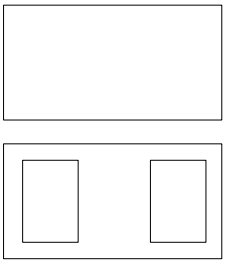
GESDBT5V0Y1

Bi-direction Transient Voltage Suppressors

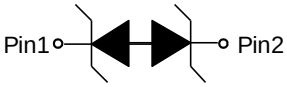
Product Summary

The GESDBT5V0Y1 is a bi-directional TVS (Transient Voltage Suppressor). It is specifically designed to protect sensitive electronic components that may be subjected to ESD(Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. It is particularly well-suited for cellular phones, portable device, digital cameras, power supplies and many other portable applications because of its small package and low weight.

DFN1006-2L



Schematic diagram



Feature

- Low Reverse Stand−Off Voltage: 5V Max.
- IEC61000-4-2 (ESD): ±30KV Air, ±30KV Contact
- IEC61000-4-5 (Surge): 100A (8/20μs)
- Solid-State Silicon Technology
- Low Leakage Current

Application

- Cell Phone Handsets and Accessories
- Personal Digital Assistants(PDAs)
- Notebooks, Desktops, and Serves
- Portable Instrumentation
- Digital Cameras

Marking: V5

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

Parameter		Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage	Air Model	V_{ESD} 1)	±30	kV
IEC 61000-4-2 ESD Voltage	Contact Model		±30	
Peak Pulse Power		P_{PP} 2)	1600	W
Peak Pulse Current		I_{PP} 2)	100	A
Lead Solder Temperature − Maximum (10 Second Duration)		T_L	260	℃
Junction Temperature		T_J	+125	℃
Storage Temperature		T_{STG}	-55~ +150	℃
Operating Temperature		T_{OP}	-40~+125	℃

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

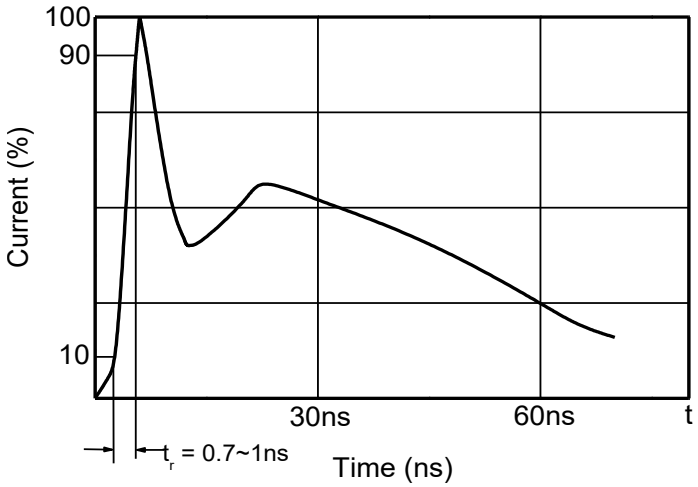
IEC61000-4-2 Standard

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

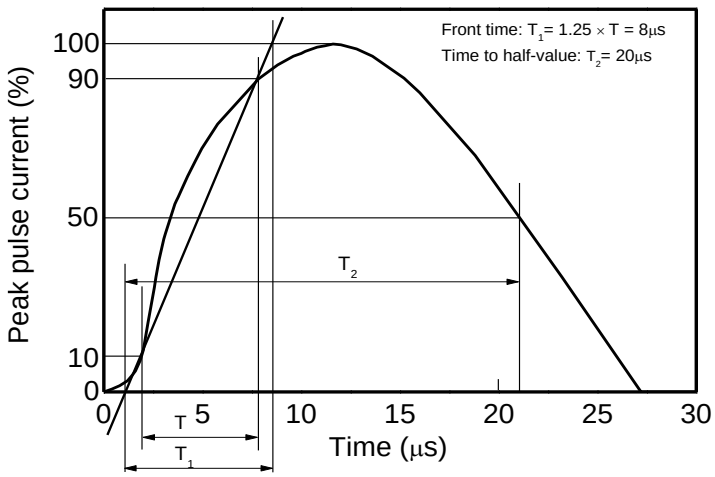
JESD22-A114-B Standard

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

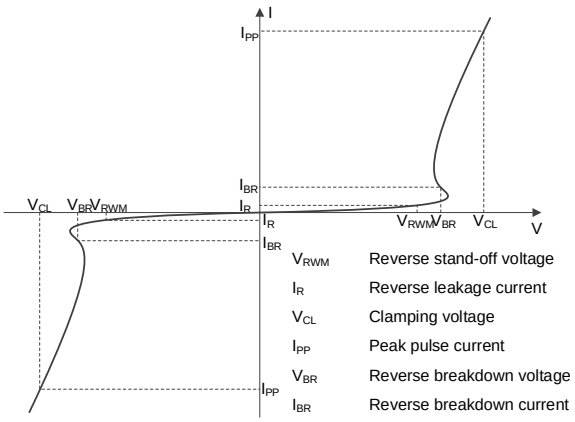


8/20μs waveform per IEC61000-4-5



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}[1)]				5.0	V
Reverse Leakage Current	I_R	V_{RWM}=5V			0..5	μA
Breakdown Voltage	V_{BR}	I_T=1mA	5.5	6.5	7.5	V
Clamping Voltage	V_C[2)]	I_{PP}=1A			7.8	V
		I_{PP}=40A			9.0	V
		I_{PP}=100A		9.5	13	V
Junction Capacitance	C_J	V_R=0V,f=1MHz		200	300	pF

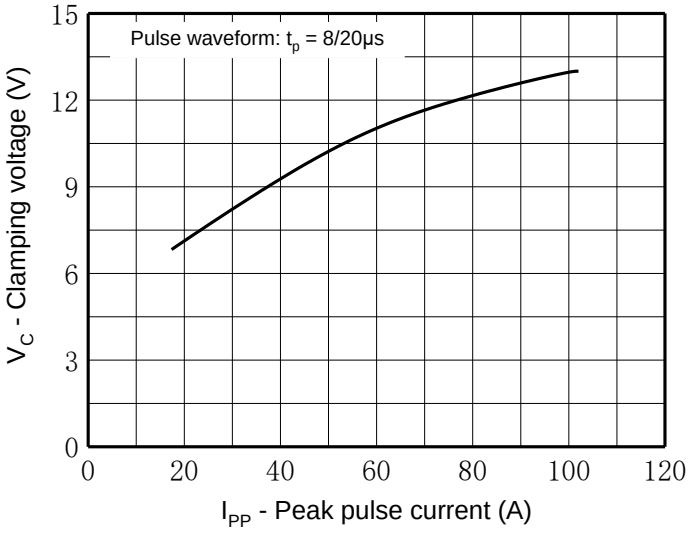
Note：

1) Other voltages available upon request.

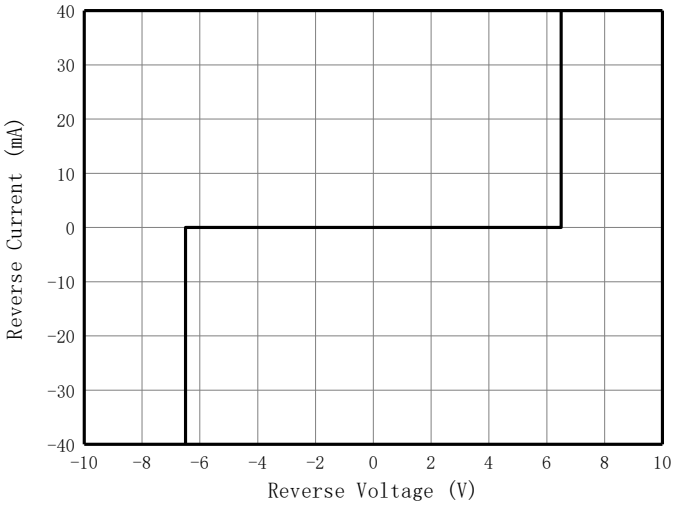
2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

Typical Characteristics

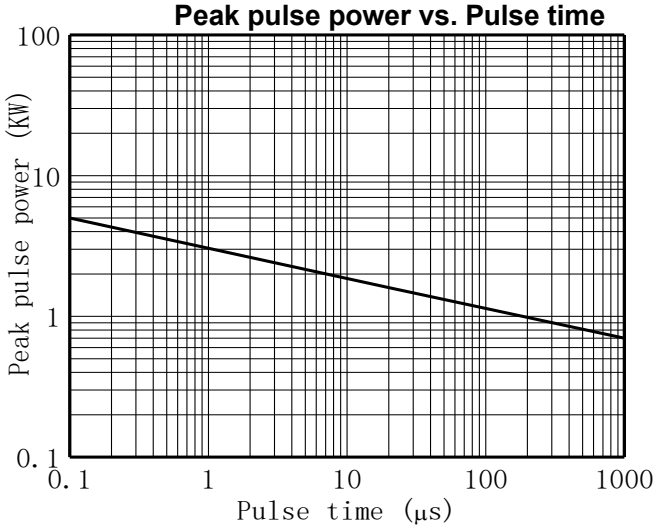
V_C vs. I_{PP}



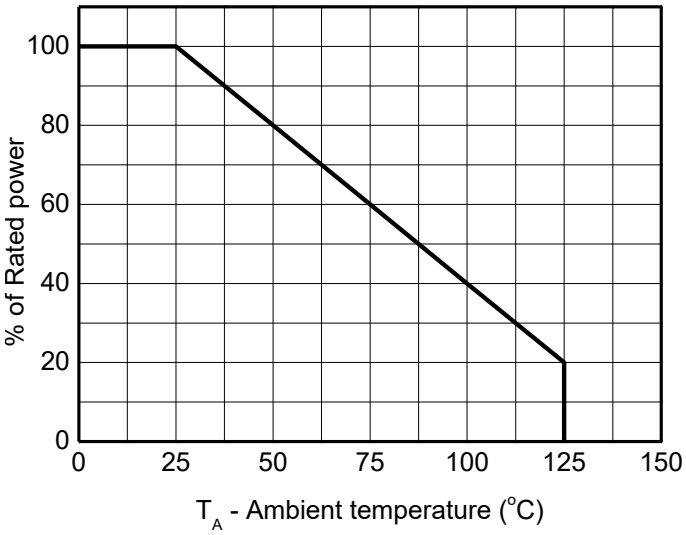
I-V Curve



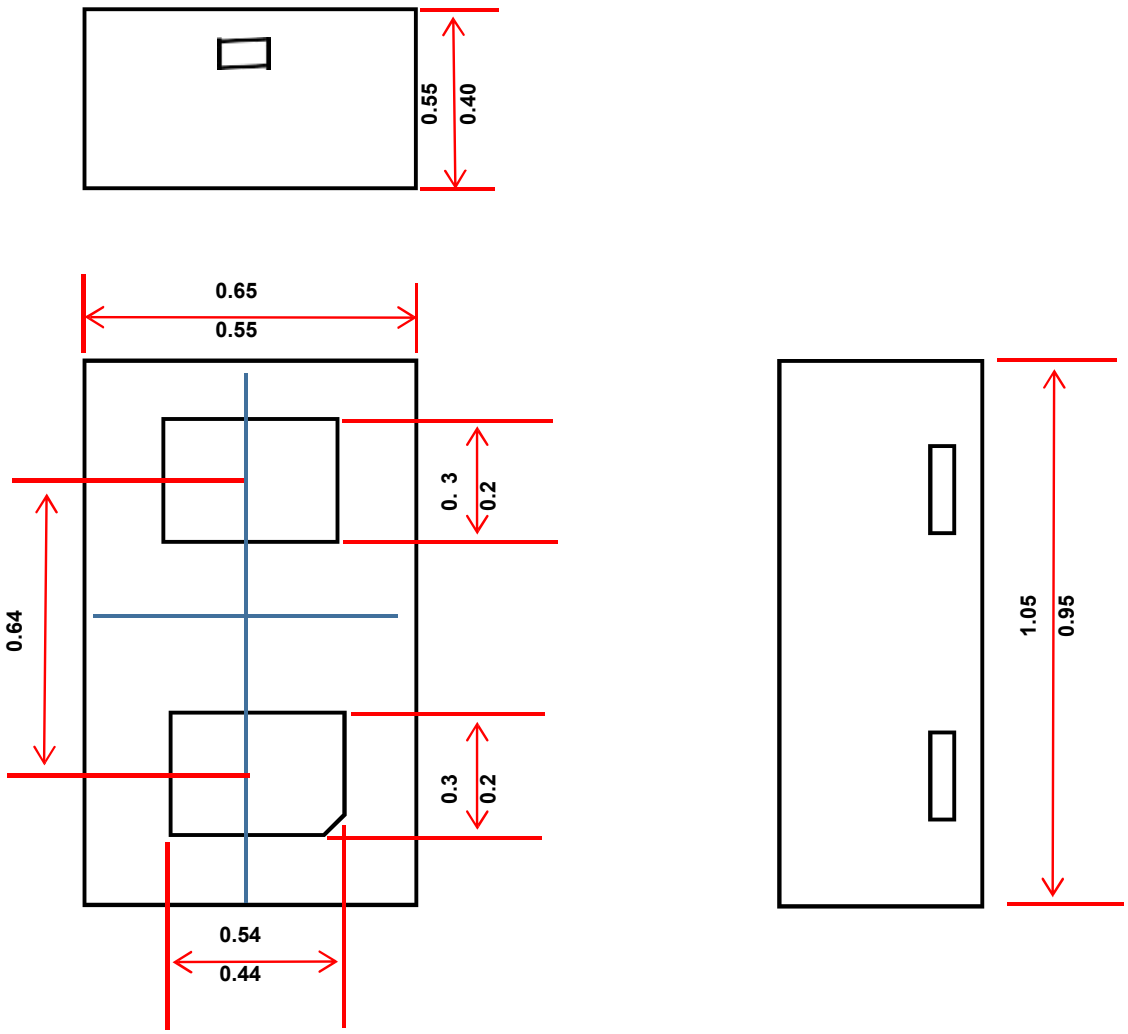
Peak pulse power vs. Pulse time



Power derating vs. Ambient temperature



DFN1006-2L Package Outline Dimensions



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- Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
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