

LTVS20H12ET5G

1-Line Uni-directional TVS Diode

The TVS20H12 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 TVS20H12 complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. The high ESD surge protection make TVS20H12 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

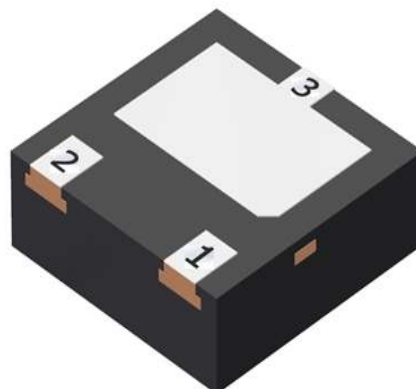
Features

- Protects one data or power line
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 Air discharge: $\pm 30\text{kV}$
 Contact discharge: $\pm 30\text{kV}$
- RoHS Compliant

Applications

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

LTVS20H12ET5G



DFN2020-3



Ordering information

Device	Marking	Shipping
LTVS20H12ET5G	ET	3000/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	4000	W
Peak Pulse Current (8/20 μs)	Ipp	180	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	± 30 ± 30	kV
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			12	V	
Breakdown Voltage	VBR	12.8	13.8	14.5	V	$I_R = 1\text{mA}$
Reverse Leakage Current	I_R			1	μA	$V_R = 12\text{V}$
Forward Voltage	V_F		0.75	1.2	V	$I_F = 10\text{mA}$
Clamping Voltage	V_C			16.5	V	$I_{PP} = 50\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_C			18.8	V	$I_{PP} = 100\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_C		21		V	$I_{PP} = 180\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	CJ		1450	1600	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

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

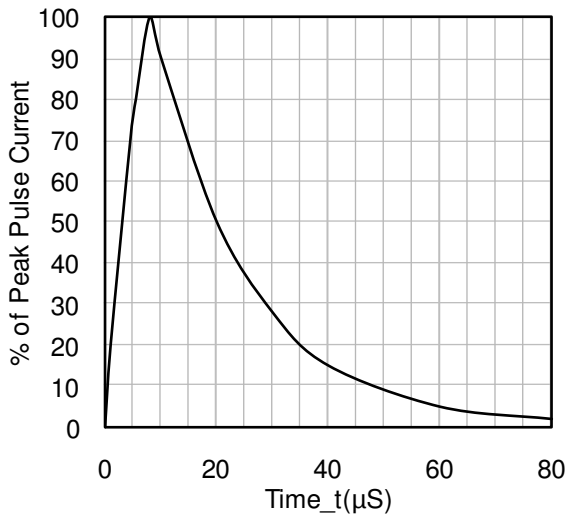


Fig1. (8 x 20 μs) Pulse Waveform

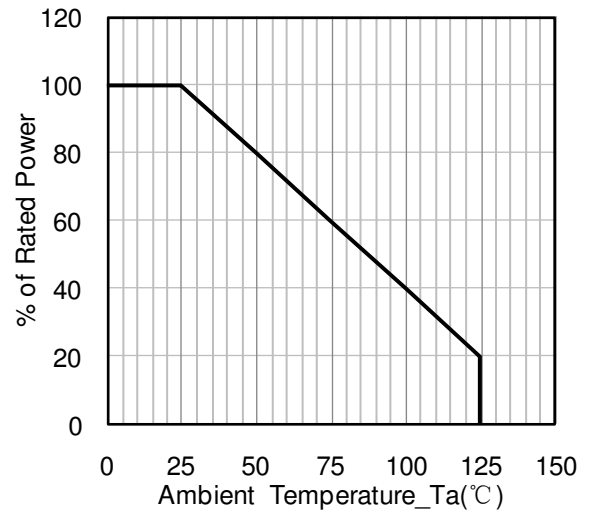


Fig2. Power Derating Curve

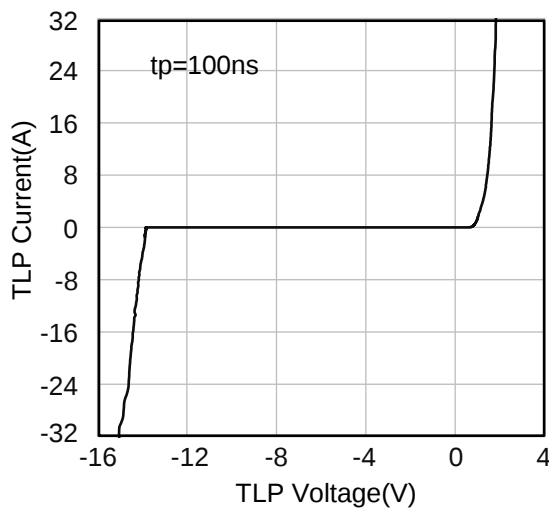


Fig3. TLP Measurement

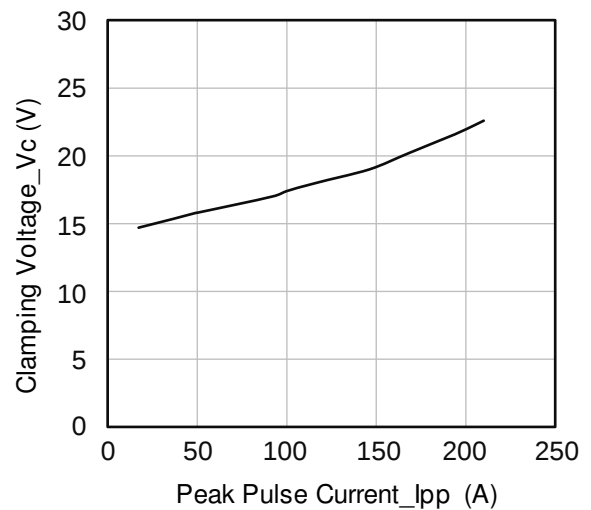
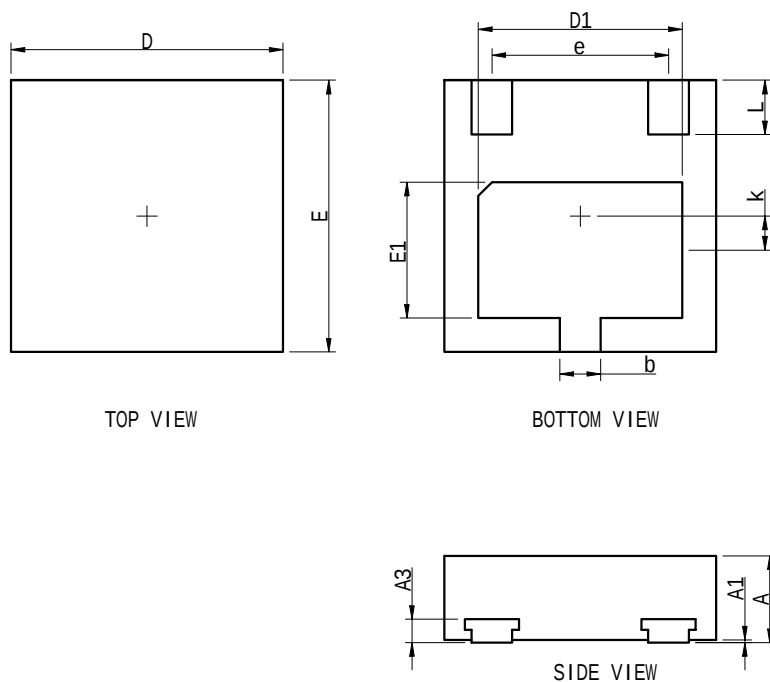


Fig4. Clamping Voltage vs. Peak Pulse Current

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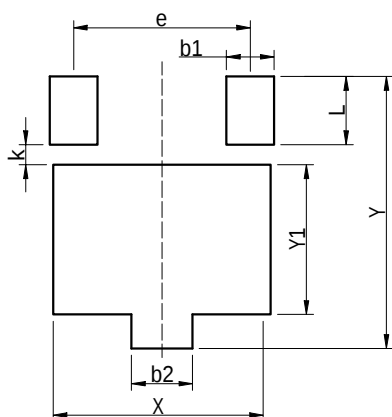
Package Outline Dimension

DFN2020-3



DFN2020-3			
Dim	Min.	Typ.	Max.
A	0.60	0.65	0.70
A1	0.00	0.02	0.05
A3	0.152REF.		
D	1.95	2.00	2.05
E	1.95	2.00	2.05
D1	1.45	1.50	1.55
E1	0.95	1.00	1.05
b	0.25	0.30	0.35
e	1.30TYP.		
k	0.20	0.25	0.30
L	0.35	0.40	0.45
All Dimensions in mm			

Suggested Pad layout



DFN2020-3	
Dim	(mm)
X	1.60
Y	2.00
b1	0.35
b2	0.45
L	0.50
Y1	1.10
k	0.15
e	1.30