

Product Summary

The GESDT5V0D31 is an 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.

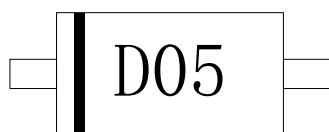
Feature

- 350 Watts peak pulse power per line ($t_P=8/20\mu s$)
- Protects one uni-directional I/O line
- Low clamping voltage
- Working voltages : 5V
- Low leakage current
- RoHS compliant

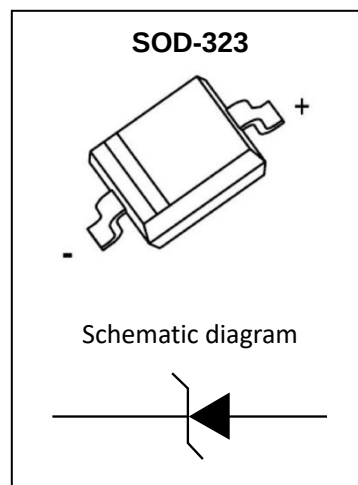
Application

- Cell phone handsets and accessories
- Microprocessor based equipment
- Personal digital assistants (PDA's)
- Notebooks, desktops, and servers
- Portable instrumentation

Marking:



Front Side
D05=Device Code



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

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage Air Model	$V_{\text{ESD}}^{(1)}$	± 30	kV
IEC 61000-4-2 ESD Voltage Contact Model		± 30	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	350	W
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	22	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$
Junction Temperature	T_j	-55~ +125	$^{\circ}\text{C}$
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

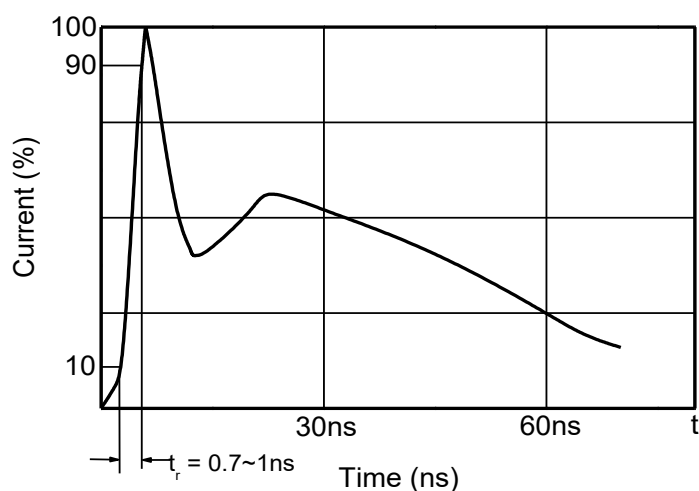
IEC61000-4-2 Standard

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

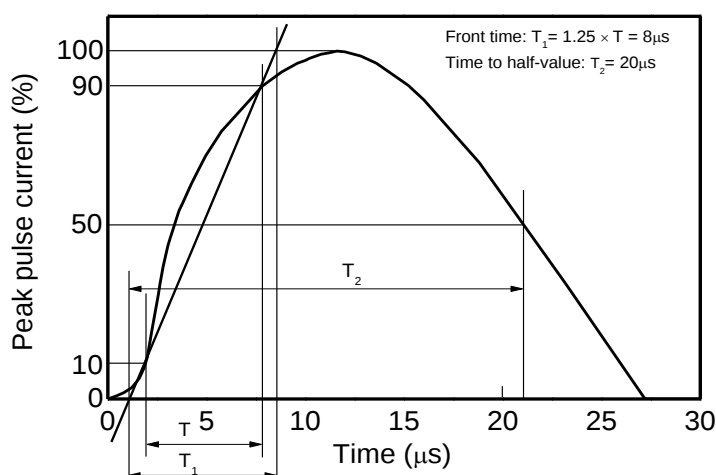
JESD22-A114-B Standard

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

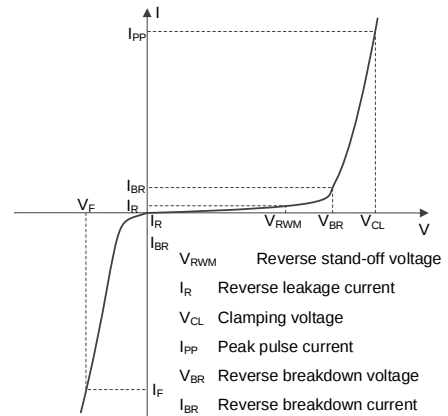


8/20 μs waveform per IEC61000-4-5



Electrical Parameter

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_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

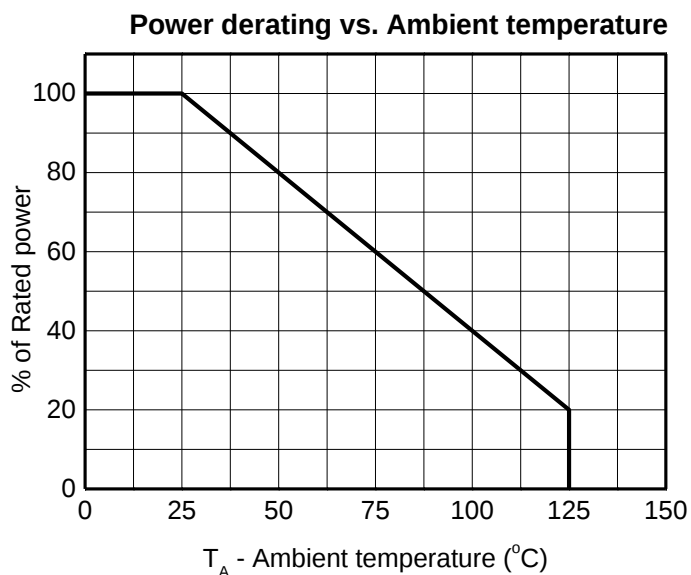
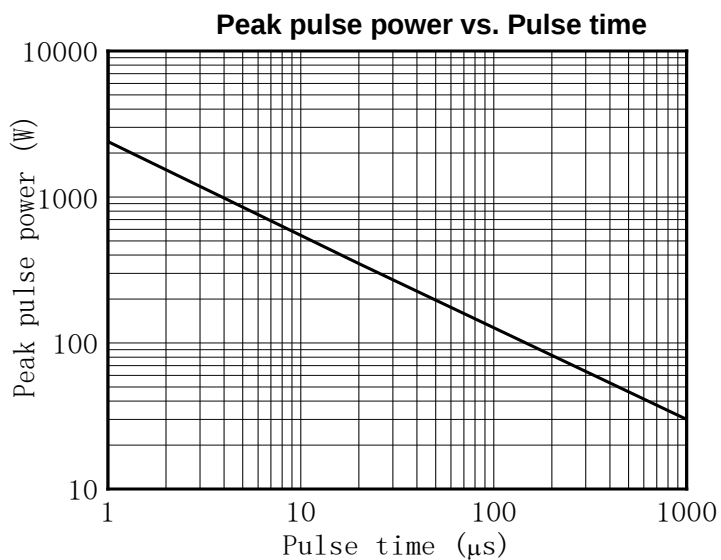
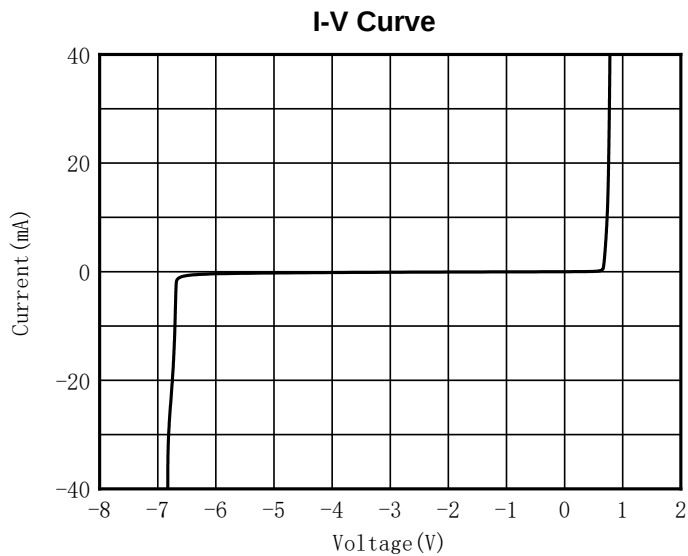
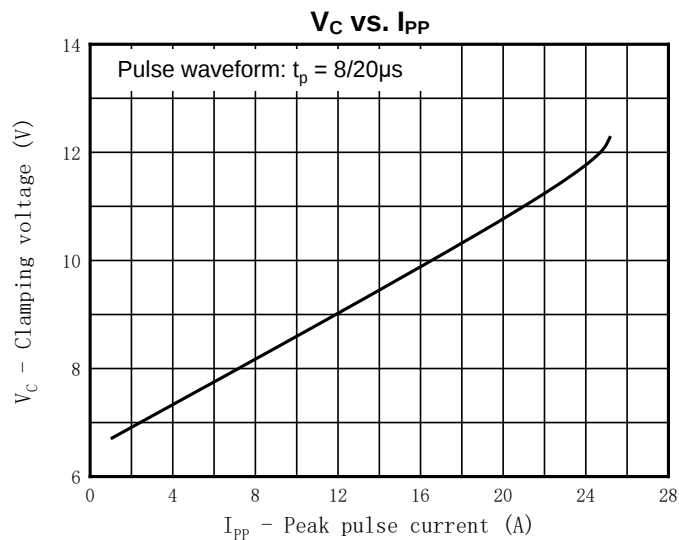
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

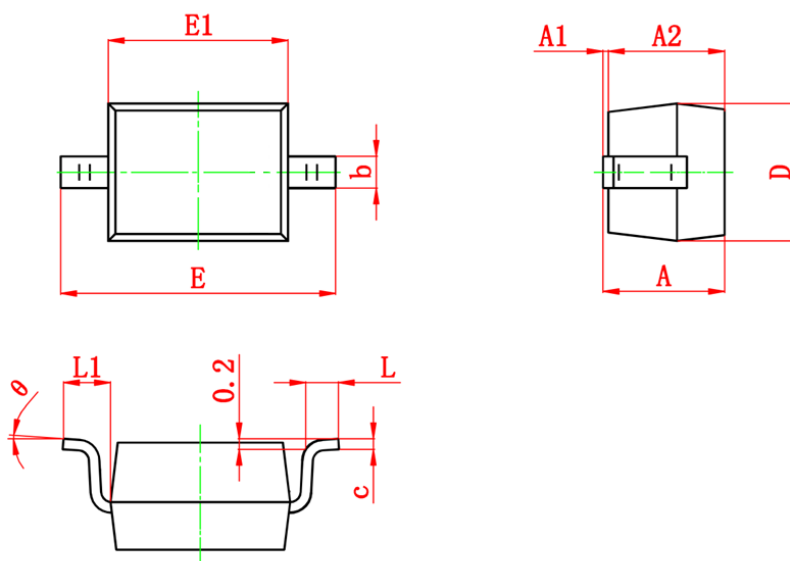
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand-off voltage	$V_{RWM}^{1)}$				5	V
Reverse leakage current	I_R	$V_{RWM}=5\text{V}$			1	μA
Breakdown voltage	V_{BR}	$I_T=1\text{mA}$	6			V
Clamping voltage	$V_C^{2)}$	$I_{PP}=1\text{A}$			9	V
		$I_{PP}=25\text{A}$		12	15	V
Junction capacitance	C_j	$V_R=0\text{V}, f=1\text{MHz}$		180		pF

1) Other voltages available upon request.

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

Typical Characteristics



SOD-323 Package Outline Dimensions


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.150MAX		0.045MAX	
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.400	0.010	0.016
c	0.080	0.180	0.003	0.007
D	1.200	1.400	0.047	0.055
E	2.500	2.800	0.098	0.110
E1	1.600	1.800	0.063	0.071
L	0.200	0.450	0.008	0.018
L1	0.475REF		0.019REF	
θ	0°	8°	0°	8°