

Product Summary

The GESDBU5V0Y1A is designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in digital cameras, cellular phones, MP3 players and many other portable applications where board space is at a premium.

Feature

- Stand-Off Voltage: $\pm 5V_{Max}$
- Transient Protection For Each Line According to IEC61000-4-2 (ESD): $\pm 20KV$ Air, $+15KV$ Contact IEC61000-4-5 (Surge): $4A$ (8/20 μS)
- Solid-State Silicon Technology
- Low Leakage Current

Application

- Cell phone handsets and accessories
- Personal Digital Assistants (PDAs)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Digital Cameras
- CAR/MID DVD/MP3/MP4/PMP Players

Marking: N

DFN1006-2L



Schematic diagram



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

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage Air Model	$V_{\text{ESD}}^{1)}$	± 20	KV
IEC 61000-4-2 ESD Voltage Contact Model		± 15	
Operating Temperature	T_{OP}	$-40\sim 85$	$^{\circ}\text{C}$
Peak Pulse Power(8/20 μs)	$P_{\text{PP}}^{2)}$	80	W
Peak Pulse Current	$I_{\text{PP}}^{2)}$	4	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_{L}	260	$^{\circ}\text{C}$
Junction Temperature	T_{J}	125	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	$-55\sim +150$	$^{\circ}\text{C}$

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

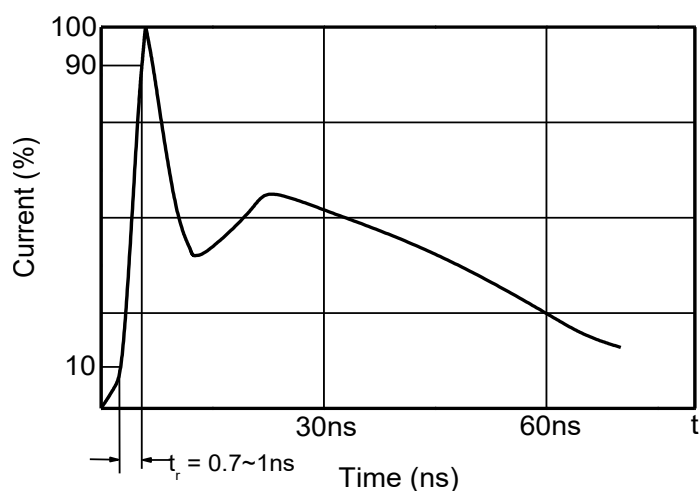
IEC61000-4-2 Standard

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

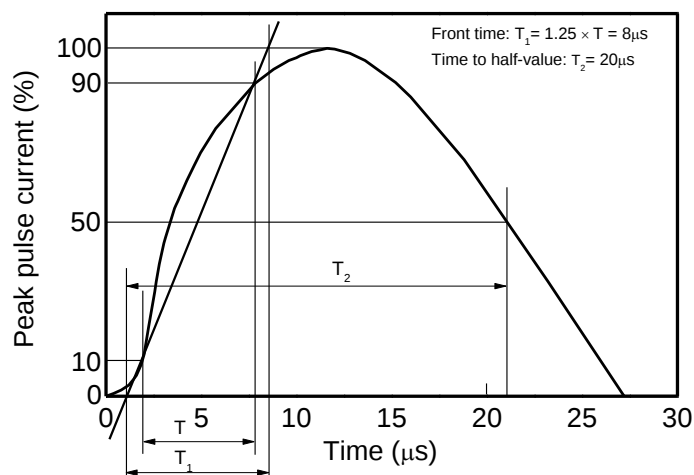
JESD22-A114-B Standard

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

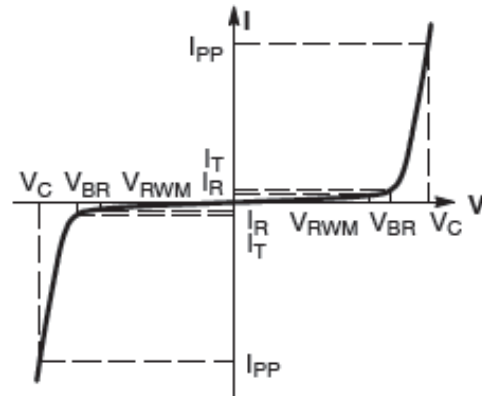


8/20 μs waveform per IEC61000-4-5



Electrical Parameter

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_{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 ($T_A=25^\circ\text{C}$ unless otherwise specified)

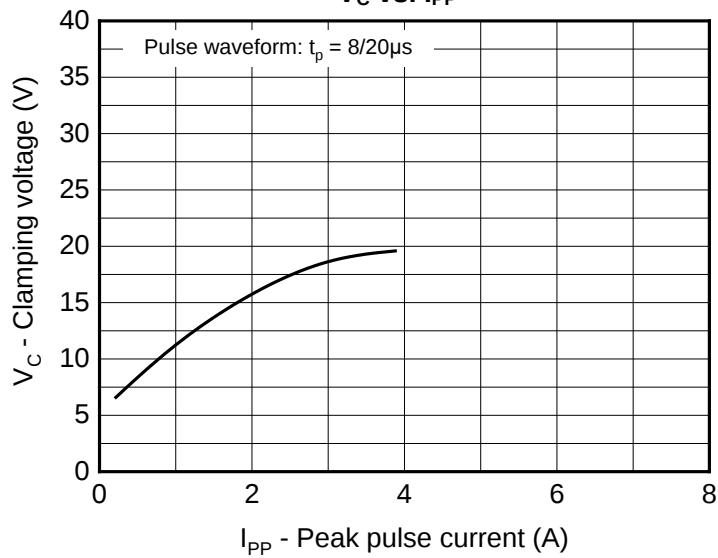
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	$V_{RWM}^{1)}$				± 5	V
Reverse Leakage Current	I_{R1}	$V_{RWM}=5\text{V}$			0.5	μA
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6		9	V
Clamping Voltage	$V_{C1}^{2)}$	$I_{PP}=1\text{A}$		10	12	V
	$V_{C2}^{2)}$	$I_{PP}=4\text{A}$			20	V
Junction Capacitance	C_j	$V_R=0\text{V}, f=1\text{MHz}$		0.3	0.5	pF

1) Other voltages available upon request.

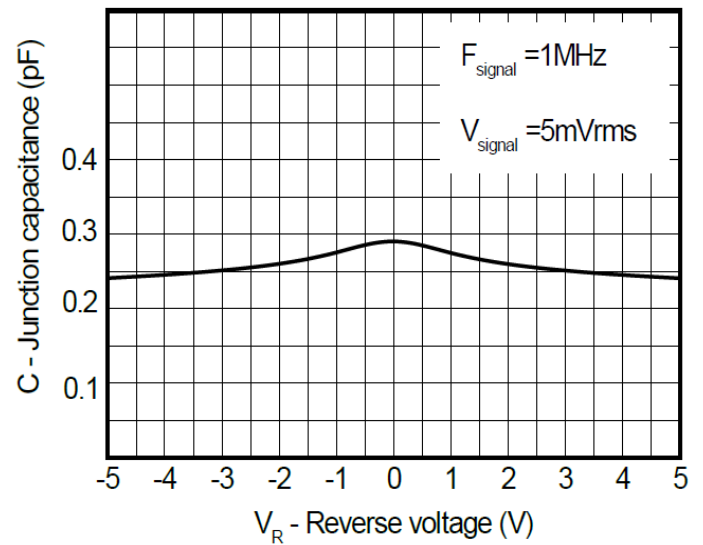
2) Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5

Typical Characteristics

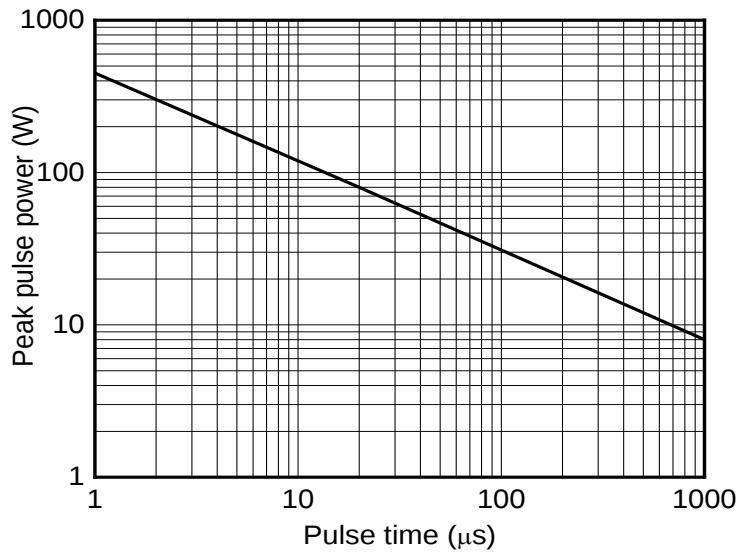
V_C vs. I_{PP}



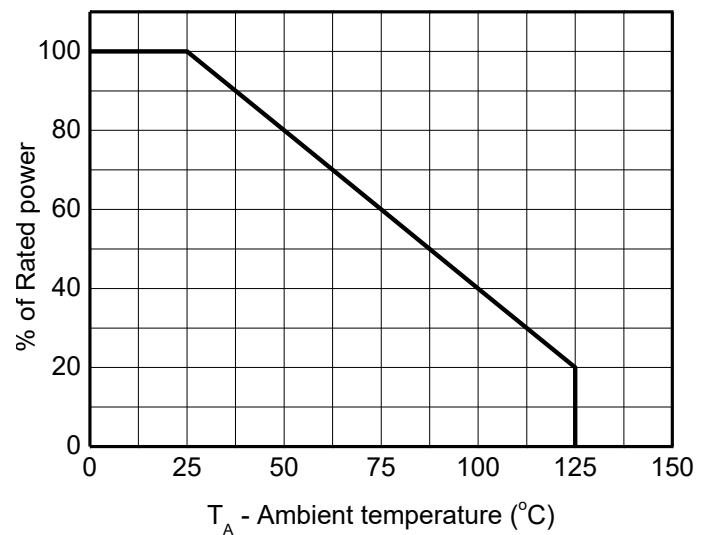
Capacitance vs. Reverse Voltage



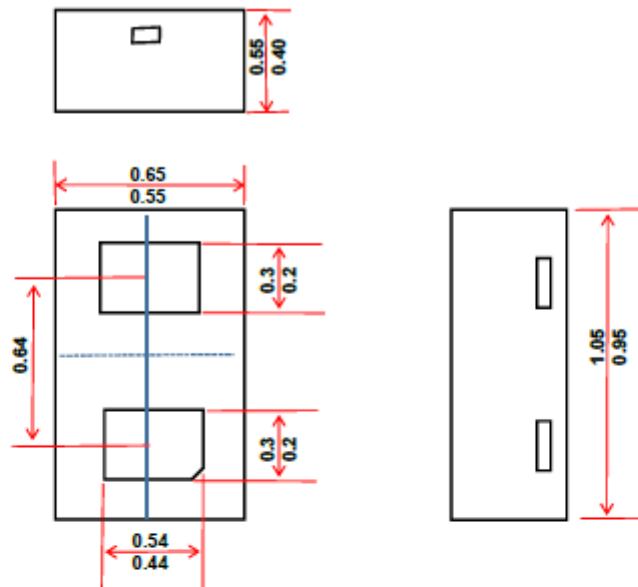
Peak pulse power vs. Pulse time



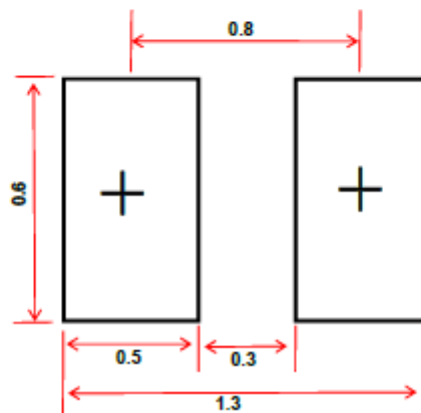
Power derating vs. Ambient temperature



DFN1006-2L Package Outline Dimensions



Recommended Mounting Pad Layout Unit:mm



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.