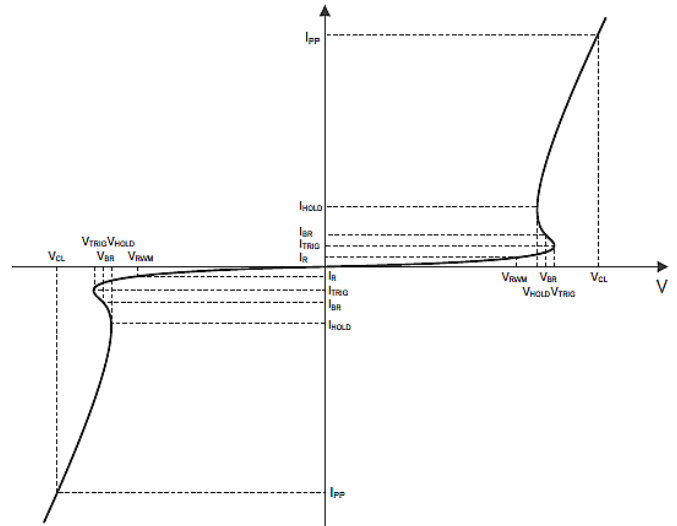
Marking

Order Information

Device	Package	Shipping
XT3N4V5B	DFN2x2-3L	3000/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_{CL}	Clamping Voltage @ I_{PP}
V_{TRIG}	Reverse Trigger Voltage
I_{TRIG}	Reverse Trigger Current
V_{HOLD}	Reverse Holding Voltage
I_{HOLD}	Reverse Holding Current



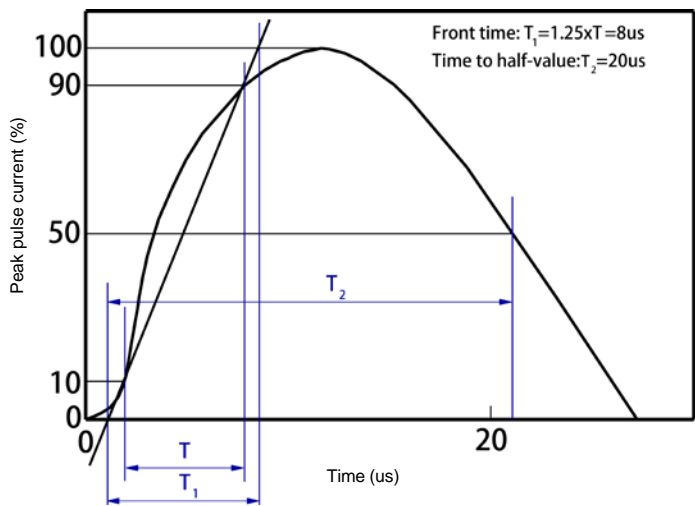
Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu S$)	P_{PK}	6000	W
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	$^{\circ}C$

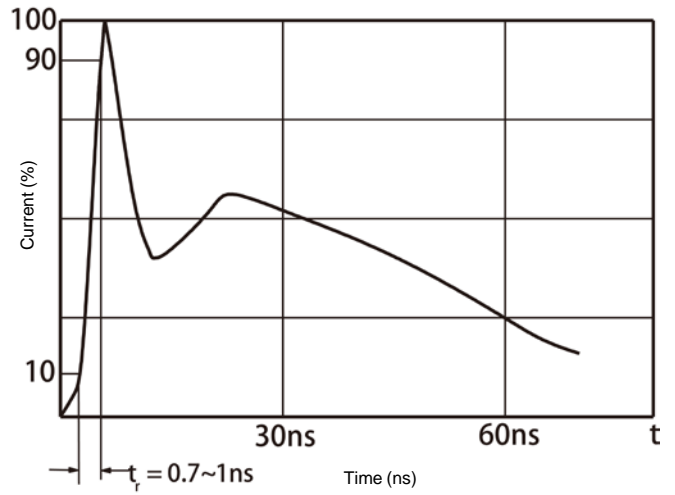
Electrical Characteristics ($T_a=25^{\circ}C$, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				4.5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	4.8	5.4	6	V
Reverse Leakage Current	I_R	$V_{RWM}=4.5V$			200	nA
Peak Pulse Current	I_{PP}	$t_p = 8/20\mu s$			290	A
Clamping Voltage	V_C	$I_{PP}=150A$ $t_p = 8/20\mu s$			16	V
Clamping Voltage	V_C	$I_{PP}=200A$ $t_p = 8/20\mu s$			18	V
Clamping Voltage	V_C	$I_{PP}=290A$ $t_p = 8/20\mu s$			21	V
Junction Capacitance	C_j	$V_R=0V$ $f = 1MHz$	800	900	1000	pF

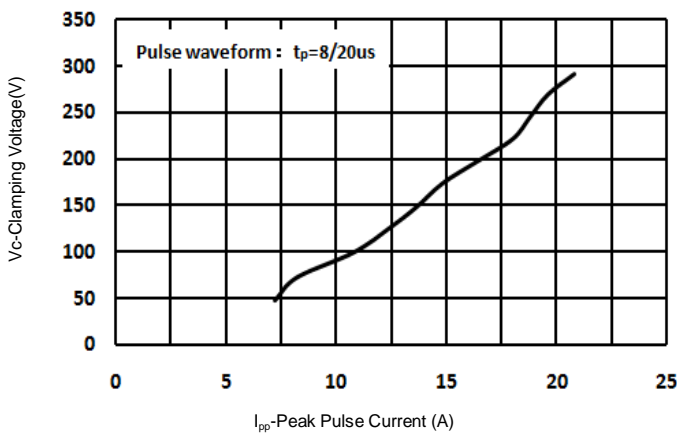
Typical Characteristics (Ta=25°C, unless otherwise noted)



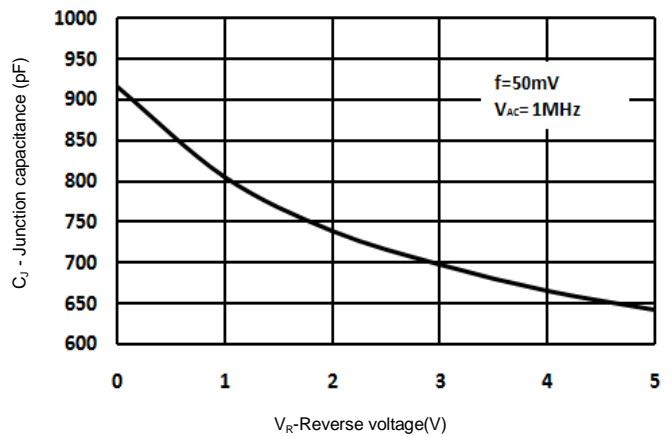
8/20 us waveform per IEC61000-4-5



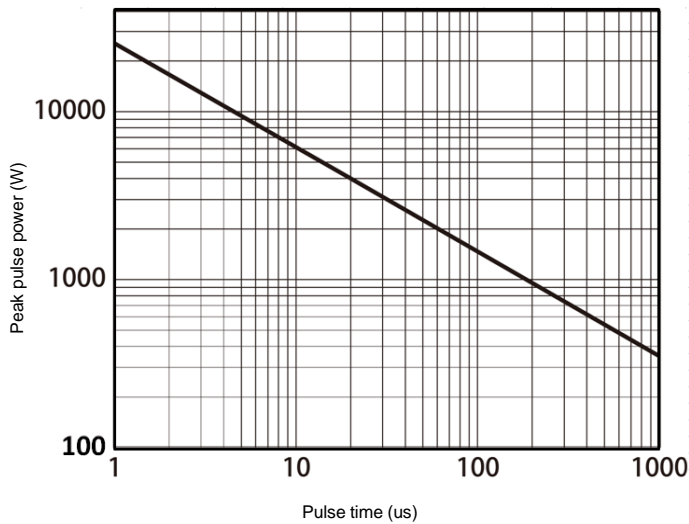
Contact discharge current waveform per IEC61000-4-2



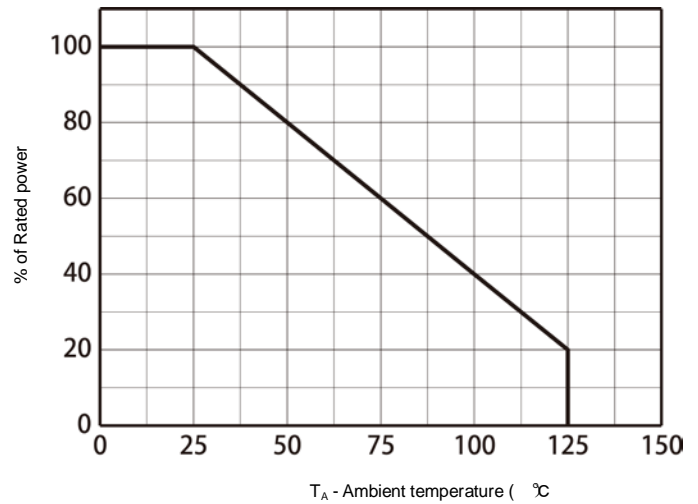
Clamping Voltage vs. Peak pulse current



Capacitance vs. Reverse voltage



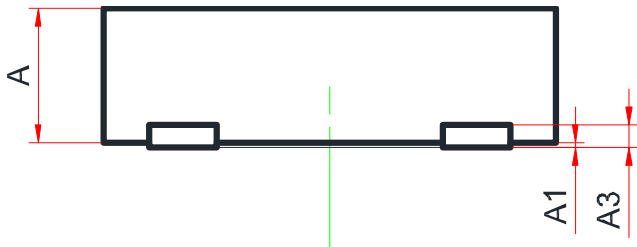
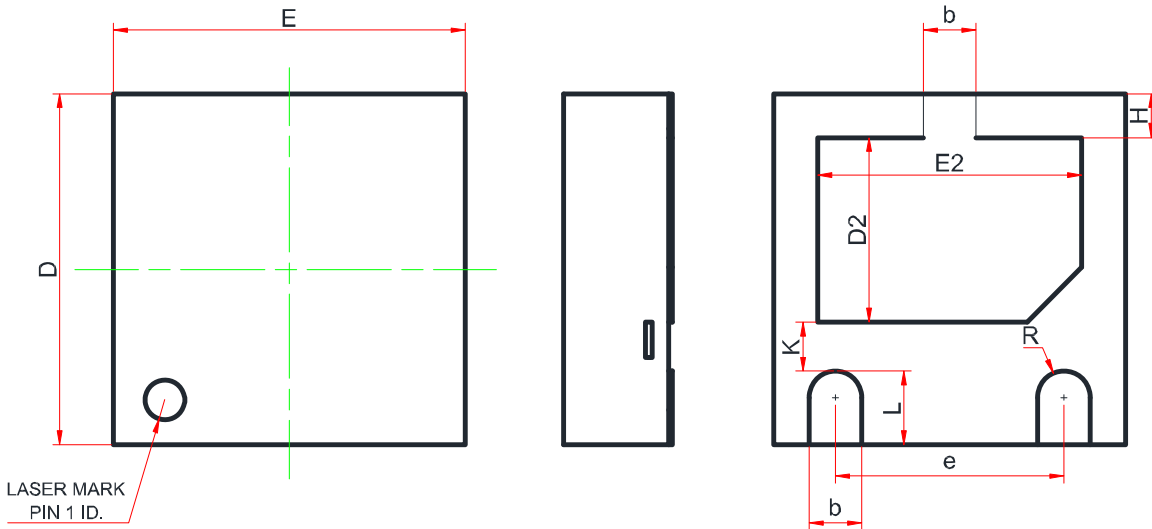
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

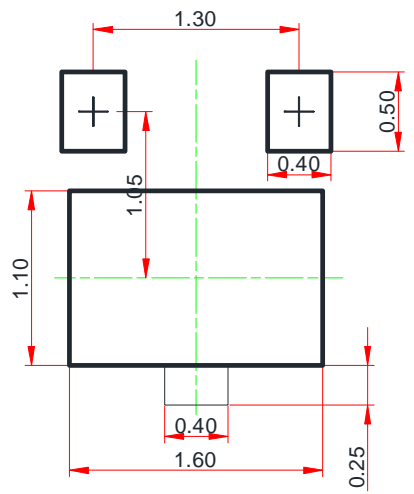
Package Outline Dimensions (DFN2x2-3L)

DFN2.0x2.0-3L



Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.51	0.55	0.60
A1	0.00	0.02	0.05
A3	0.15 REF.		
b	0.25	0.30	0.35
D	1.90	2.00	2.10
E	1.90	2.00	2.10
D2	0.85	1.00	1.10
E2	1.35	1.50	1.60
e	1.20	1.30	1.40
H	0.20	0.25	0.30
K	0.20	0.30	0.40
L	0.35	0.40	0.45
R	0.15	-	-

Recommend Land Pattern (Unit: mm)



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