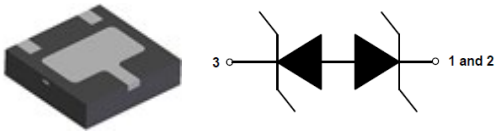
Description

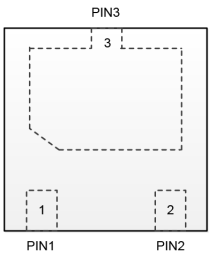
The XT3N4V5B TVS diode is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebooks, and PDA's. It offers superior electrical characteristics such as low clamping voltage, low leakage current and high surge capability. It is designed to protect sensitive 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.

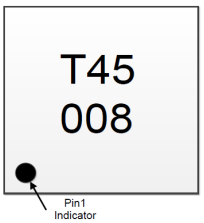
http//:www.xihangsemi.com



DFN2020-3L



Pin Configuration (Top View)



Marking

Features

- Working voltage: 4.5V
- DFN2x2-3L Package
- 4800 Watts peak pulse power (t_p=8/20us)
- Transient protection for data lines to
  IEC 61000-4-2 (ESD) ±30kV (air),
  ±30kV (contact)
  IEC 61000-4-5 (Surge) 240A (8/20us)
- Low leakage current
- Low clamping voltage
- Solid-state silicon-avalanche technology

Order Information

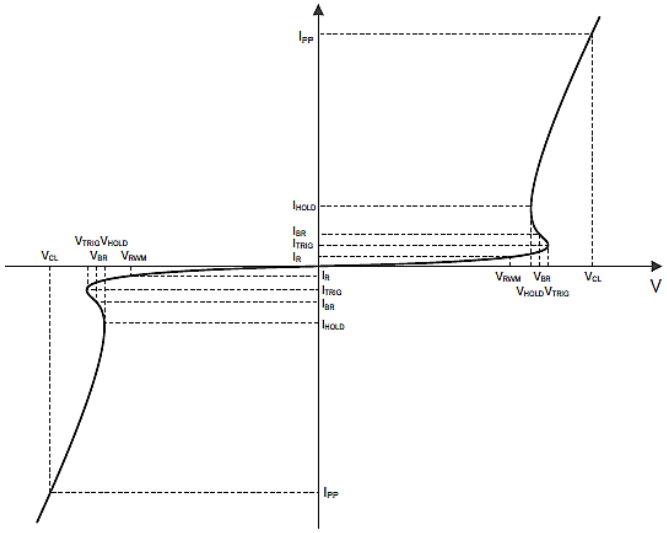
Device	Package	Shipping
XT3N4V5B	DFN2x2-3L	3000/Tape&Reel

Applications

- Power supply protection
- Personal digital assistants (PDA's)
- Microprocessors based equipment
- Power Management
- 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_{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



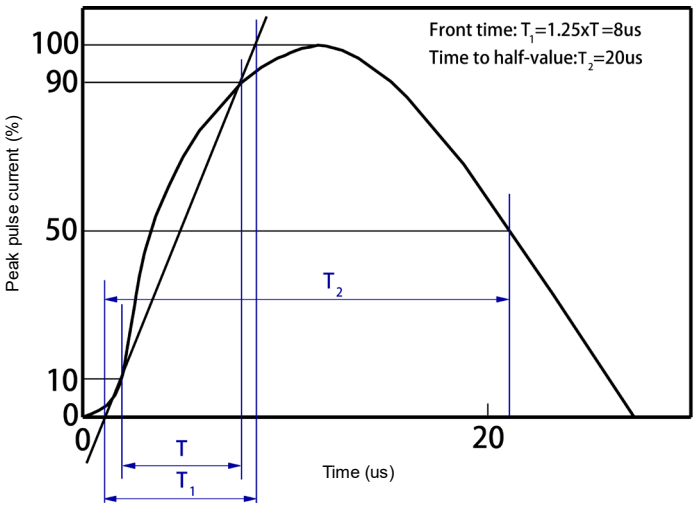
Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_P = 8/20μS)	P_{PK}	4800	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)	℃
Operating Temperature	T_{OP}	-55 to +125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

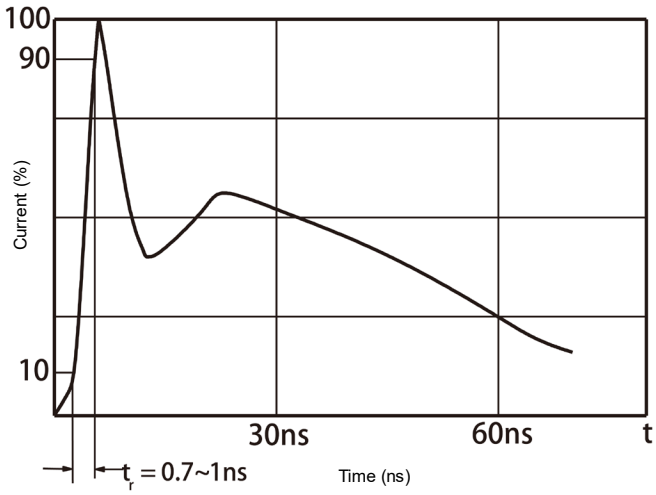
Electrical Characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				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 = 8/20μs			290	A
Clamping Voltage	V_C	I_{PP}=150A t_P = 8/20μs			16	V
Clamping Voltage	V_C	I_{PP}=200A t_P = 8/20μs			18	V
Clamping Voltage	V_C	I_{PP}=240A t_P = 8/20μs			20	V
Junction Capacitance	C_j	V_R=0V f = 1MHz	200	400	600	pF

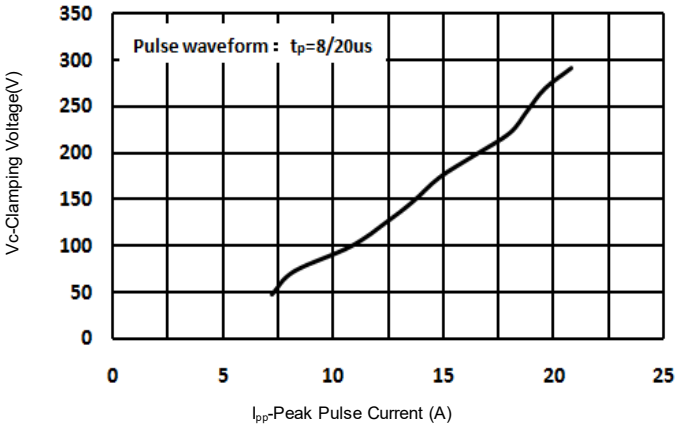
Typical Characteristics (Ta=25℃, unless otherwise noted)



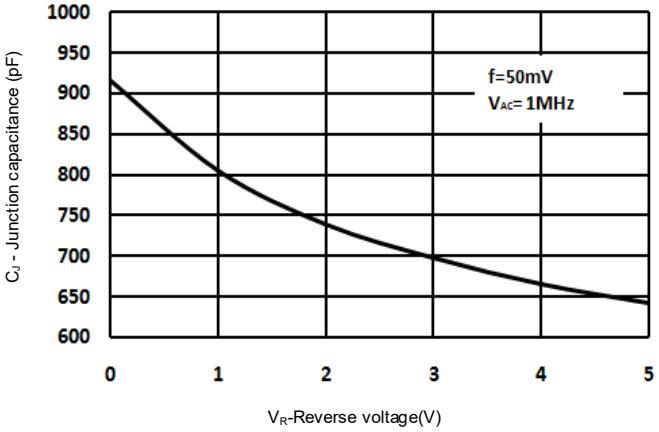
8/20 us waveform per IEC61000-4-5



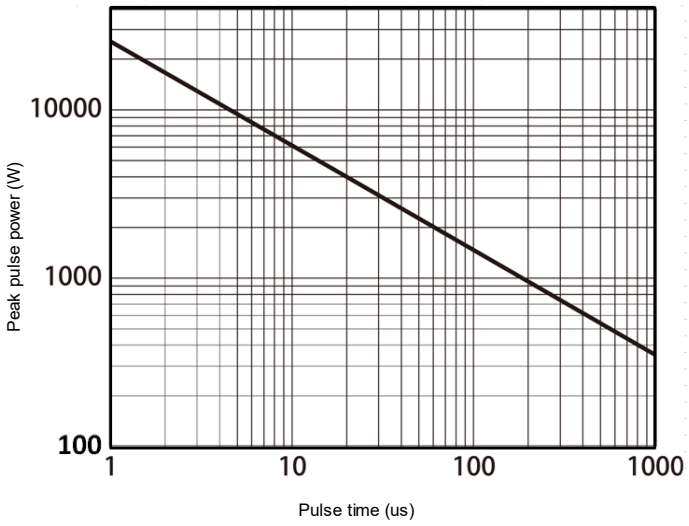
Contact discharge current waveform per IEC61000-4-2



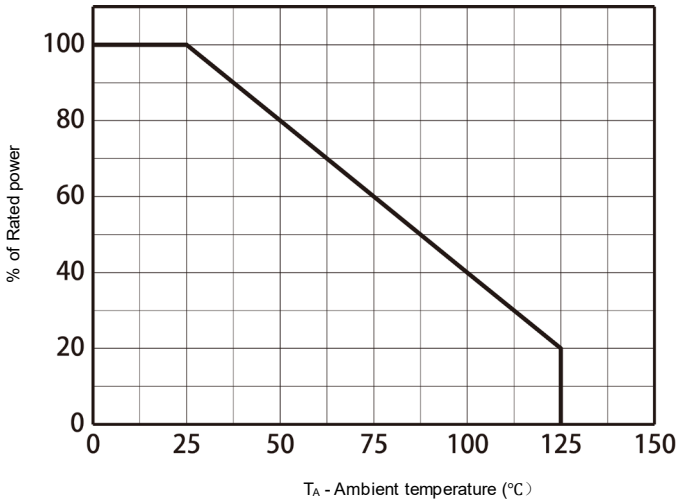
Clamping Voltage vs. Peak pulse current



Capacitance vs. Reverse voltage



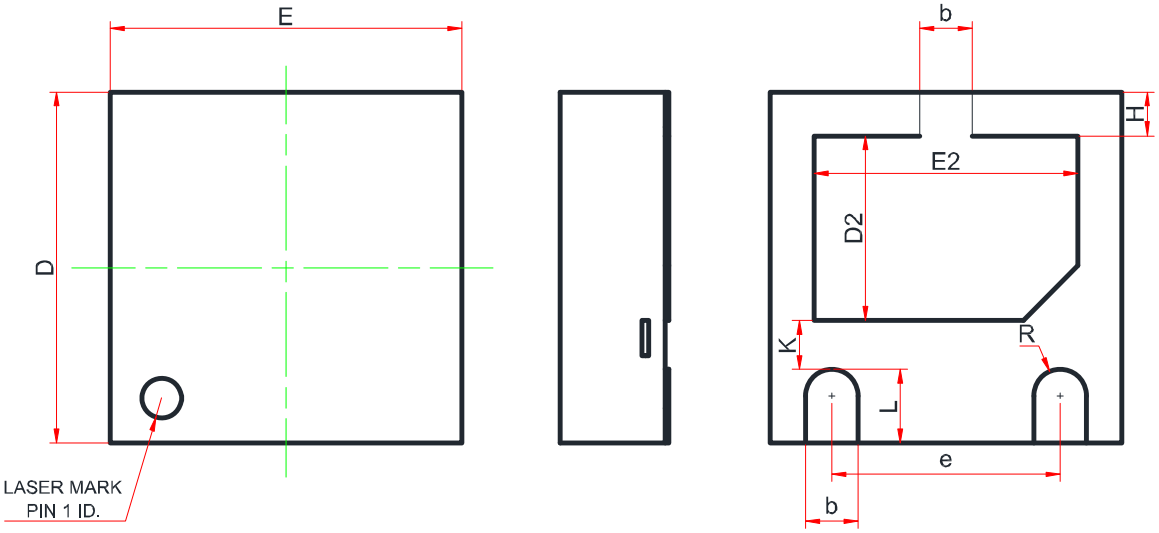
Non-repetitive peak pulse power vs. Pulse time

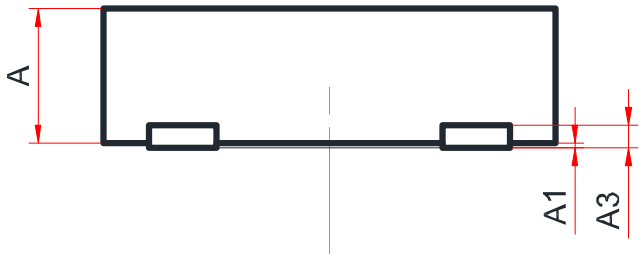


Power derating vs. Ambient temperature

Package Outline Dimensions (DFN2x2-3L)

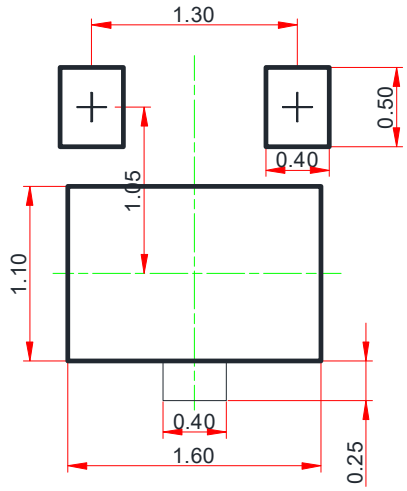
DFN2.0×2.0-3L





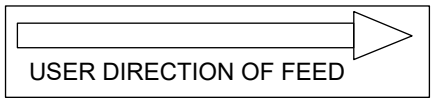
Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.51	0.55	0.60
A1	0.00	0.02	0.05
A3	0.15 REF.		
b	0.25	0.30	0.35
D	1.90	2.00	2.10
E	1.90	2.00	2.10
D2	0.85	1.00	1.10
E2	1.35	1.50	1.60
e	1.20	1.30	1.40
H	0.20	0.25	0.30
K	0.20	0.30	0.40
L	0.35	0.40	0.45
R	0.15	-	-

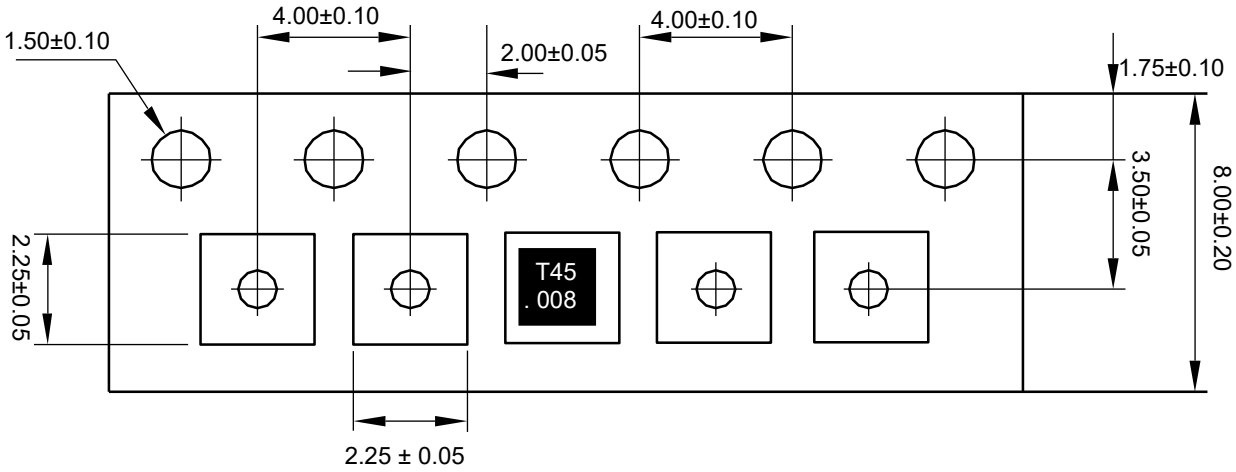
Recommend Land Pattern (Unit: mm)



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

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.