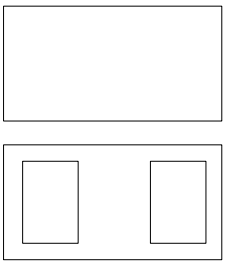
GESDBU3V3Y2

Bi-direction Transient Voltage Suppressors

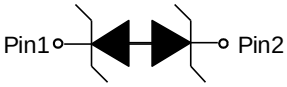
Product Summary

The GESDBU3V3Y2 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.

DFN1006-2L



Schematic diagram



Feature

- Low reverse stand−off voltage: 3.3V Max.
- Low leakage current
- Fast response time
- Low capacitance (<0.3pF) for high-speed interfaces
- No insertion loss to 10.0GHz
- ESD Rating of Class 3(>16kV) Per Human Body Model
- IEC 61000-4-2 Level 4 ESD protection

Application

- Digital cameras
- Portable applications
- Audio and video equipment
- MP3 players
- Mobile phone

Marking: S

Absolute Maximum Ratings (T_a=25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage	Air Model	V_{ESD}[1]	±20	kV
IEC 61000-4-2 ESD Voltage	Contact Model		±20	
ESD Voltage	Per Human Body Model		±16	
ESD Voltage	Machine Model		±0.4	
Peak Pulse Power		P_{PP}[2]	60	W
Peak Pulse Current		I_{PP}[2]	4	A
Lead Solder Temperature − Maximum (10 Second Duration)		T_L	260	℃
Junction Temperature		T_j	-55~ +150	℃
Storage Temperature		T_{stg}	-55~ +150	℃

1) Device stressed with ten non-repetitive ESD pulses.

2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

ESD standards compliance

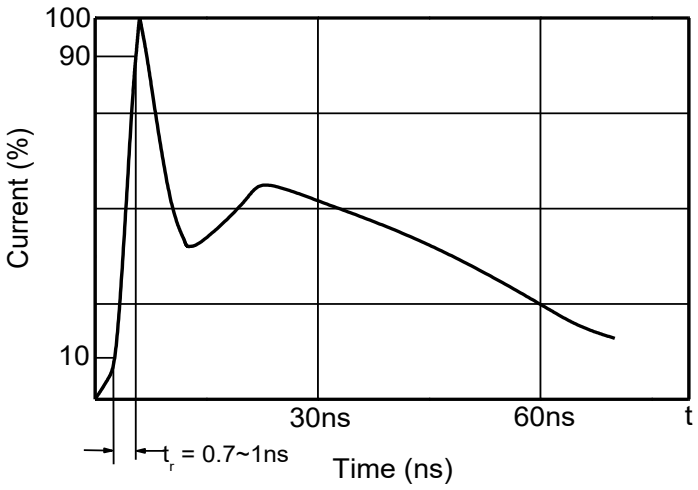
IEC61000-4-2 Standard

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

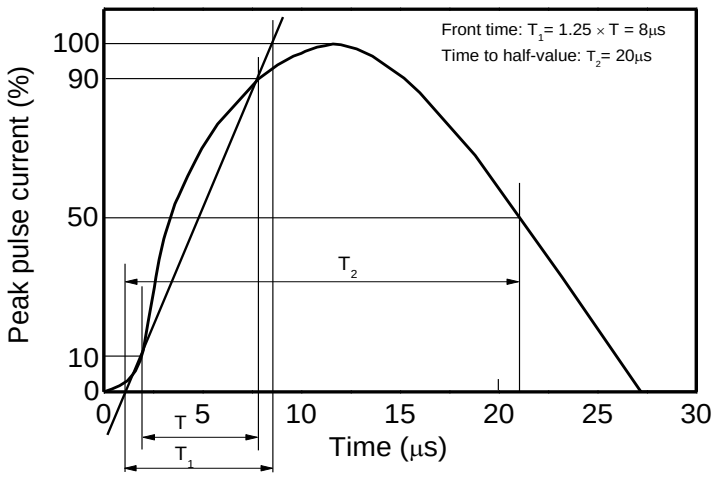
JESD22-A114-B Standard

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

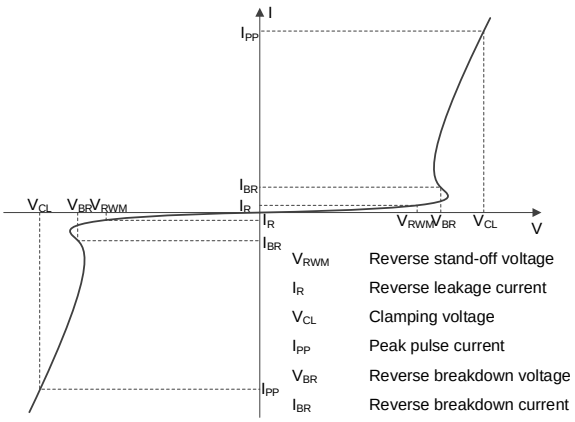


8/20μs waveform per IEC61000-4-5



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

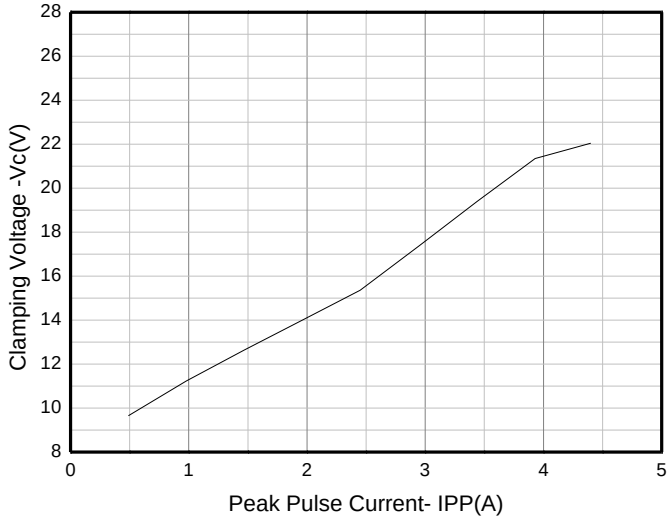
Electrical Characteristics (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse standoff voltage	V_{RWM}				3.3	V
Reverse leakage current	I_R	V_{RWM}=3.3V			1.0	μA
Breakdown voltage	V_{BR} 1)	I_T=1mA	4.6		10	V
Clamping voltage	V_C	I_{PP}=1A (8/20μs pulse)		11	15	V
		I_{PP}=4A (8/20μs pulse)		21	27	V
Dynamic Resistance	Rdyn			0.83		Ω
Junction capacitance	C_J	V_R=0V,f=1MHz		0.15	0.3	pF

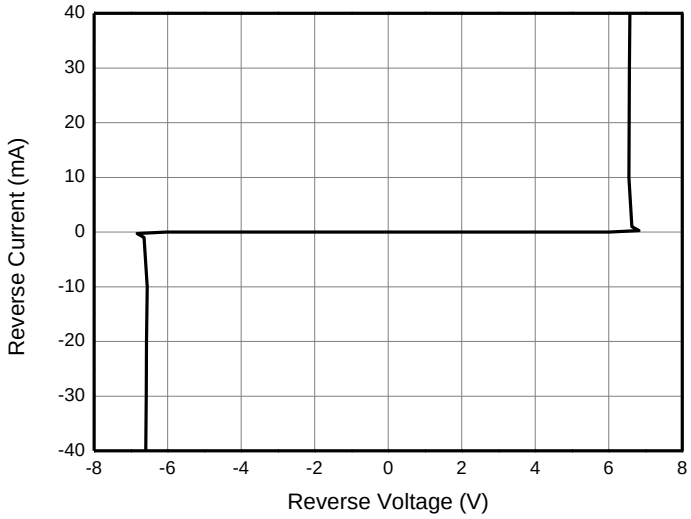
1) V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25℃

Typical Characteristics

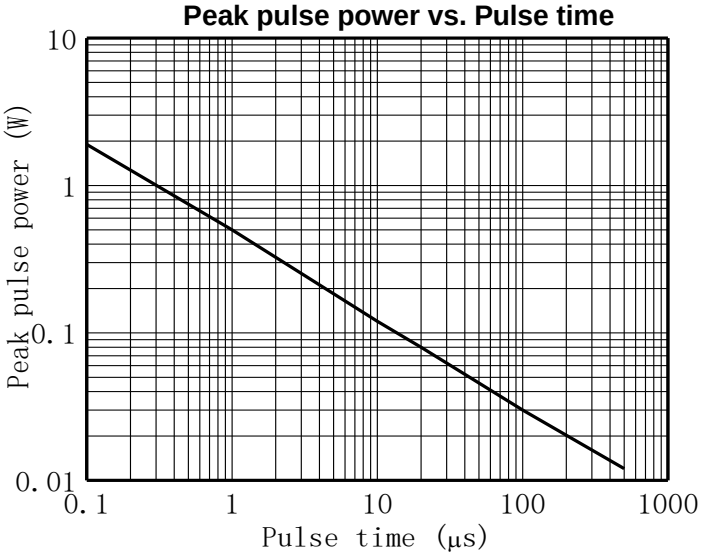
V_C vs. I_{PP}



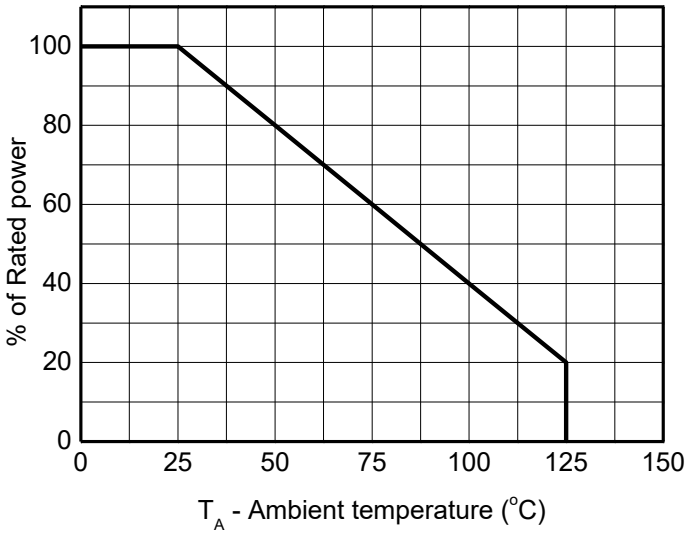
I-V Curve



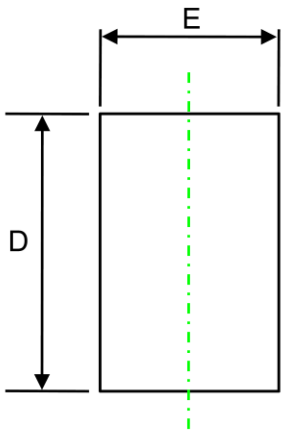
Peak pulse power vs. Pulse time



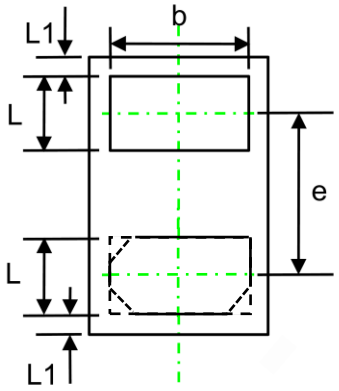
Power derating vs. Ambient temperature



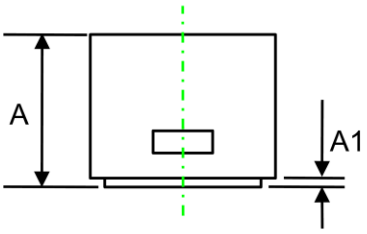
DFN1006-2L Package Outline Dimensions



TOP VIEW
［顶视图］



BOTTOM VIEW
［底视图］



SIDE VIEW
［侧视图］

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.400	0.550	0.016	0.022
A1	0.000	0.050	0.000	0.002
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
b	0.400	0.600	0.016	0.024
e	0.65 TYP		0.026 TYP	
L1	0.05 REF		0.002 REF	
L	0.200	0.300	0.008	0.012