GESDP12VD51

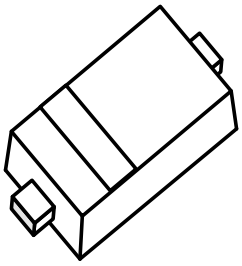
Uni-direction Transient Voltage Suppressors

Product Summary

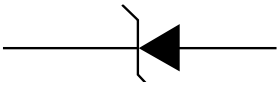
The GESDP12VD51 is Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, high level of ESD protection makes them a flexible solution for applications such as Digital cameras ,cellular phones, and MP3 Players. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

SOD-523



Schematic diagram



Feature

- Low reverse stand−off voltage:12V
- Low reverse clamping voltage
- Low leakaurrent
- Fast response time
- Solid-state silicon avalanche technologyIEC 61000-4-2 Level 4
- ESD protection

Application

- Computers and peripherals
- Portable electronics
- Power lines
- Audio and video equipment
- Cellular handsets and accessories
- Other electronic equipment communication systems

Marking: MA

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

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage — Air Model	V_{ESD} [1]	±25	kV
IEC 61000-4-2 ESD Voltage — Contact Model		±25	
Peak Pulse Power	P_{PP} [2]	110	W
Peak Pulse Current	I_{PP} [2]	5	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

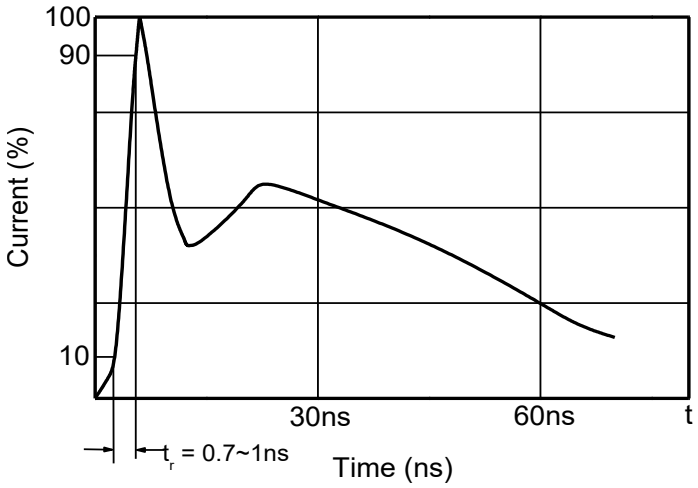
IEC61000-4-2 Standard

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

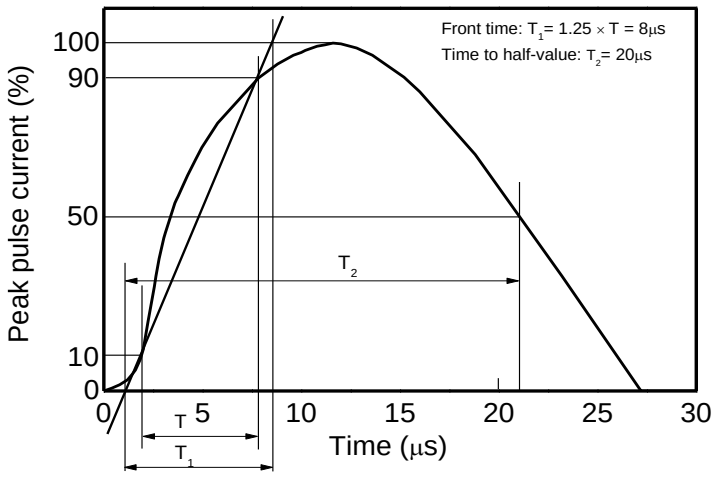
JESD22-A114-B Standard

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

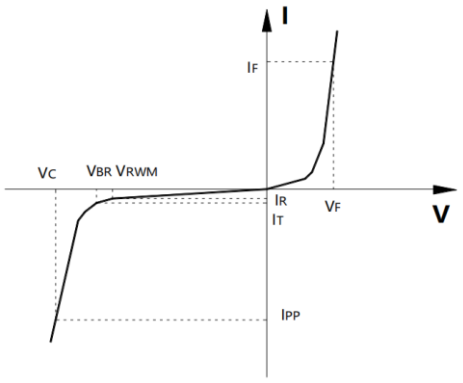


8/20μs waveform per IEC61000-4-5



Electrical Parameter

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

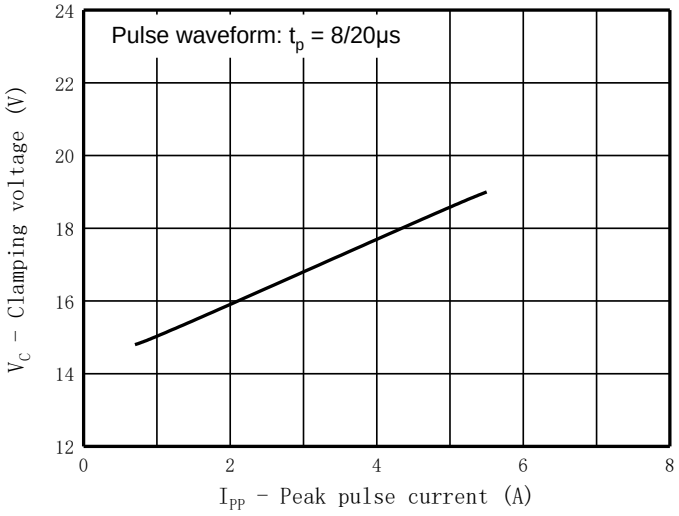
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand-off voltage	V_{RWM}[1)]				12	V
Reverse leakage current	I_R	V_{RWM}=12V			2	uA
Breakdown voltage	V_{BR}	I_T=1mA	13			V
Clamping voltage	V_C[2)]	I_{PP}=1A		16	20	V
		I_{PP}=5A		18	22.5	
Junction capacitance	C_J	V_R=0V,f=1MHz		58	87	pF

1) Other voltages available upon request.

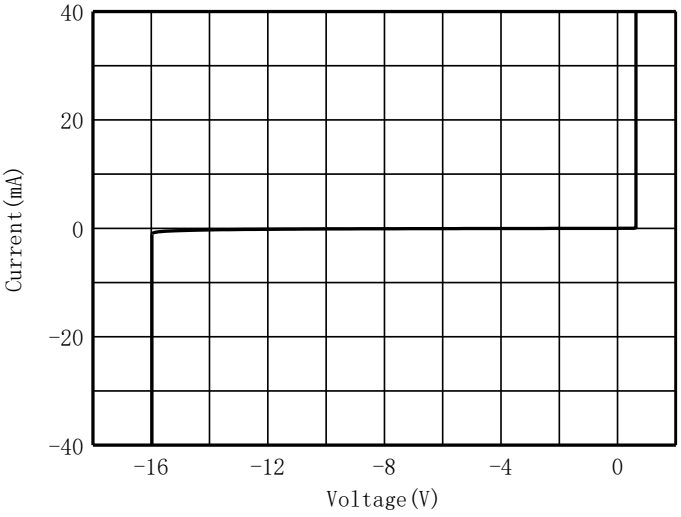
2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

Typical Characteristics

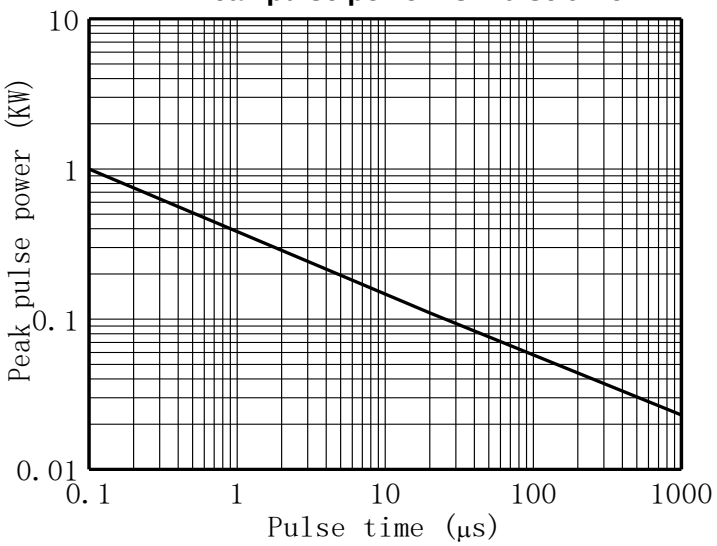
V_C vs. I_{PP}



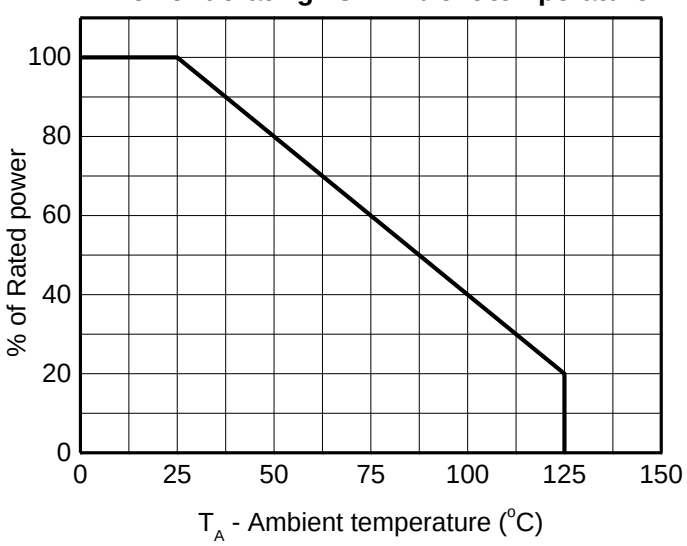
I-V Curve



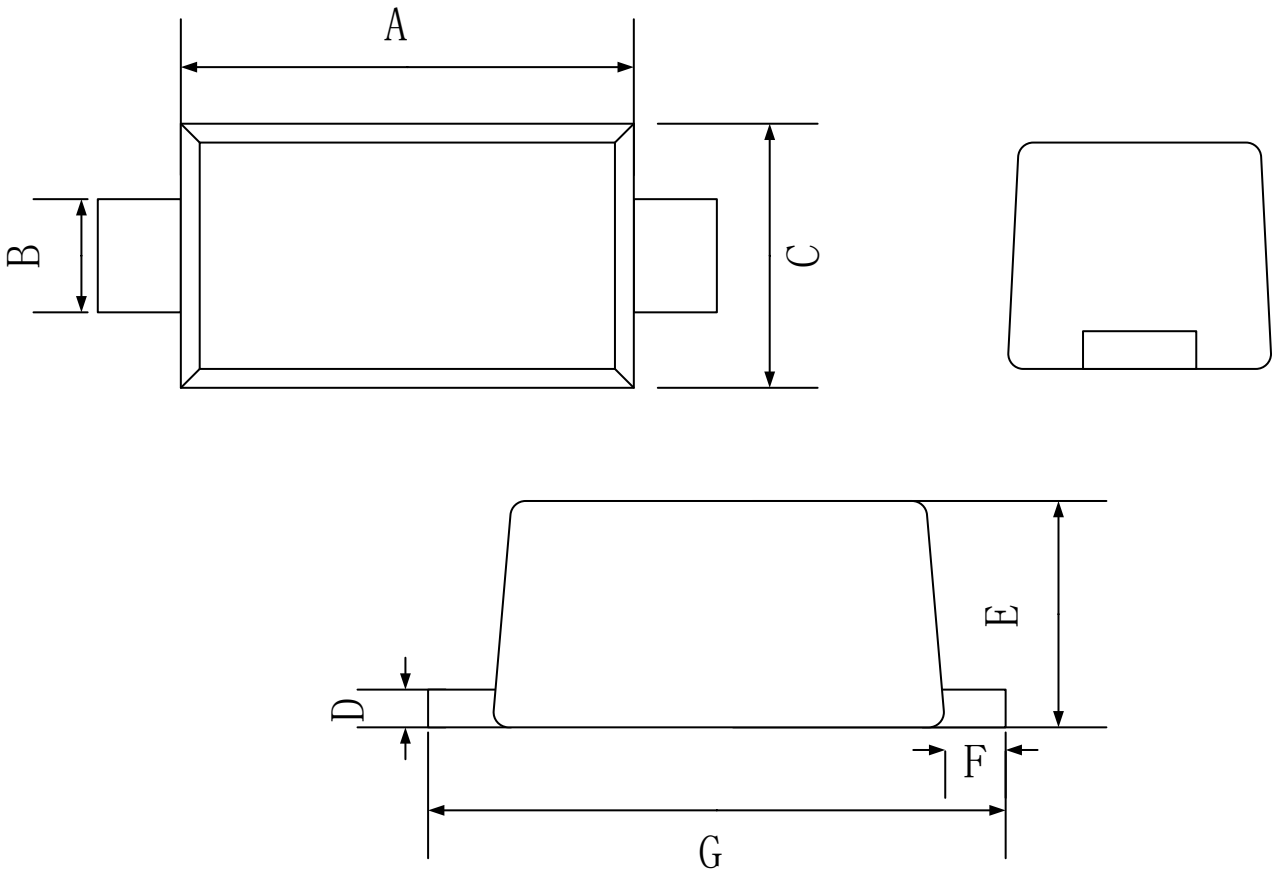
Peak pulse power vs. Pulse time



Power derating vs. Ambient temperature



SOD-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.10	1.30
B	0.25	0.40
C	0.70	0.90
D	0.07	0.20
E	0.5	0.70
F	0.15	0.25
G	1.50	1.70

Attention：

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
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