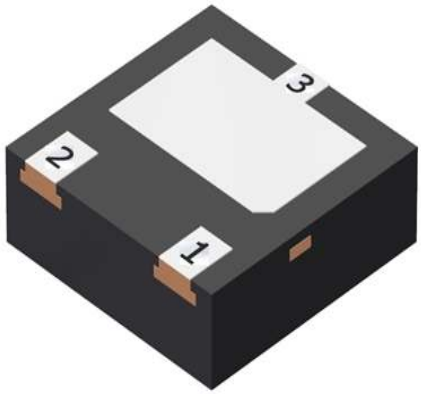
LTVS20H12ET5G

1-Line Uni-directional TVS Diode

LTVS20H12ET5G

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 ±30kV air and ±30kV 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.



DFN2020-3

Features

- Protects one data or power line
- Low clamping voltage
- Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV
- RoHS Compliant

Ordering information

Device	Marking	Shipping
LTVS20H12ET5G	ET	3000/Tape&Reel

Applications

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

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	4000	W
Peak Pulse Current (8/20μs)	Ipp	180	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}			12	V	
Breakdown Voltage	V_{BR}	12.8	13.8	14.5	V	I_R = 1mA
Reverse Leakage Current	I_R			1	μA	V_R= 12V
Forward Voltage	V_F		0.75	1.2	V	I_F = 10mA
Clamping Voltage	V_C			16.5	V	I_{PP} = 50A (8 x 20μs pulse)
Clamping Voltage	V_C			18.8	V	I_{PP} = 100A (8 x 20μs pulse)
Clamping Voltage	V_C		21		V	I_{PP} = 180A (8 x 20μs pulse)
Junction Capacitance	C_J		1450	1600	pF	V_R = 0V, f = 1MHz

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

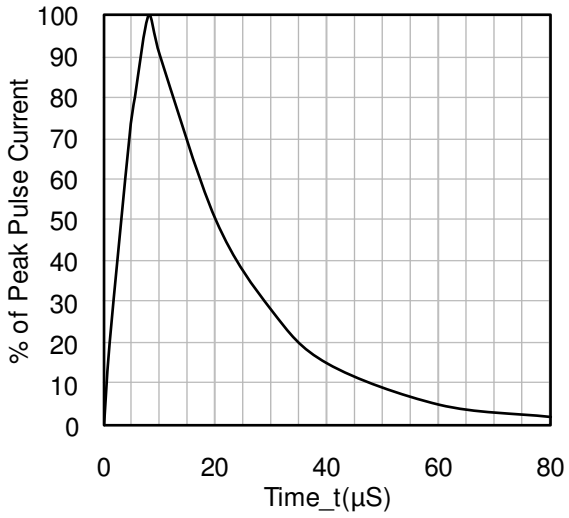


Fig1. (8 x 20μs)Pulse Waveform

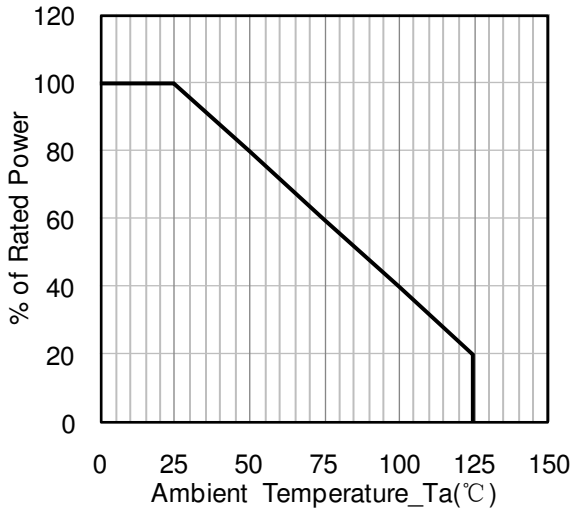


Fig2.Power Derating Curve

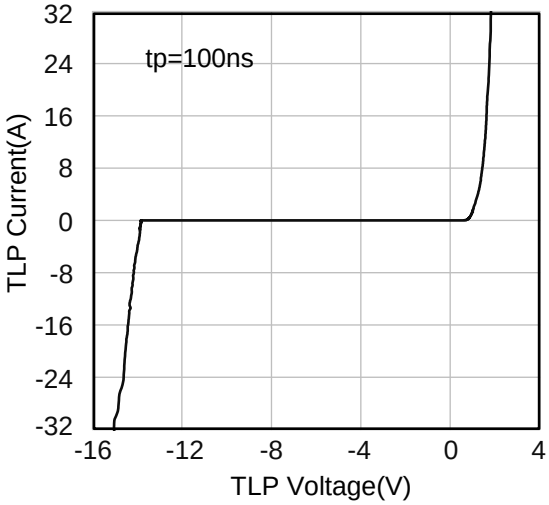


Fig3. TLP Measurement

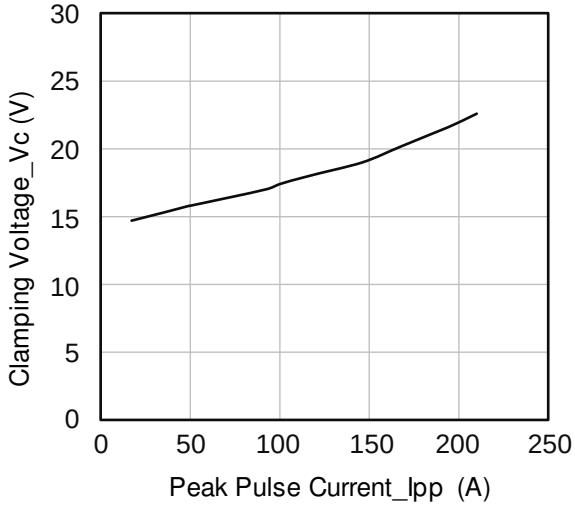
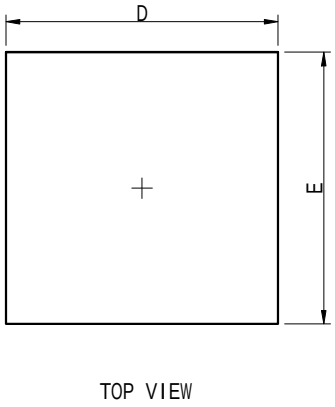


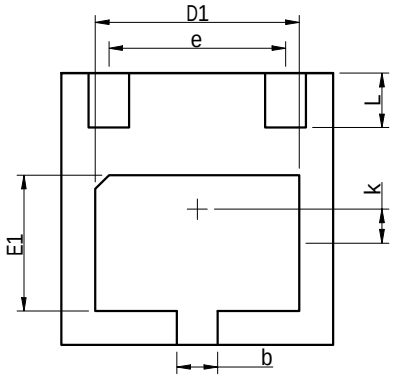
Fig4. Clamping Voltage vs.Peak Pulse Current

Package Outline Dimension

DFN2020-3

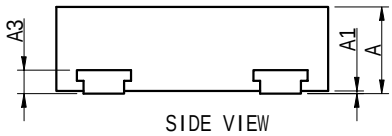


TOP VIEW



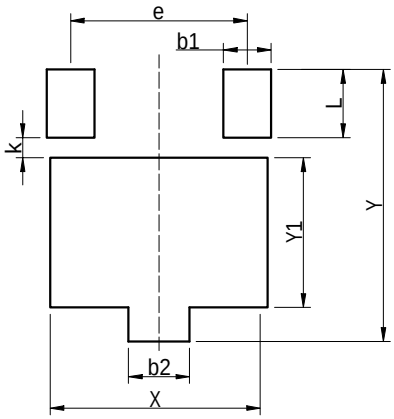
BOTTOM VIEW

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			



SIDE VIEW

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