LTVS16D15H11T5G

1- Line Uni- directional TVS Diode

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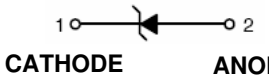
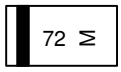
The TVS16D15 is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The ESD16D15 complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV 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 ESD16D15 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.



CATHODE **ANODE**

DFN1610

MARKING DIAGRAM



72 = Specific Device Code
M = Month Code

Features

- Ultra small package: 1.6x1.0x0.5mm
- Protects one data or power line
- Ultra low leakage: nA level
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - IEC61000-4-4 (EFT) 80A (5/50ns)
  - IEC61000-4-5 (Lightning) 60A (8/20μs)
- RoHS Compliant

Applications

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

Mechanical Characteristics

- Package: DFN1610-2
- Lead Finish: NiPdAu
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020

Ordering information

Device	Marking	Shipping
LTVS16D15H11T5G	72	8000/Tape&Reel

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	1500	W
Peak Pulse Current (8/20μs)	Ipp	60	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}	11		12	V	
Breakdown Voltage	V_{BR}	12.5	14.5	15.5	V	I_T = 1mA
Reverse Leakage Current	I_R			50	nA	V_{RWM} = 12V
Forward Voltage	V_F		1.0	1.2	V	I_F = 10mA
Clamping Voltage	V_C			18.5	V	I_{PP} = 10A (8 x 20μs pulse)
Clamping Voltage	V_C			25	V	I_{PP} = 60A (8 x 20μs pulse)
Junction Capacitance	C_J		250		pF	VR = 0V, f = 1MHz

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

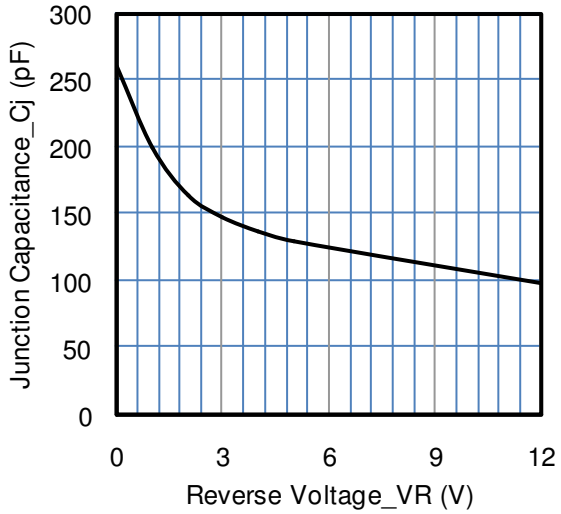


Fig1.Junction Capacitance vs. Reverse Voltage

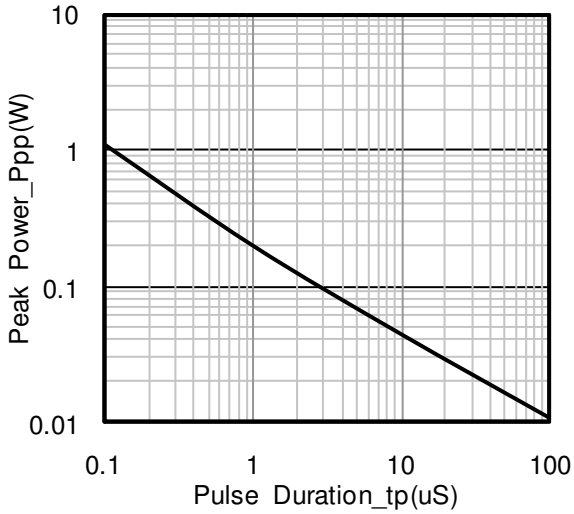


Fig2.Peak Pulse Power vs. Pulse Time

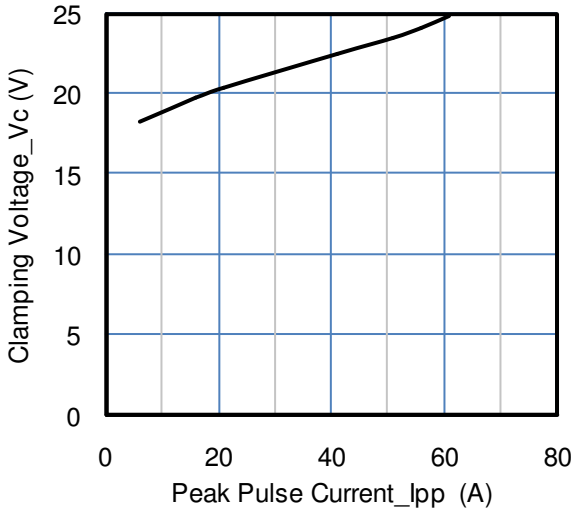


Fig3.Clamping Voltage vs. Peak Pulse Current

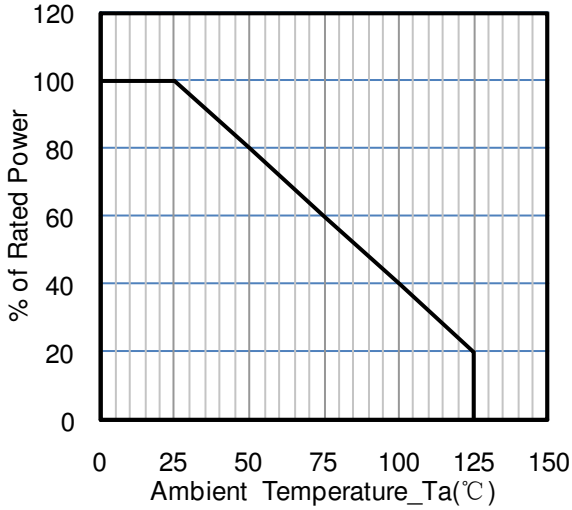


Fig4.Power Derating Curve

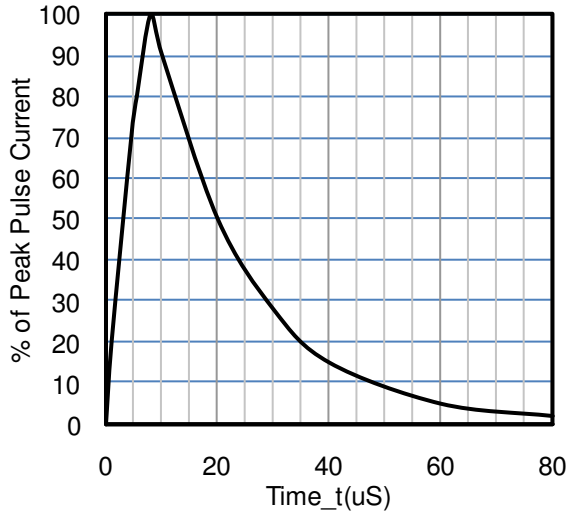


Fig 5. 8 X 20uS Pulse Waveform

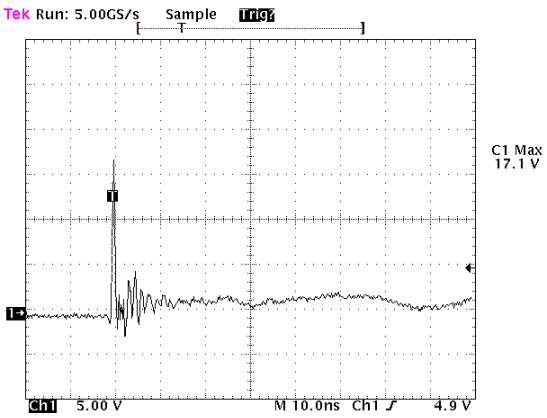
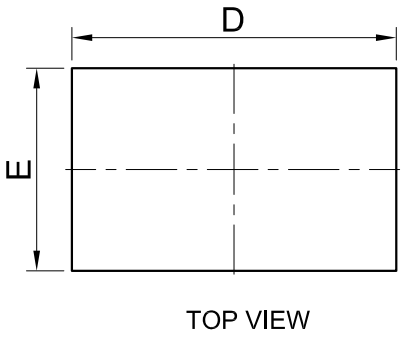
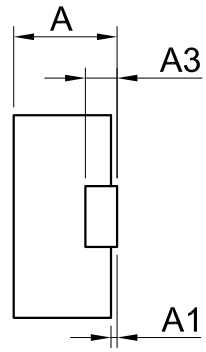


Fig 6. ESD Clamping Voltage
8 kV Contact per IEC61000−4−2

OUTLINE AND DIMENSIONS

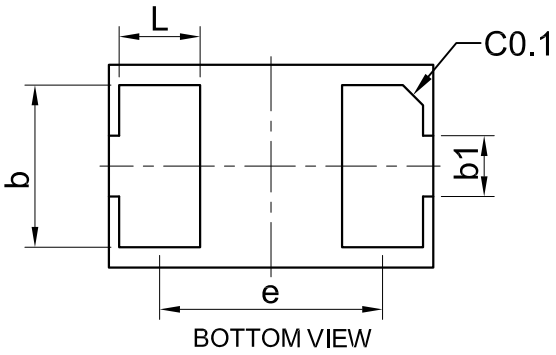


TOP VIEW



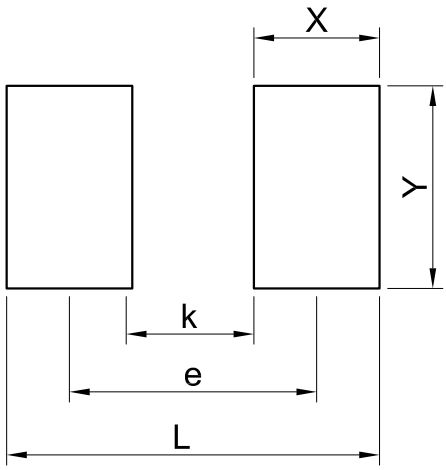
SIDE VIEW

DFN1610			
DIM	MIN	NOR	MAX
A	0.46	0.51	0.56
A1	0.01	0.03	0.05
b	0.75	0.80	0.85
b1	0.25	0.30	0.35
D	1.55	1.60	1.65
E	0.95	1.00	1.05
e	1.10BSC		
L	0.35	0.40	0.45
A3	0.127REF.		
All Dimensions in mm			



BOTTOM VIEW

SOLDERING FOOTPRINT



DFN1610	
DIM	(mm)
X	0.62
Y	1.00
L	1.84
e	1.22
K	0.60