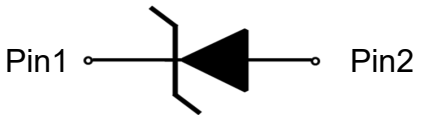
Description

The XT2N15VU 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 Lightning.

The XT2N15VU is in a DFN1610 package and will protect one unidirectional line. It 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 55A (8/20μs) according to IEC61000-4-5.

http//:www.xihangsemi.com

DFN1610-2L



Circuit Diagram

Features

- Working voltage: 15V
- DFN1610 Package
- 1600 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) 55A (8/20us)
  IEC61000-4-4(EFT)40A(5/50ns)
- Low leakage current
- Low clamping voltage
- Solid-state silicon-avalanche technology

Marking

Applications

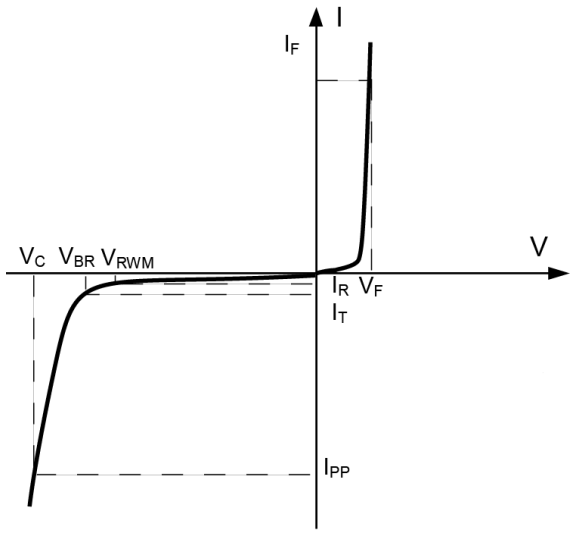
- Power lines
- Personal digital assistants (PDA's)
- Microprocessors based equipment
- Notebooks, Desktops, and Servers
- Cell phone Handsets and Accessories
- Portable Electronics
- Peripherals

Order Information

Device	Package	Shipping
XT2N15VU	DFN1610	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_T	Test Current
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F
C_j	Junction Capacitance
I_{PP}	Peak Pulse Current



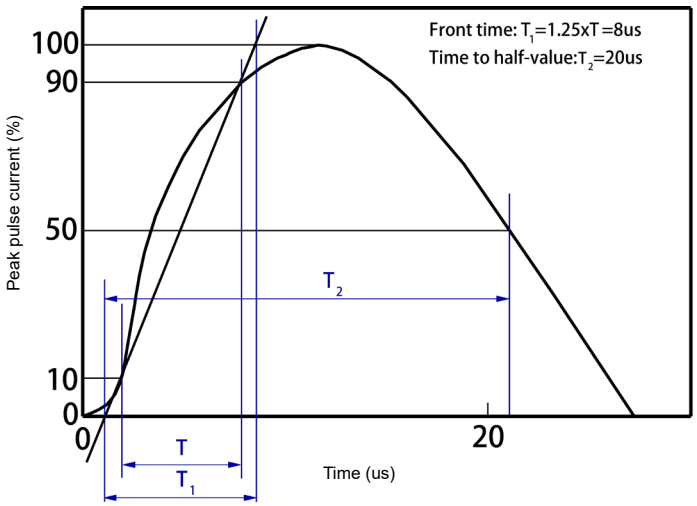
Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_P = 8/20μS)	P_{PK}	1500	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	℃

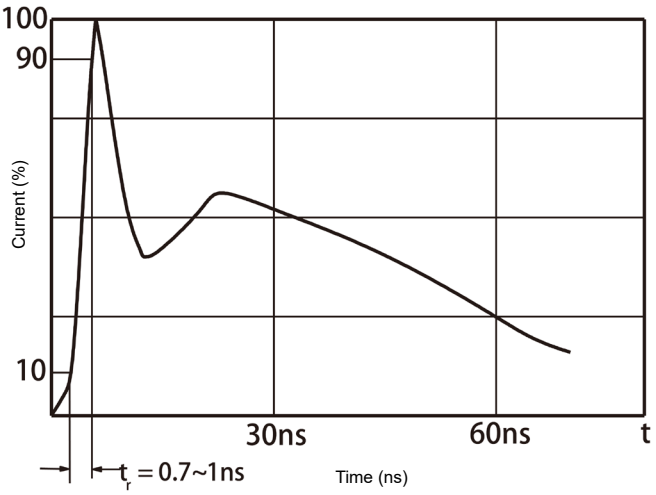
Electrical Characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				15	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	16	17.2	20	V
Reverse Leakage Current	I_R	V_{RWM} =15V			1	μA
Peak Pulse Current	I_{PP}	t_P = 8/20μs			55	A
Clamping Voltage	V_C	I_{PP}=25A t_P = 8/20μs		22	25	V
Clamping Voltage	V_C	I_{PP}=50A t_P = 8/20μs		26	28	V
Clamping Voltage	V_C	I_{PP}=55A t_P = 8/20μs		27	30	V
Junction Capacitance	C_j	V_R=0V f = 1MHz	300	330	400	pF

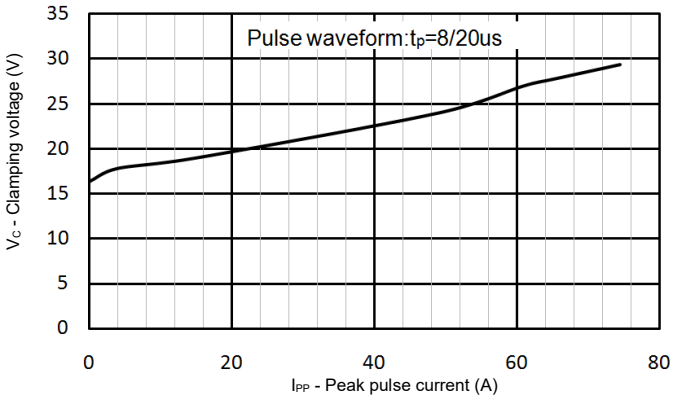
Typical Characteristics (Ta=25℃, unless otherwise noted)



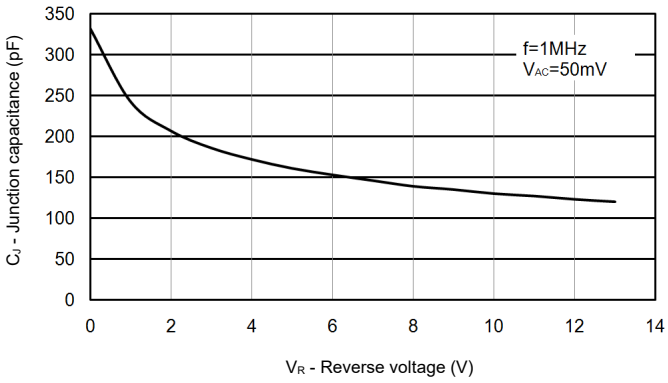
8/20 us waveform per IEC61000-4-5



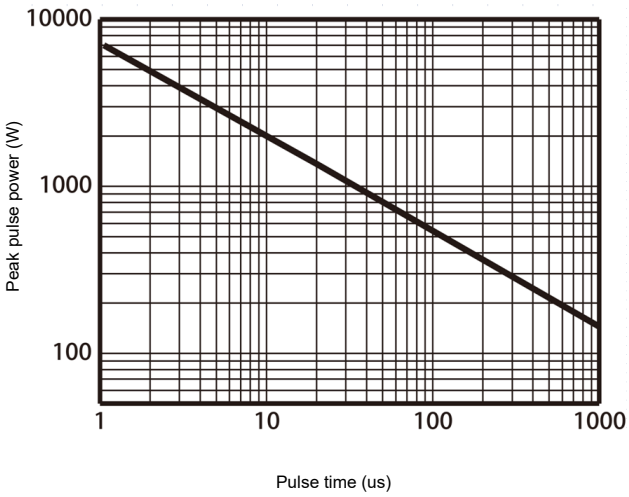
Contact discharge current waveform per IEC61000-4-2



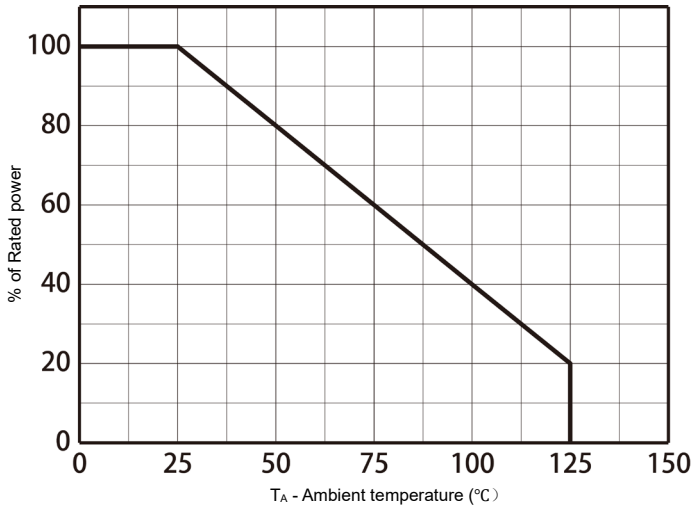
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage

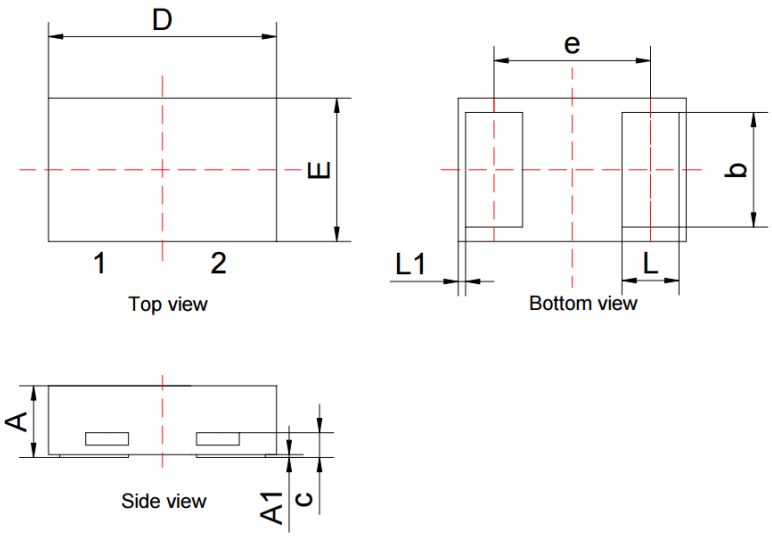


Non-repetitive peak pulse power vs. Pulse time



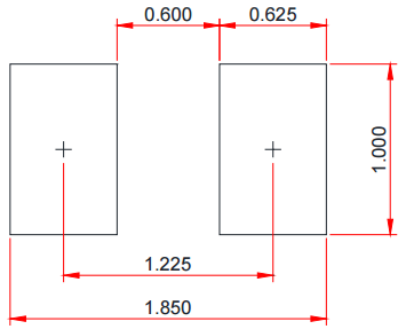
Power derating vs. Ambient temperature

Package Outline Dimensions (DFN1610)



Symbol	Millimeter		
	Min.	Typ.	Max.
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
b	0.85	0.90	0.95
c	0.08	0.12	0.18
D	1.55	1.60	1.65
e	1.1BSC		
E	0.95	1.00	1.05
L	0.35	0.40	0.45
L1	0.06BSC		

Recommend Land Pattern (Unit: mm)



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

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.