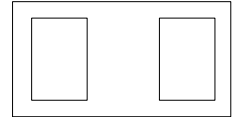
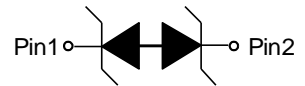


Product Summary

The GESDBY5V0AE1P is designed with SCR technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed, USB 3.0 super speed, USB 3.1 super speed ,VGA, DVI, HDMI, eSATA and other high speed line applications.

It has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD(electrostatic discharge), and EFT (electrical fast transients).

CSP0603-2L

Schematic diagram


Feature

- Low reverse stand-off voltage: 5.0V Max.
- Low capacitance (<0.25pF) for high-speed interfaces
- No insertion loss to 10.0GHz
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- No insertion loss to 10.0GHz

Application

- High Speed Line :USB1.0/2.0/3.0/3.1,VGA,DVI,SDI,
- High Definition Multi-Media Interface (HDMI1.3/1.4/2.0)
- Notebooks, Desktops, Servers
- Serial and Parallel Ports
- Mobile phone

Marking:



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

Parameter	Symbol	Value	Unit	
IEC 61000-4-2 ESD Voltage	Air Model	± 20	kV	
IEC 61000-4-2 ESD Voltage				Contact Model
JESD22-A114-B ESD Voltage				
ESD Voltage				Machine Model
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{pk}	50	W	
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{pp}	9	A	
Lead Solder Temperature - Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$	
Junction Temperature	T_j	150	$^{\circ}\text{C}$	
Storage Temperature	T_{stg}	-55~ +150	$^{\circ}\text{C}$	

ESD standards compliance

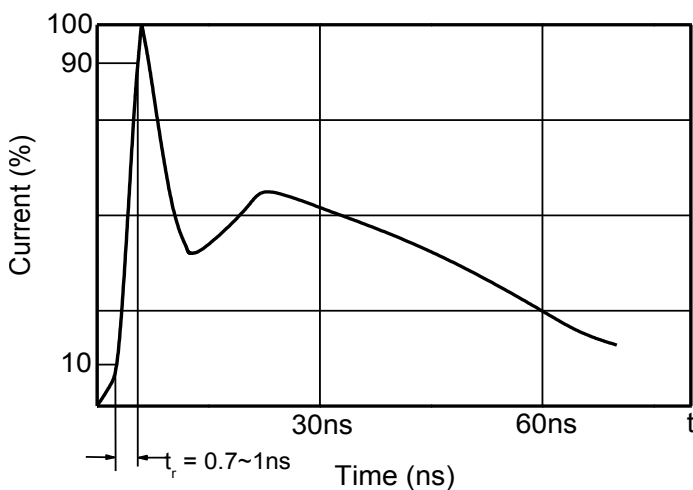
IEC61000-4-2 Standard

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

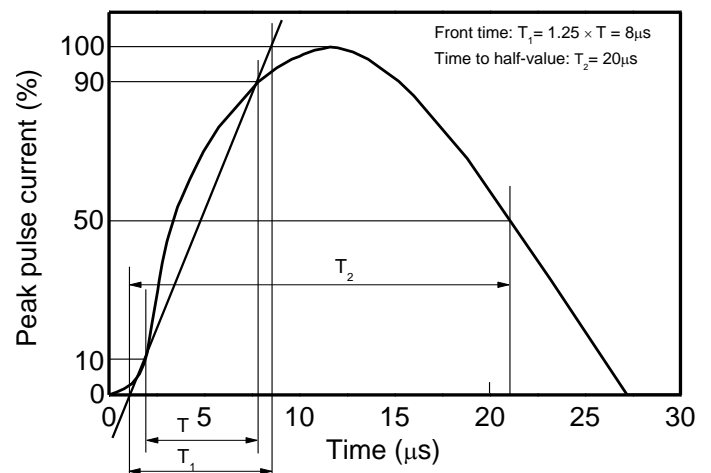
JESD22-A114-B Standard

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

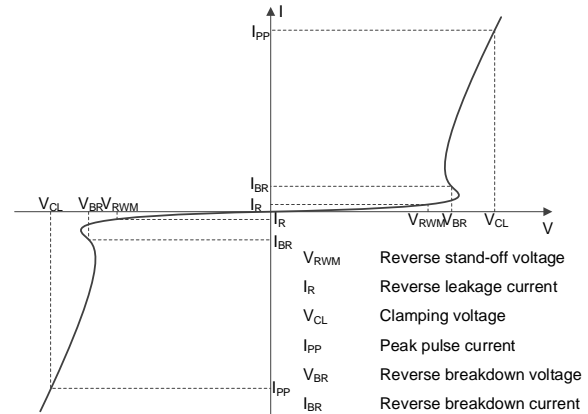


8/20 μs waveform per IEC61000-4-5



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



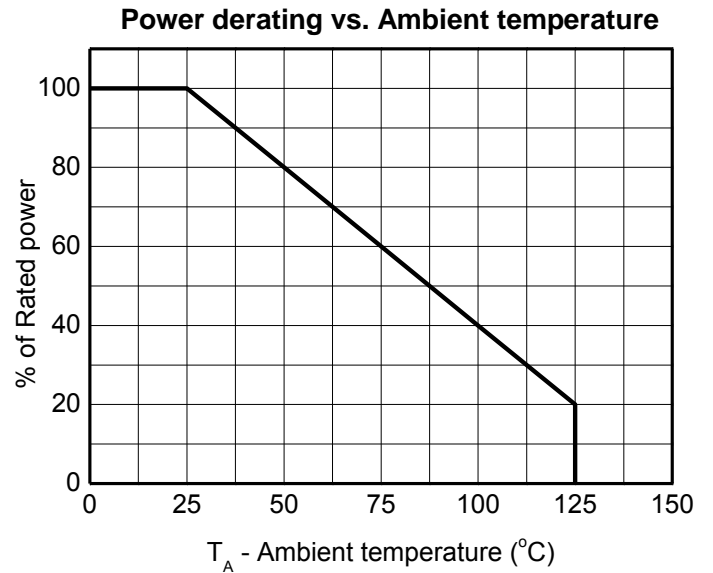
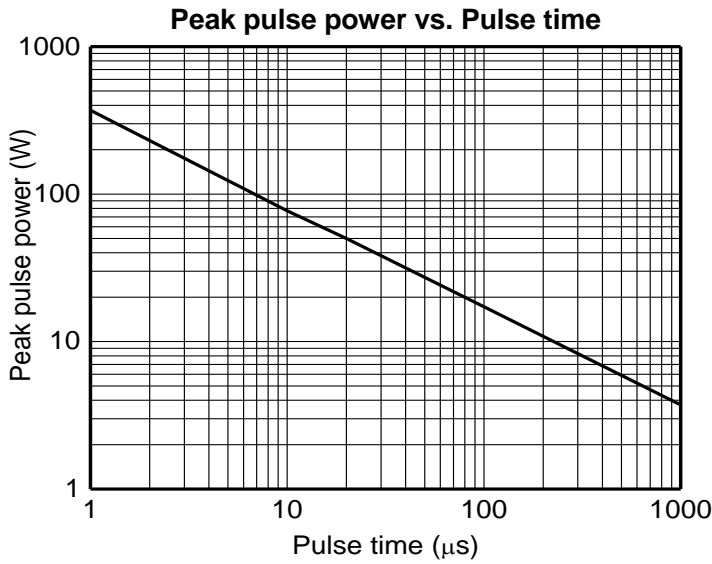
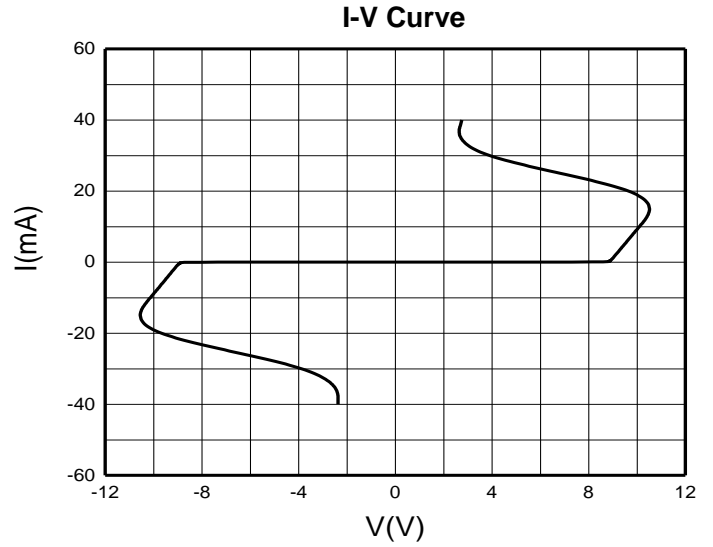
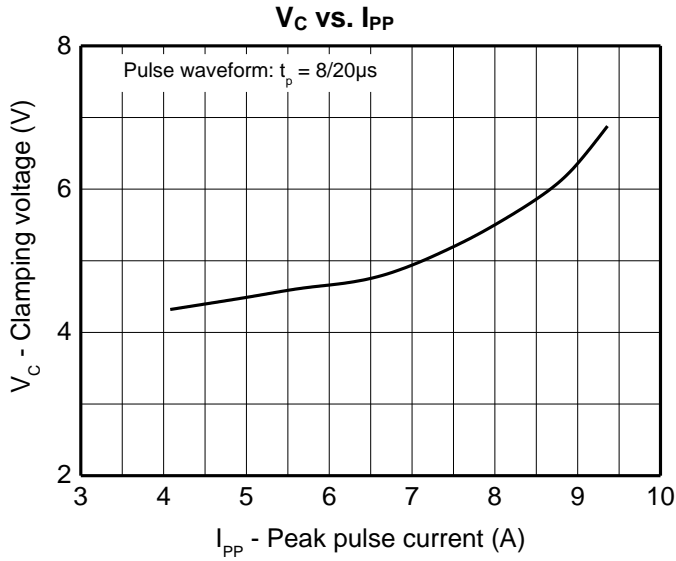
V-I characteristics for a Bi-directional TVS

Electrical Characteristics(T_A=25°C unless otherwise specified)

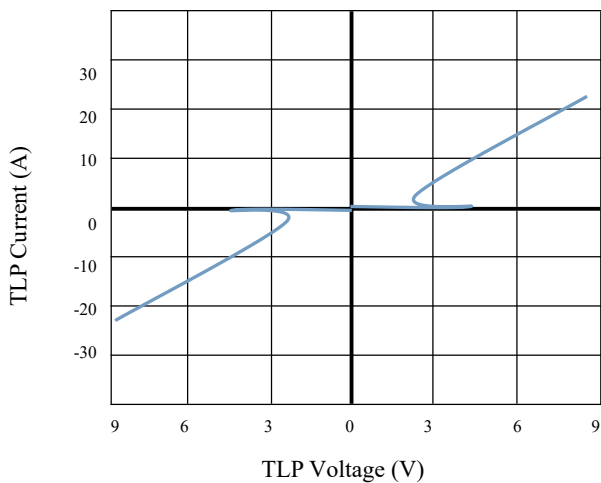
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse Standoff Voltage	V _{RWM} ¹⁾			5.0	5.5	V
Reverse Leakage Current	I _R	V _{RWM} =5.5V			0.01	μA
Breakdown Voltage	V _{BR}	I _R =1mA	6			V
Clamping Voltage	V _{C1} ²⁾	I _{PP} =1A, 8/20us		3.2		V
		I _{PP} =9A, 8/20us		6.5	8	V
Clamping Voltage	V _{C2}	TLP=8A		4.5		V
		TLP=16A		6.5		V
Dynamic Resistance	R _{dyn}	TLP=10A		0.23		Ω
Junction Capacitance	C _J	V _R =0V, f=1MHz		0.14	0.18	pF
		V _R =0V, f=1GHz		0.13		pF

- 1) Other voltages available upon request.
- 2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

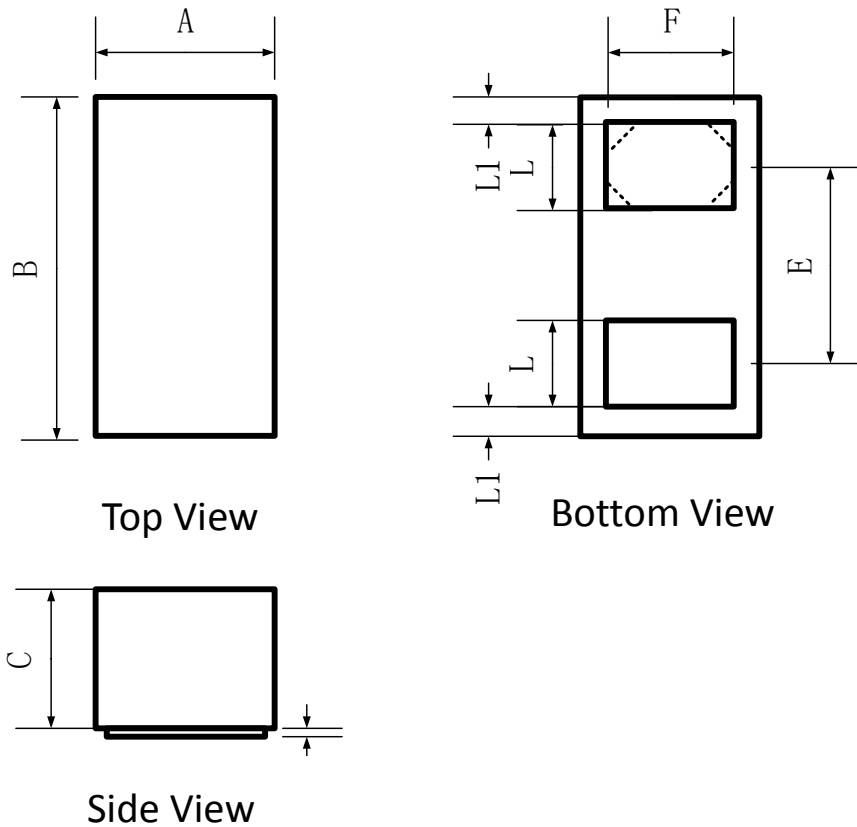
Typical Characteristics



Clamping Voltage Vs Peak PulseCurrent(ITLP)



CSP0603-2L Package Outline Dimensions



	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.25	0.30	0.35
B	0.55	0.60	0.65
C	0.23	0.30	0.34
D	0.050REF		
E	0.400BSC		
F	0.22	0.24	0.27
L	0.12	0.15	0.17
L1	0.035REF		

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.