TPD22V0S1U2LP20

1-Line Uni-directional High Power TVS Diode

Features

- Low operating voltage: 22V
- Ultra low leakage: nA level
- Low clamping voltage
- –IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV
  –IEC61000-4-5 (Lightning) 120A (8/20ns)
- 3-pin leadless package
- These are Pb−Free Devices
- Response Time is Typically < 1 ns

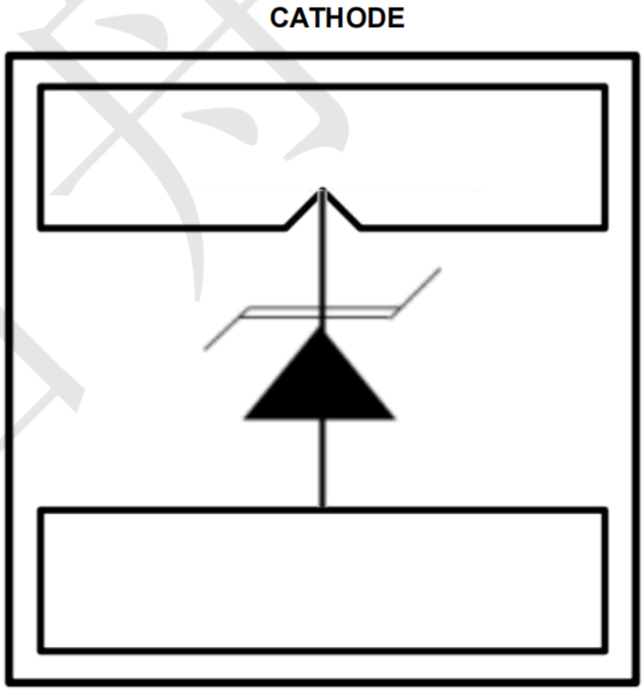
Mechanical Characteristics

- Package: DFN2X2-2
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

Applications

- Power Management
- Industrial Application
- Power Supply Protection
- Peripherals

Dimensions and Pin Configuration



DFN2X2-2

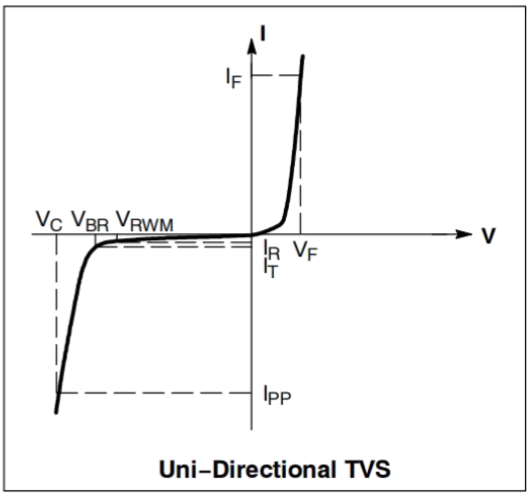
Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	7000	W
Peak Pulse Current (8/20μs)	Ipp	120	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	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	22	V	
Breakdown Voltage	VBR	24	--	30	V	IT= 1mA
Reverse Leakage Current	IR	--	0.01	1	uA	VRWM=22V
Forward voltage	VF	--	0.8	1.2	V	IF=10mA
Clamping Voltage	VC	--	--	50	V	Ipp=50A(8x 20us pulse)
Clamping Voltage	VC	--	--	60	V	Ipp=120A(8x 20us pulse)
Junction Capacitance	CJ	--	--	700	pF	VR = 0V, f = 1MHz

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Capacitance @ V_R = 0 and f = 1.0 MHz



Uni−Directional TVS

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

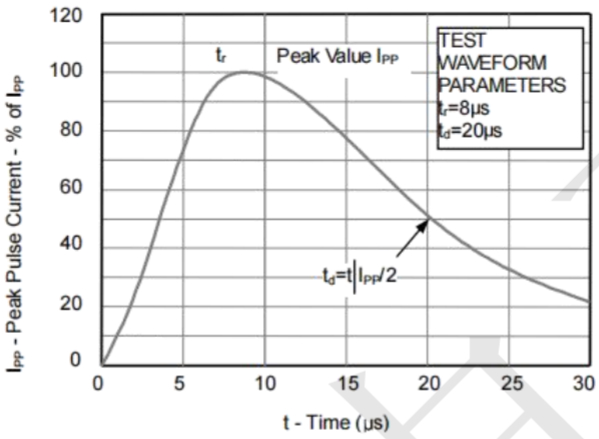


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

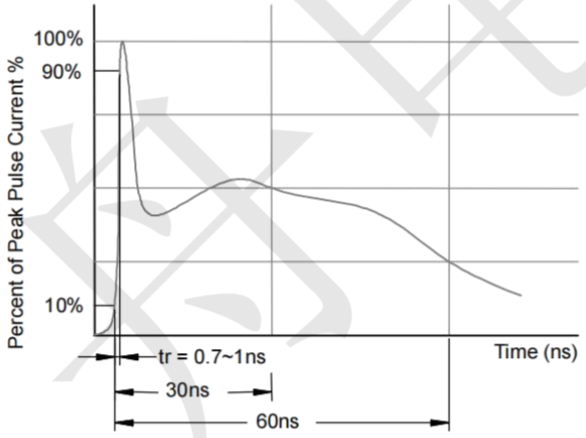
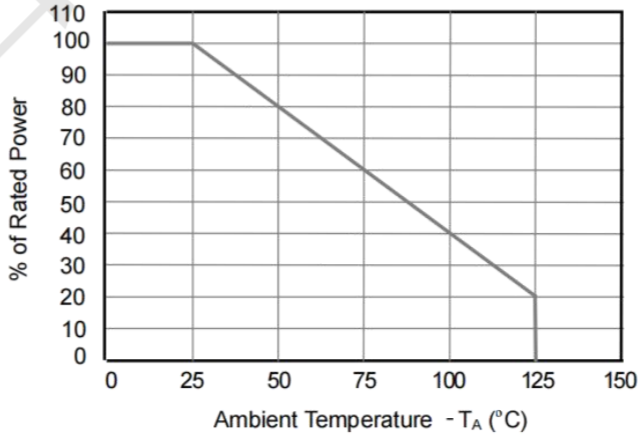
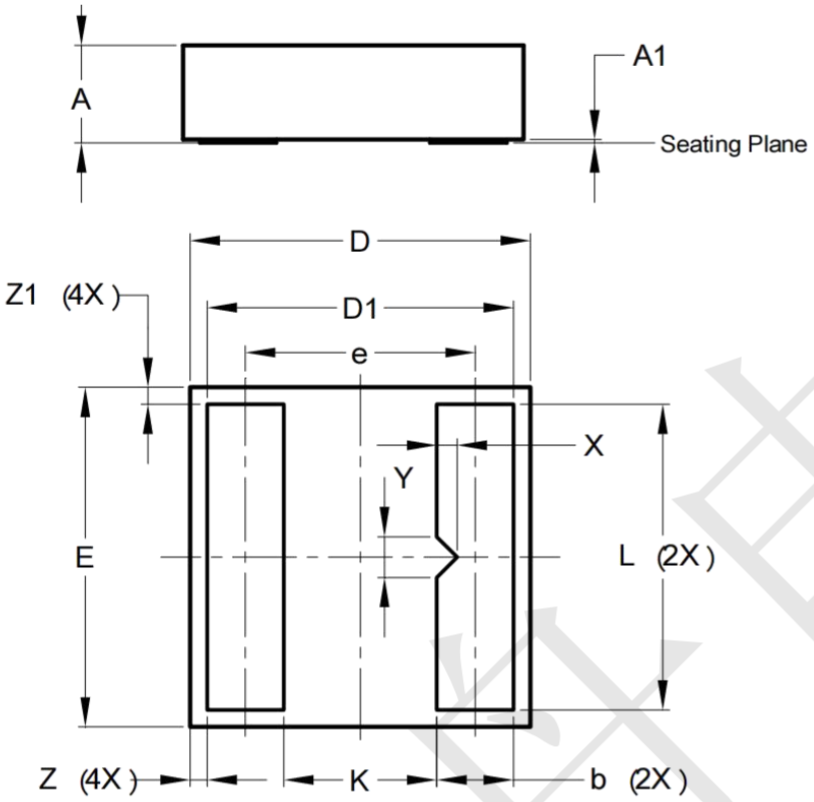


Fig3. Power Derating Curve



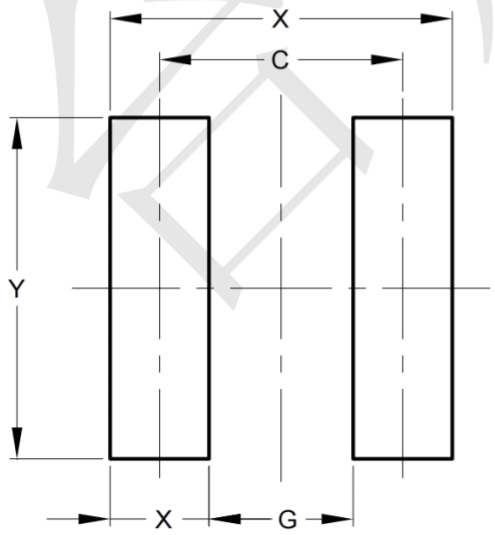
Package Outline Dimensions (unit: mm)

DFN2X2-2



DFN2X2-2			
Dim	Min	Max	Typ
A	0.545	0.605	0.575
A1	0	0.05	0.02
b	0.35	0.55	0.45
D	1.90	2.10	2.00
D1	1.70	1.90	1.80
E	1.90	2.10	2.00
e	1.35 BSC		
K	0.80	1.00	0.90
L	1.70	1.90	1.80
X	-	-	0.120
Y	-	-	0.240
Z	0.10 BSC		
Z1	0.10 BSC		
All Dimensions in mm			

Mounting Pad Layout (unit: mm)



Dimensions	Value (in mm)
C	1.350
G	0.800
X	0.550
X1	1.900
Y	1.900