

LTVS16H12T5G

1-Line Uni-directional TVS Diode

The TVS16H is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The TVS16H complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small 1.6x1.0x0.5mm lead-free DFN package. The small size and high ESD surge protection make TVS16H an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Ultra small package: 1.6x1.0x0.5mm
- Protects one data or power line
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-4 (EFT) 65A (5/50ns)
 - IEC61000-4-5 (Lightning) 65A (8/20 μs)
- RoHS Compliant

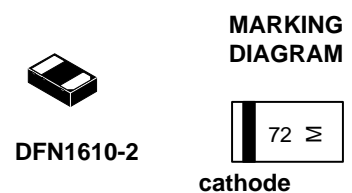
Applications

- Mobile Phones
- Battery Protection
- Power Line Protection
- Vbat pin for Mobile Devices
- Hand Held Portable Applications

Mechanical Characteristics

- Package: DFN1610-2
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020

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72 = Specific Device Code
M = Month Code

Ordering information

Device	Marking	Shipping
LTVS16H12T5G	B3	8000/Tape&Reel

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Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	1500	W
Peak Pulse Current (8/20 μs)	Ipp	65	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	11		12	V	
Breakdown Voltage	VBR	12.5	13.5	15.5	V	IT = 1mA
Reverse Leakage Current	IR			0.5	μA	VR = 12V
Forward Voltage	VF		1.0	1.2	V	IF = 10mA
Clamping Voltage	VC			16	V	I _{PP} = 10A (8 x 20 μs pulse)
Clamping Voltage	VC			23	V	I _{PP} = 60A (8 x 20 μs pulse)
Junction Capacitance	CJ		250		pF	VR = 0V, f = 1MHz

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Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)

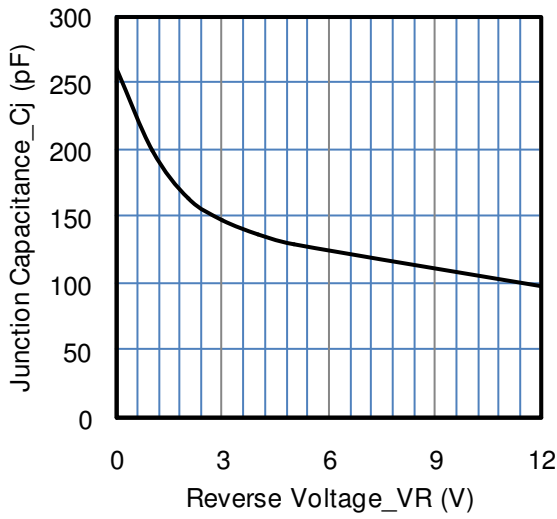


Fig1. Junction Capacitance vs. Reverse Voltage

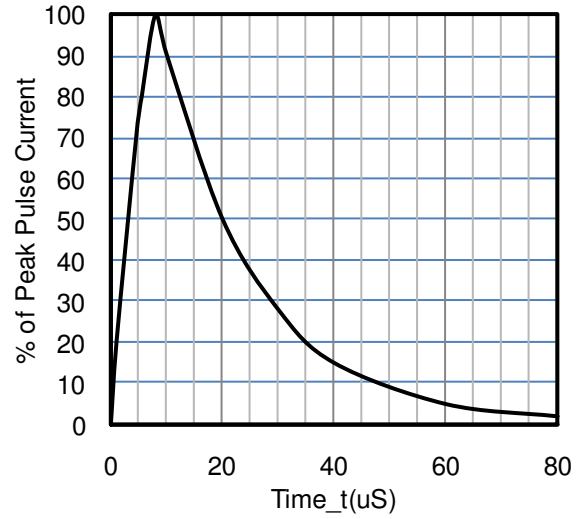


Fig 2. 8 X 20uS Pulse Waveform

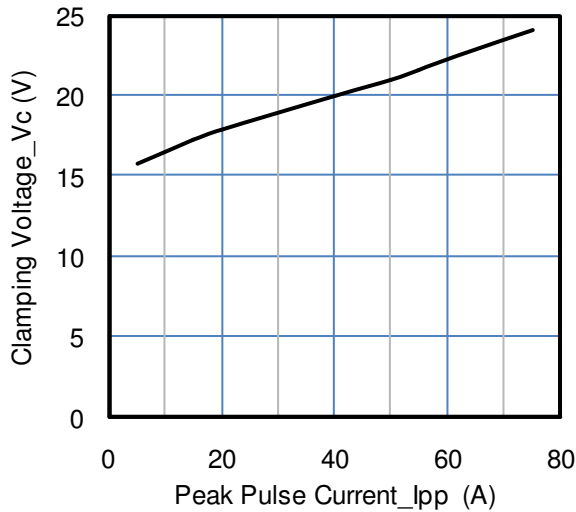


Fig3. Clamping Voltage vs. Peak Pulse Current

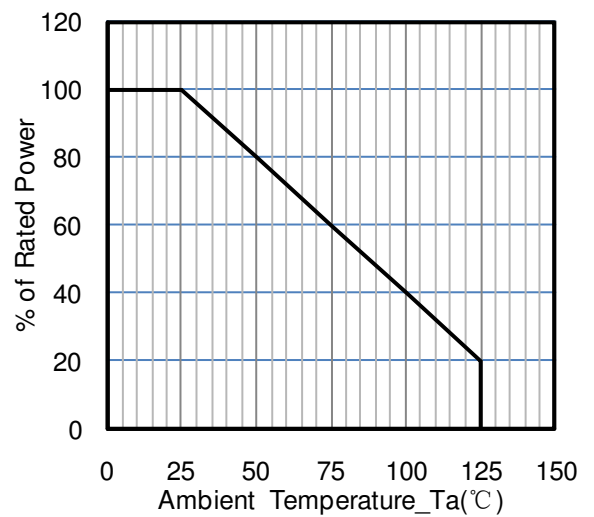
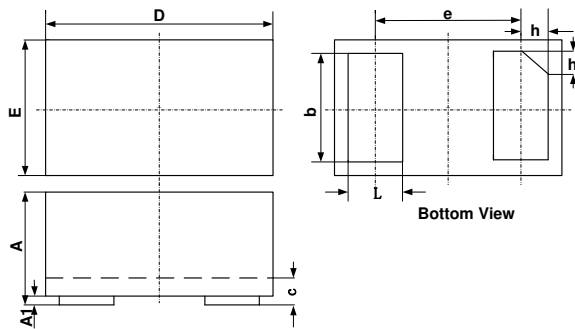


Fig4. Power Derating Curve

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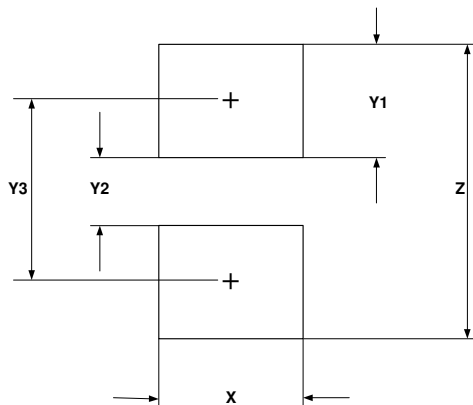
DFN1610-2

DFN1610-2 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.75	0.80	0.85	0.030	0.032	0.034
c	0.10	0.15	0.20	0.004	0.006	0.008
D	1.55	1.60	1.65	0.062	0.064	0.066
e	1.10 BSC			0.044 BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018
h	0.15	0.20	0.25	0.006	0.008	0.010

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.00	0.040
Y1	0.62	0.025
Y2	0.60	0.024
Y3	1.22	0.049
Z	1.85	0.074