

Product Summary

The GESDBY5V0Y1P is designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in digital cameras, cellular phones, MP3 players and many other portable applications where board space is at a premium.

Feature

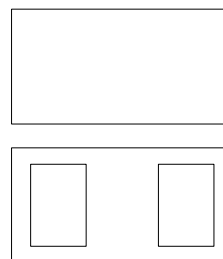
- Low reverse stand-off voltage: 5.5V Max.
- Low capacitance (<0.28pF) for high-speed interfaces
- No insertion loss to 10.0GHz
- Low leakage current
- Fast response time
- IEC 61000-4-2 Level 4 ESD protection

Application

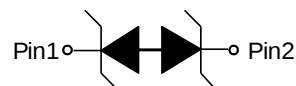
- High Speed Line :USB1.0/2.0/3.0/3.1,VGA,DVI,SDI,
- High Definition Multi-Media Interface (HDMI1.3/1.4/2.0)
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Cellular handsets and accessories

Marking: S

DFN1006-2L



Schematic diagram



Absolute Maximum Ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage Air Model	$V_{\text{ESD}}^{1)}$	± 20	kV
IEC 61000-4-2 ESD Voltage Contact Model		± 20	
ESD Voltage Per Human Body Model		± 8	
ESD Voltage Machine Model		± 0.4	
Peak Pulse Power	$P_{\text{PP}}^{2)}$	45	W
Peak Pulse Current	$I_{\text{PP}}^{2)}$	4	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~ +150	$^{\circ}\text{C}$

- 1) Device stressed with ten non-repetitive ESD pulses.
- 2) Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

ESD standards compliance

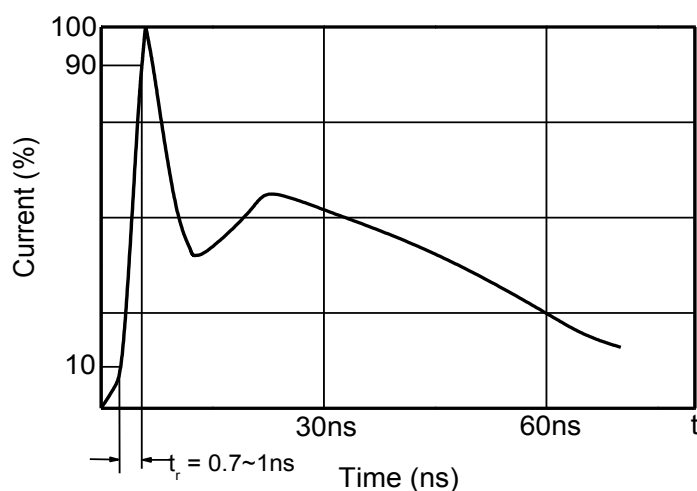
IEC61000-4-2 Standard

Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

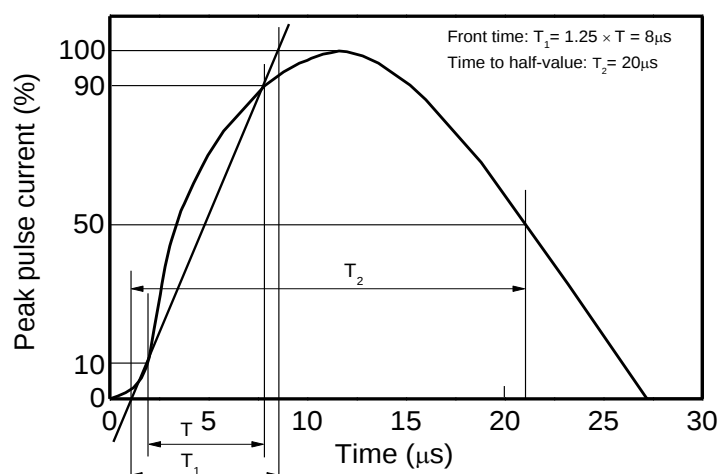
JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999

Contact discharge current waveform per IEC61000-4-2

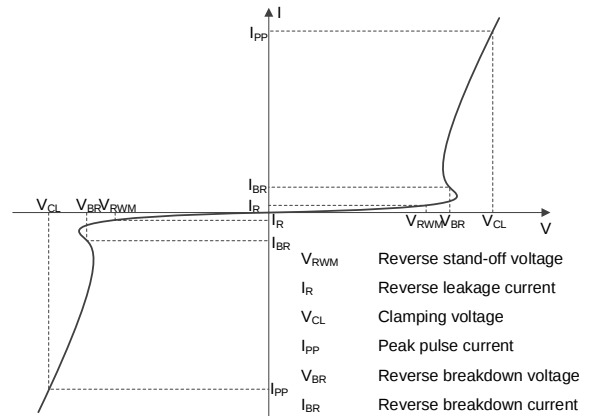


8/20 μs waveform per IEC61000-4-5



Electrical Parameter

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_{BR}
I_{BR}	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage



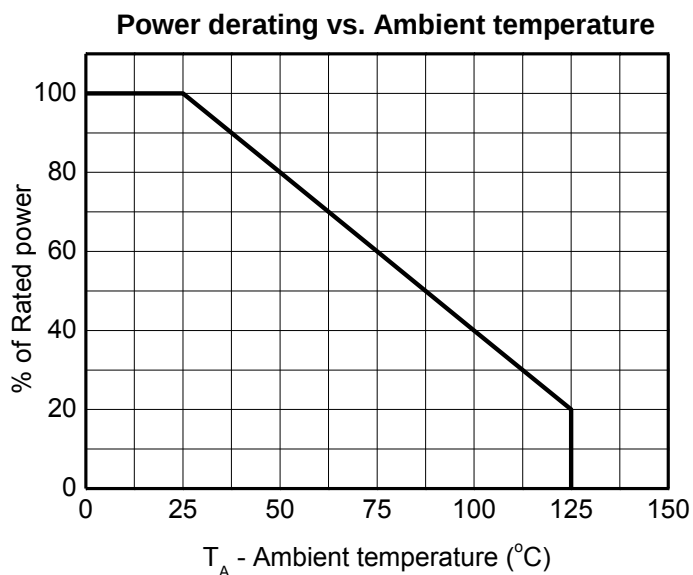
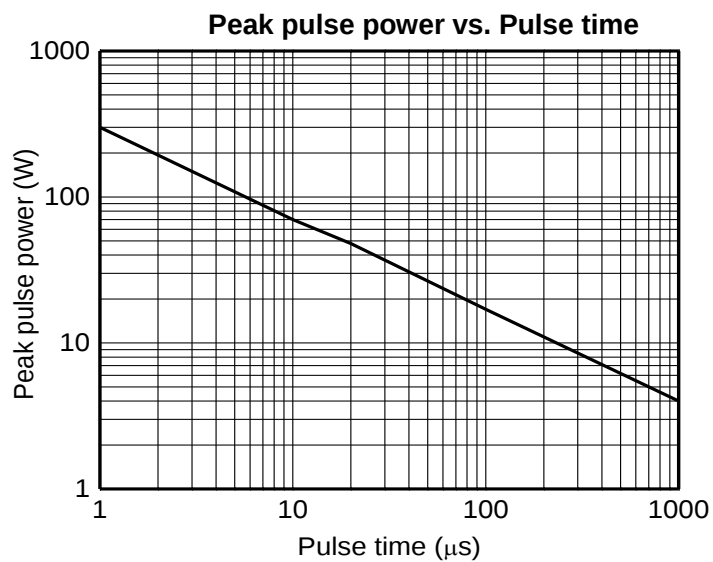
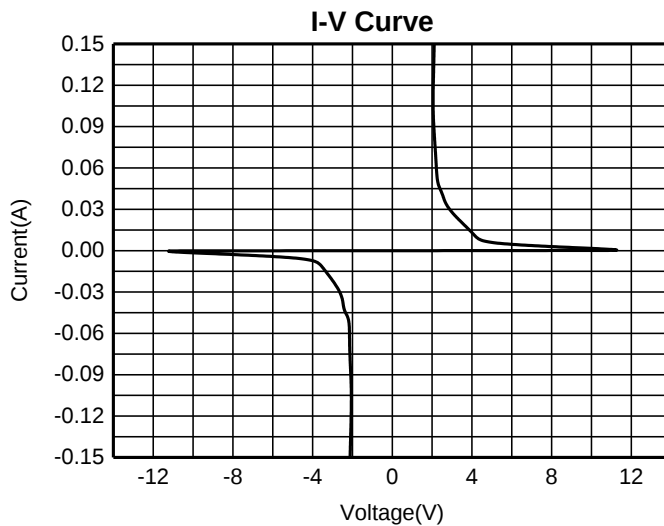
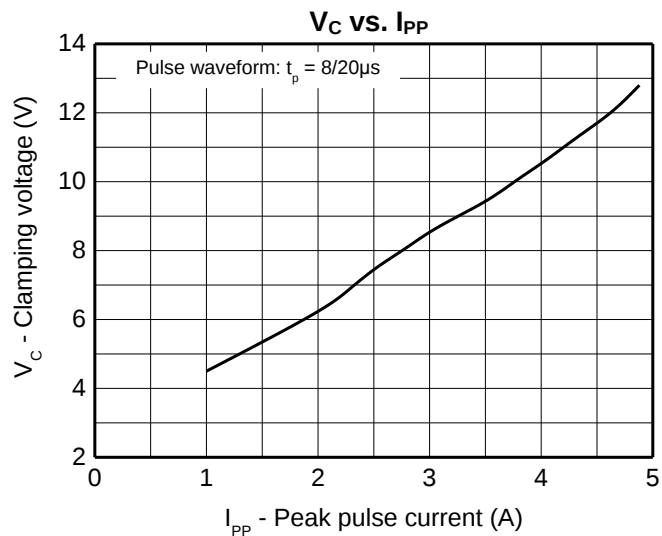
V-I characteristics for a Bi-directional TVS

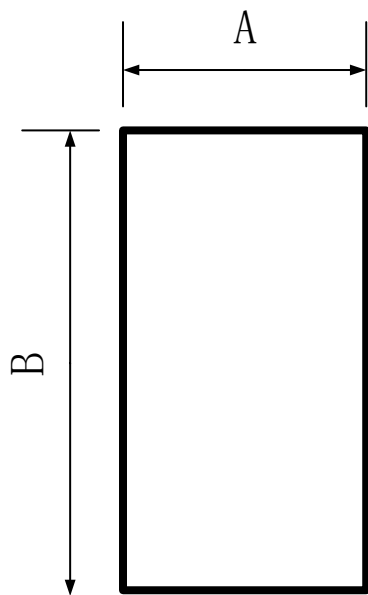
Electrical Characteristics ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse standoff voltage	V_{RWM}				5.5	V
Reverse leakage current	I_R	$V_{RWM}=5.5\text{V}$		0.001	0.1	μA
Breakdown voltage	$V_{BR}^{1)}$	$I_T=0.1\text{mA}$	6			V
Clamping voltage	V_{C1}	$I_{PP}=1\text{A}$		4.5	9.8	V
	V_{C2}	$I_{PP}=4\text{A}$			13	V
Dynamic resistance	R_{dys}			0.46		Ω
Junction capacitance	C_J	$V_R=1\text{V}, f=1\text{MHz}$		0.18	0.35	pF
		$V_R=1\text{V}, f=1\text{GHz}$		0.16	0.28	pF

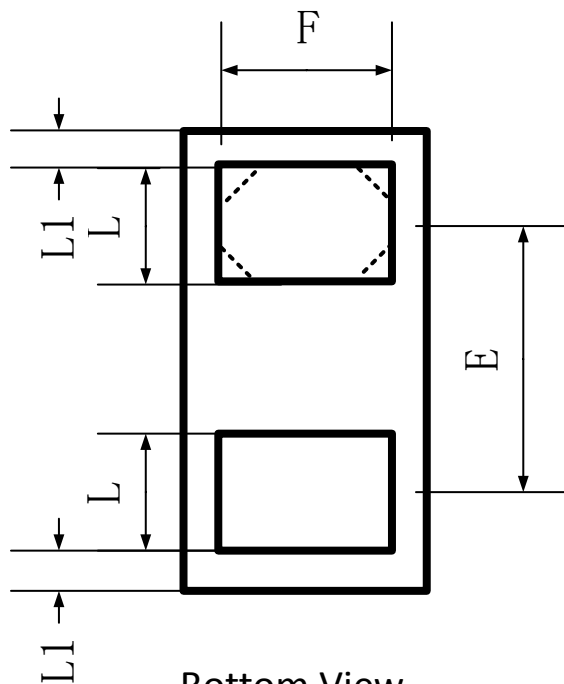
1) V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C

Typical Characteristics

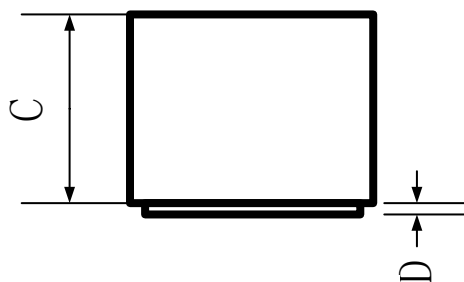


DFN1006-2L Package Outline Dimensions


Top View



Bottom View



Side View

	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.55	0.60	0.68
B	0.95	1.00	1.08
C	0.44	0.47	0.50
D	0.00	0.03	0.05
E	-	0.65	-
F	0.40	0.50	0.60
L	0.20	0.25	0.30
L1	0.05REF		