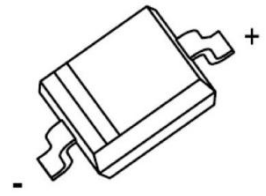
GESDQ5V0D31

Uni-direction Transient Voltage Suppressors

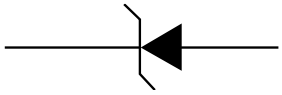
Product Summary

The GESDQ5V0D31 is a uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line.

SOD-323



Schematic Diagram



Feature

- IEC61000-4-4(EFT):40A(5/50ns)
- IEC61000-4-5(Surge): 16A(8/20us)
- Line capacitance:110pF@1MHz
- Very low reverse current: I_R<0.2uA(typical)

Application

- Cellular phones
- Portable devices
- Digital cameras
- Player
- Smart home
- Robot

Marking: N2

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)]	190	W
Peak Pulse Current		I_{PP}[2)]	16	A
Operating Temperature		T_J	-50~ +125	℃
Storage Temperature		T_{STG}	-55~ +150	℃

Notes:

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

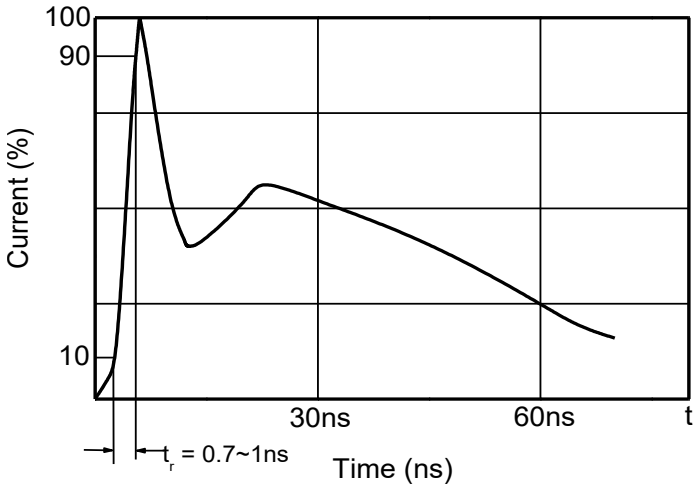
IEC61000-4-2 Standard

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

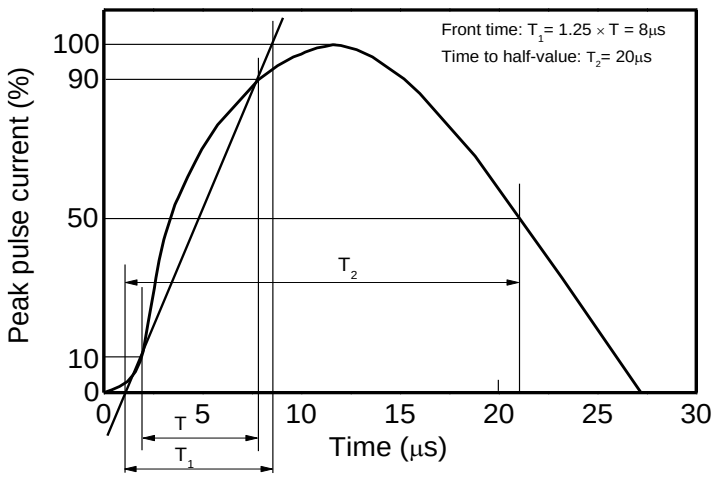
JESD22-A114-B Standard

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

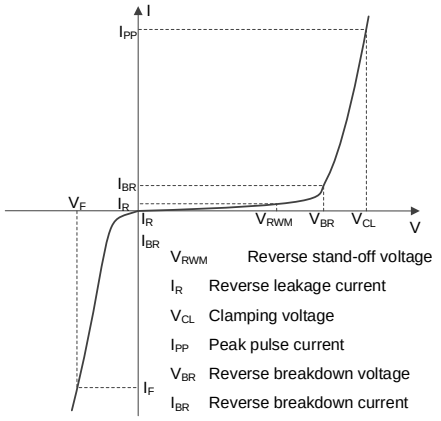


8/20μs waveform per IEC61000-4-5



Electrical Parameter

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



V-I characteristics for a Uni-directional TVS

Electrical Characteristics (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	V_{RWM}[1)]				5.0	V
Reverse Leakage Current	I_R	V_{RWM}=5.0V			0.2	uA
Breakdown Voltage	V_{BR}	I_T=1mA	6			V
Clamping Voltage	V_C[2)]	I_{PP}=1A		8	9	V
		I_{PP}=16A			12	V
Junction Capacitance	C_J	V_R=0V,f=1MHz		110		pF

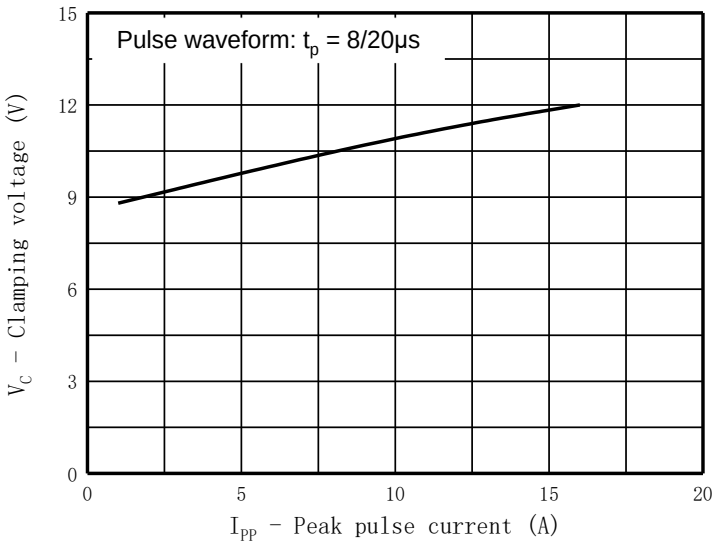
Notes:

1) Other voltages available upon request.

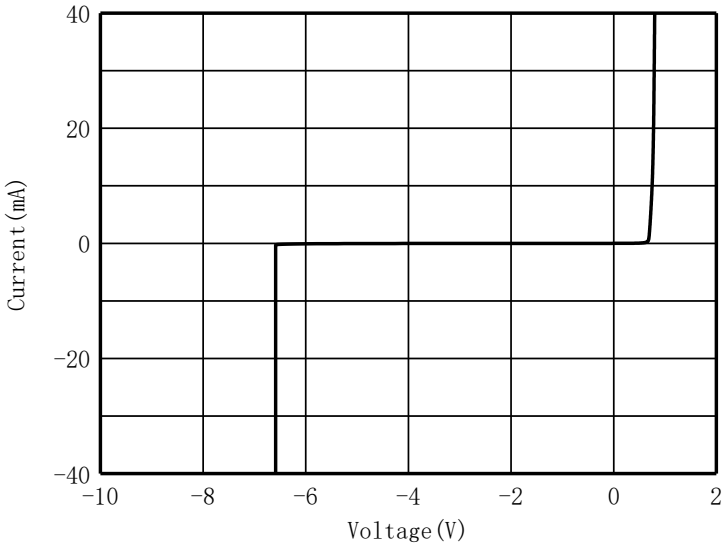
2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

Typical Characteristics

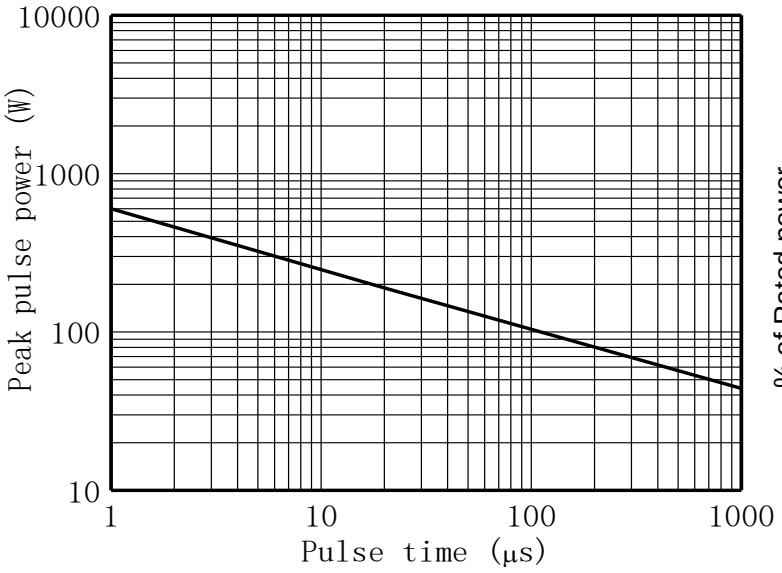
V_C vs. I_{PP}



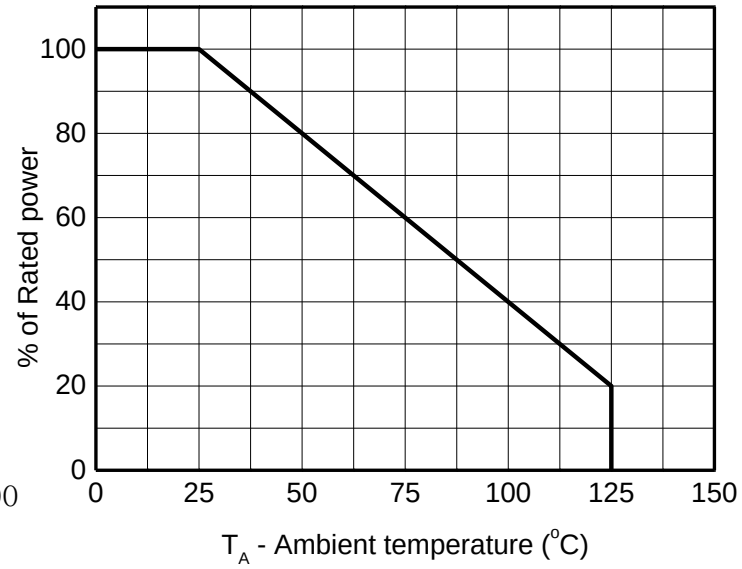
I-V Curve



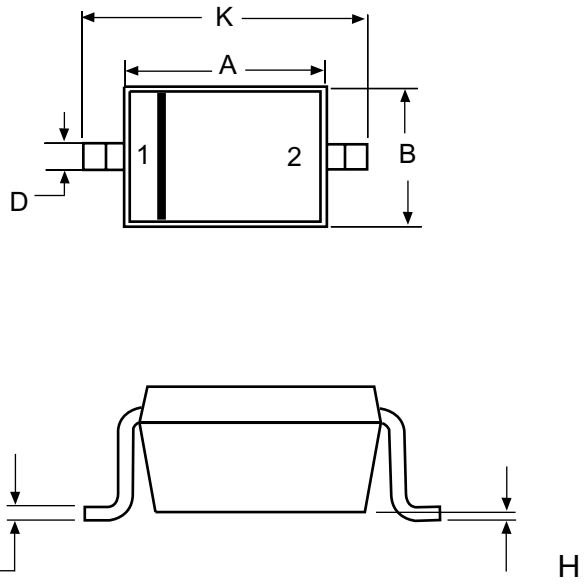
Peak pulse power vs. Pulse time



Power derating vs. Ambient temperature



SOD-323 Package Outline Dimensions



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.60	1.80	0.063	0.071
B	1.15	1.35	0.045	0.053
C	0.80	1.00	0.031	0.039
D	0.25	0.40	0.010	0.016
E	0.15 REF		0.006 REF	
H	0.00	0.10	0.000	0.004
J	0.089	0.177	0.0035	0.0070
K	2.30	2.70	0.091	0.106

Attention：

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