

1-Line, Uni-directional, TVS Diode

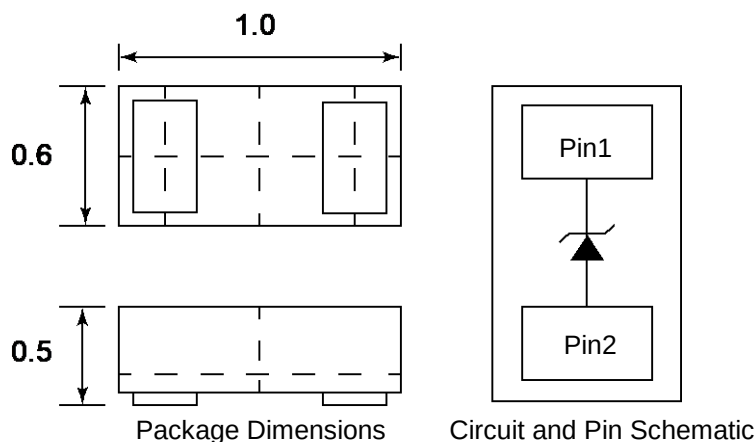
Description

The STVS6V3DNG2 is an uni-directional TVS diode, to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The STVS6V3DNG2 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 $1.0 \times 0.6 \times 0.5$ mm lead-free DFN package. The small size and high ESD protection make STVS6V3DNG2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Ultra small package: $1.0 \times 0.6 \times 0.5$ mm
- Protects one data or power line
- Working voltage: 6.3 V
- 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: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 40A (8/20 μs)
- RoHS Compliant

Dimensions and Pin Configuration



Mechanical Characteristics

- Package: DFN1006-2 ($1.0 \times 0.6 \times 0.5$ mm)
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Ordering Information

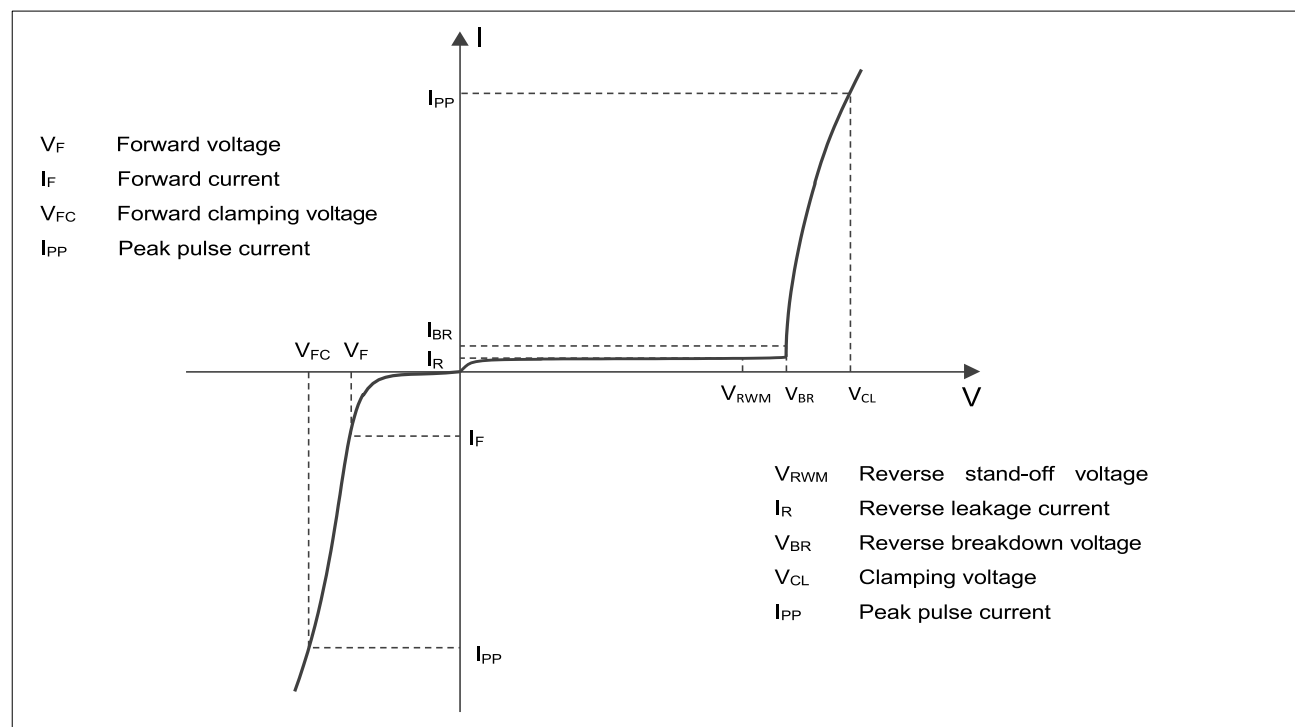
Part Number	Shipping	Reel Size
STVS6V3DNG2	10000/Tape & Reel	7 inch

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

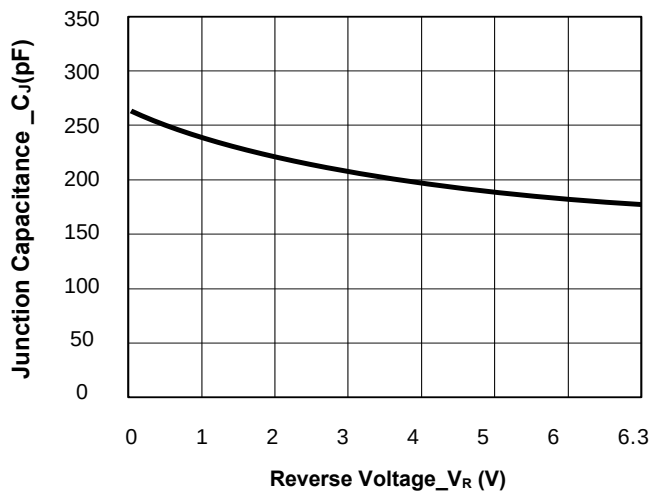
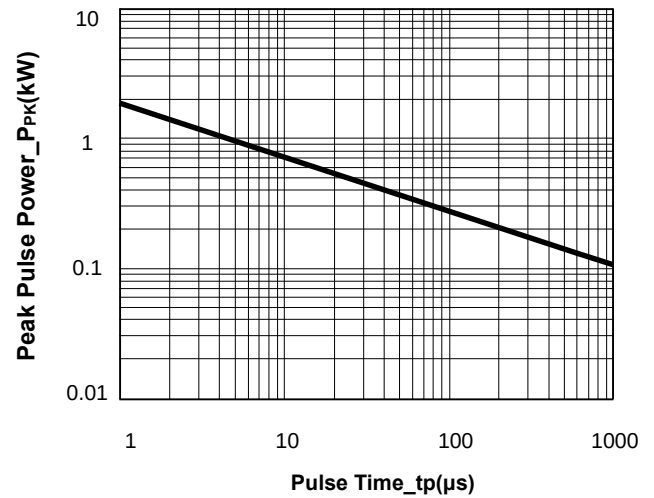
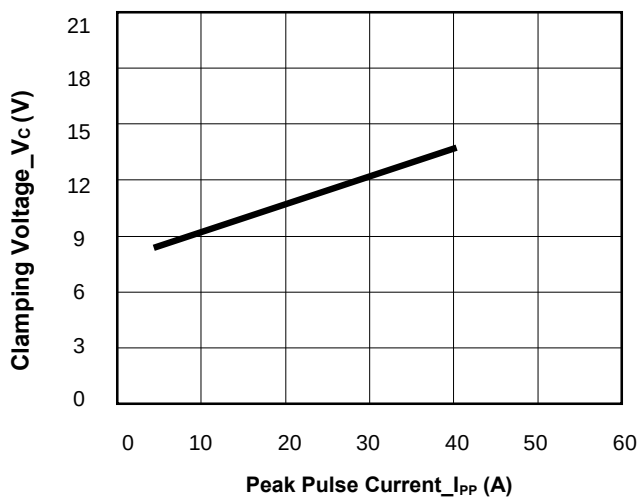
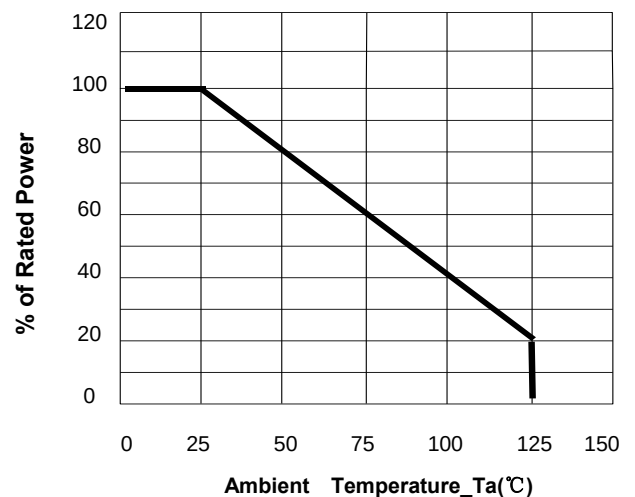
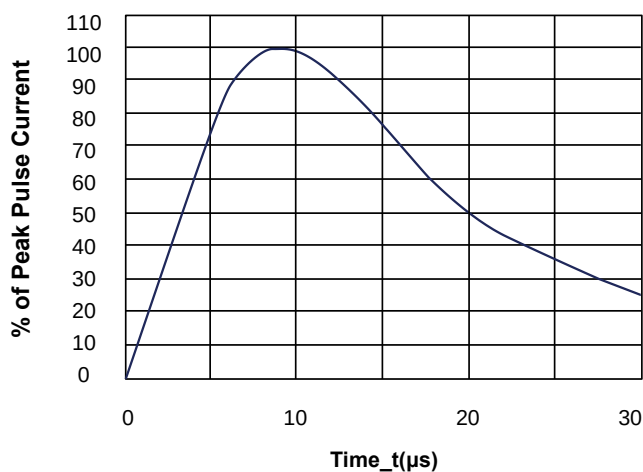
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{pk}	560	W
Peak Pulse Current (8/20μs)	I _{PP}	40	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Lead temperature	T _L	260	°C
Junction Temperature	T _J	125	°C
Operating Temperature Range	T _{OP}	-40 ~ +125	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			6.3	V	
Breakdown Voltage	V _{BR}	7		9.5	V	I _T = 1mA,
Reverse Leakage Current	I _R			1	μA	V _{RWM} = 6.3V
Forward Voltage	V _F			1.1	V	I _F = 10mA
Clamping Voltage	V _C			9	V	I _{PP} = 5A (8/20μs pulse),
Clamping Voltage	V _C			14	V	I _{PP} = 40A (8/20μs pulse),
Junction Capacitance	C _J		260		pF	V _R = 0V, f = 1MHz

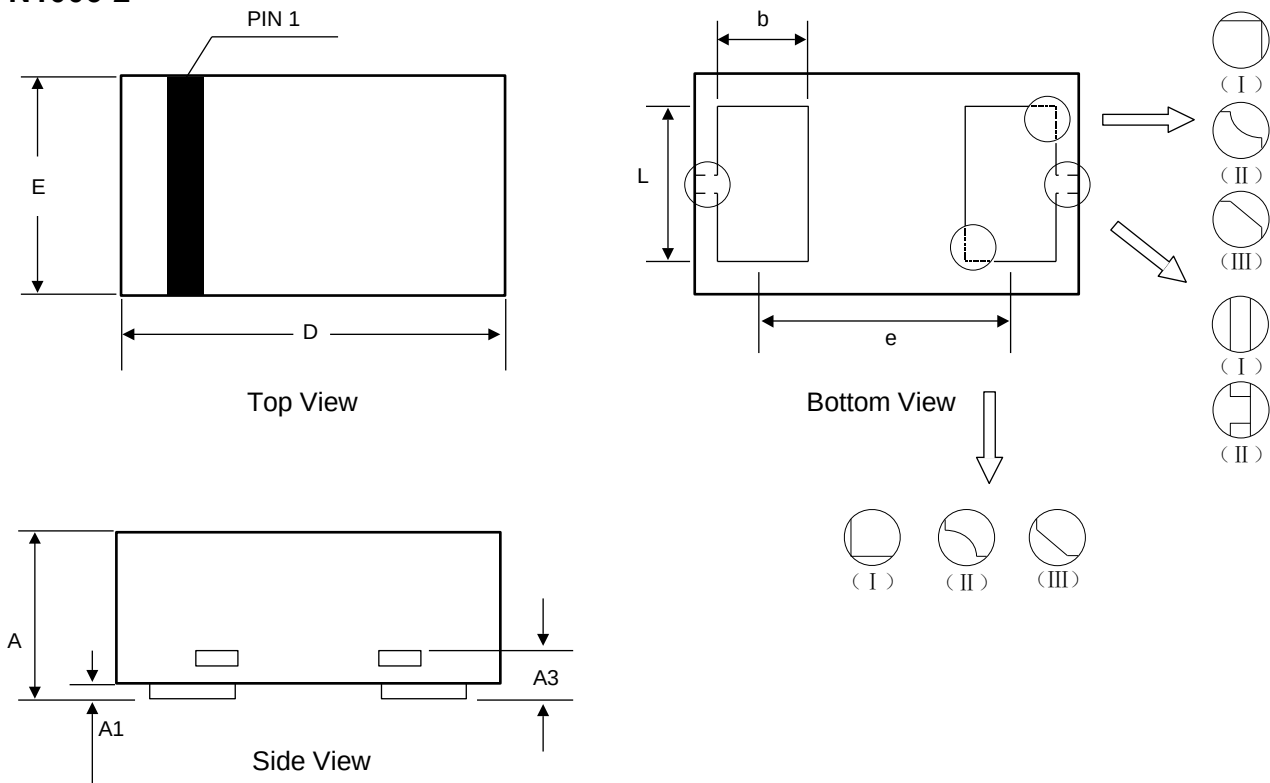
Electrical characteristics ($T_A = 25^\circ\text{C}$, unless otherwise noted)


Definitions of electrical characteristics

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

Junction Capacitance vs. Reverse Voltage

Peak Pulse Power vs. Pulse Time

Clamping Voltage vs. Peak Pulse Current

Power Derating Curve

8/20μs Pulse Waveform

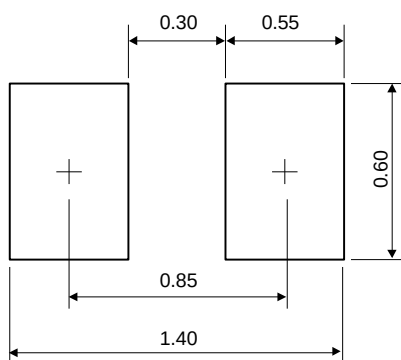
Package Outline Drawing

DFN1006-2



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.340	0.450	0.550
A1	0.000	0.020	0.050
A3	0.125 Ref.		
D	0.950	1.000	1.075
E	0.490	0.600	0.675
b	0.200	0.250	0.300
L	0.450	0.500	0.550
e	0.650 BSC		

Recommended PCB Layout (Unit: mm)

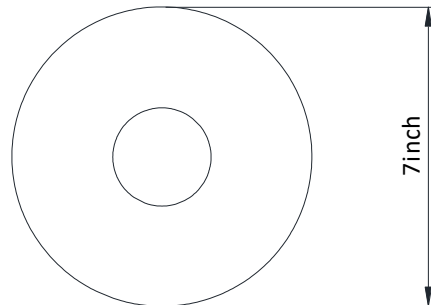


Notes:

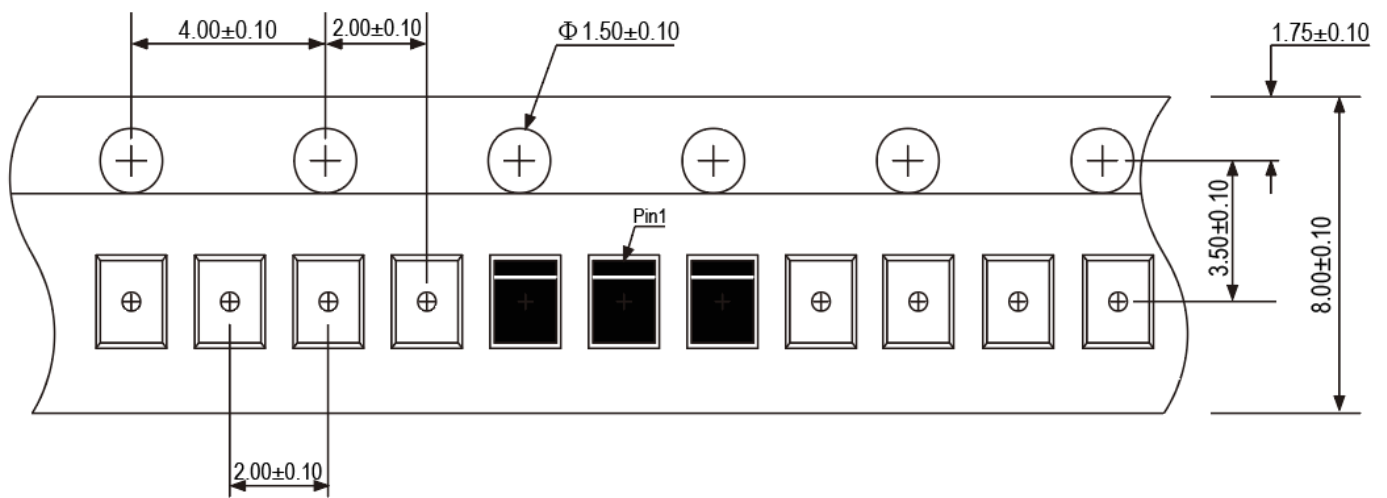
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

TAPE AND REEL INFORMATION

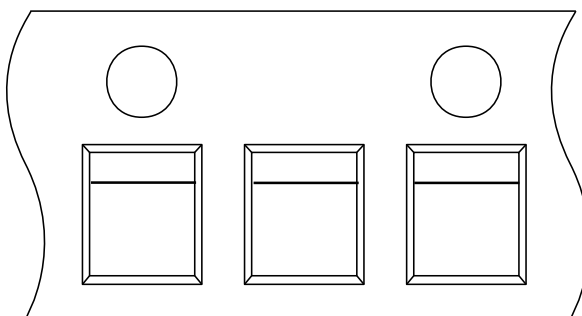
Reel Dimensions



Tape Dimensions



Unit:mm



→
User Direction of Feed