

Product Summary

The GESDS30VP1 is a high power TVS, 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 lines. It is assembled into a 3-pin DFN2X2-3L lead-free package. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular.

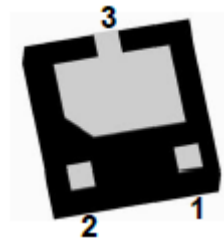
Feature

- Low reverse stand-off voltage:30V
- Line capacitance: 350pF (typical)@1MHz
- Very low reverse current : $I_R < 1\mu A$ (typical)
- IEC61000-4-5(Surge): 150A (8/20us)

Application

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

Marking:P30

DFN2X2-3L**Schematic diagram**

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

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage	$V_{\text{ESD}}^{(1)}$	± 30	kV
IEC 61000-4-2 ESD Voltage		± 30	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	6500	W
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	150	A
Junction Temperature	T_J	$-55 \sim +125$	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	$-55 \sim +155$	$^{\circ}\text{C}$

- 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

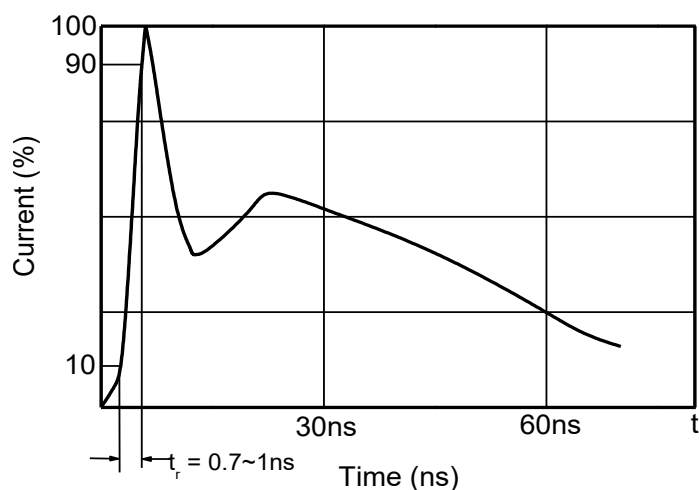
IEC61000-4-2 Standard

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

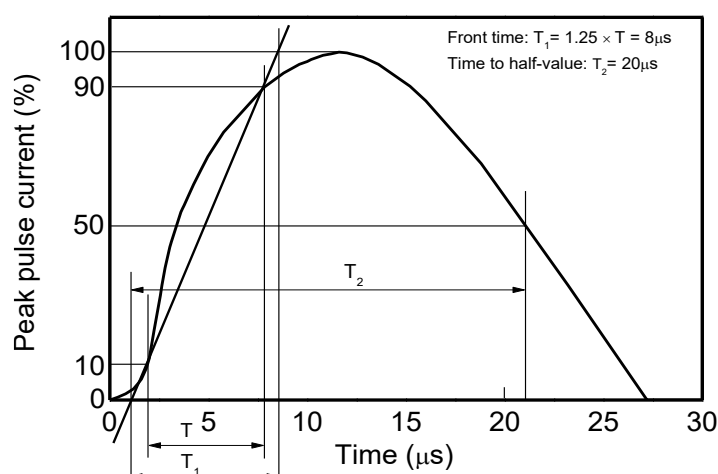
JESD22-A114-B Standard

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

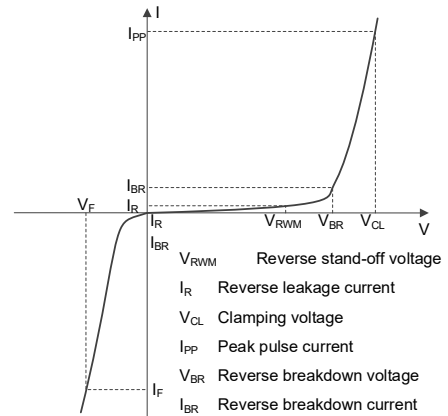


8/20 μs waveform per IEC61000-4-5



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)

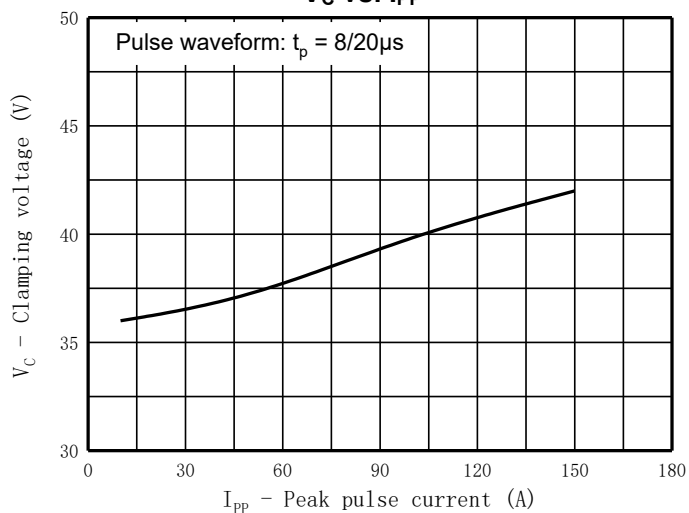
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	$V_{RWM}^{1)}$				30	V
Reverse Leakage Current	I_R	$V_{RWM}=30\text{V}$			1	μA
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	31		35	V
Clamping Voltage	$V_C^{2)}$	$I_{PP}=10\text{A}$			36	V
		$I_{PP}=150\text{A}$			42	V
Junction Capacitance	C_J	$V_R=0\text{V}, f=1\text{MHz}$		350	700	pF

1) Other voltages available upon request.

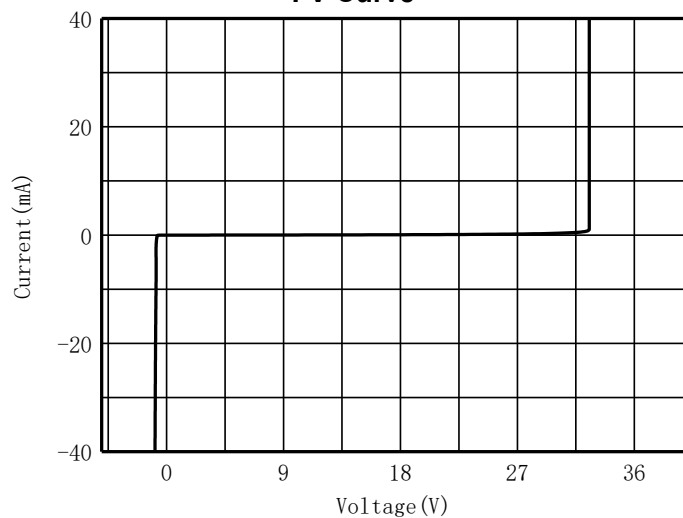
2) Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5

Typical Characteristics

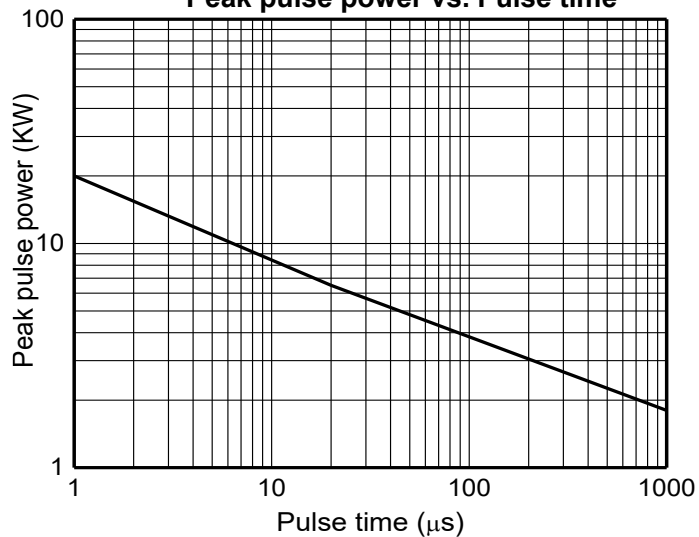
V_C vs. I_{PP}



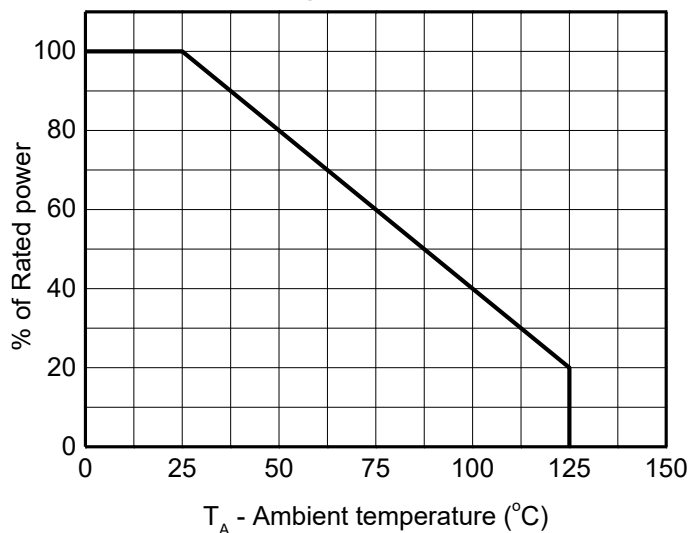
I-V Curve



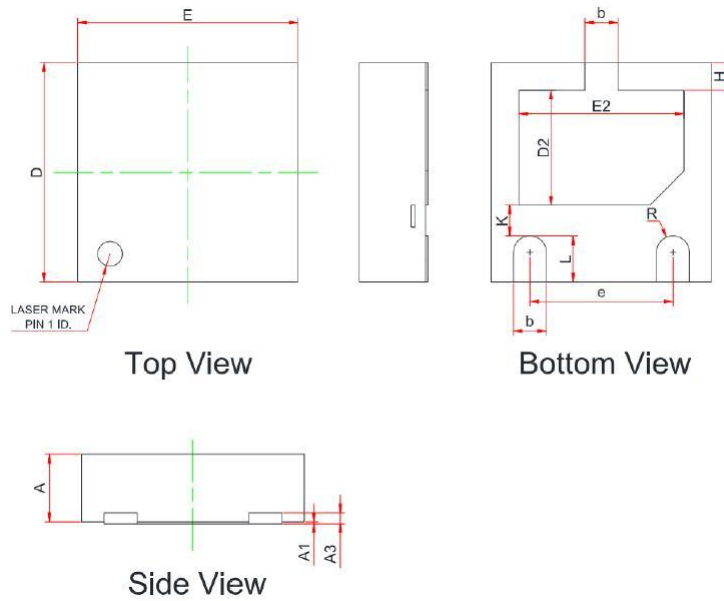
Peak pulse power vs. Pulse time



Power derating vs. Ambient temperature



DFN2X2-3L Package Outline Dimensions



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.50	0.55	0.65
A1	0.00	0.02	0.05
A3	0.10REF		
b	0.25	--	0.35
D	1.90	--	2.10
E	1.90	--	2.10
D2	0.95	--	1.15
E2	1.40	--	1.60
e	1.20		1.40
H	0.20	--	0.30
K	0.20		0.40
L	0.35	--	0.45
R	0.13	--	--

Attention:

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
- 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.
- GreenPower Electronics products belong to consumer electronics or other civilian electronic products.