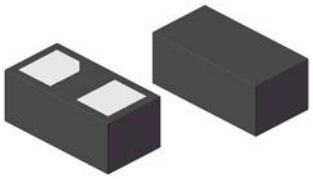
GOOD-ARK SEMICONDUCTOR

GSEN5B001
Ultra Low Capacitance ESD TVS

Features

- 100 Watts peak pulse power (tp = 8/20 μS)
- DFN0603 package
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance (Cj=0.13pF typ.)
- Protection one data/power line to:
  IEC 61000-4-2 ±15kV contact ±15kV air
  IEC 61000-4-4 (EFT) 40A (5/50 nS)
  IEC 61000-4-5 (Lightning) 5A (8/20 μS)
- RoHS compliant



DFN0603

Schematic Diagram

Applications

- USB3.0, Firewire, DVI, HDMI, S-ATA
- Thunderbolt, Display Port
- Mobile HDMI Link, MDDI, MIPI, SWP / NFC

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (t_P=8/20 μS)	P_{PP}	100	W
ESD Contact/Air Discharge (IEC-61000-4-2)	V_{ESD}	15/15	kV
Peak Pulse Current (t_P = 8/20 μS)	I_{PP}	5	A
Junction Temperature	T_J	-55 to +125	°C
Storage Temperature	T_{STG}	-55 to +150	°C
Maximum Lead Solder Temperature(10 second duration)	T_L	260	°C

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

Parameterer	Symbol	Condition	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	V_{RWM}		-	-	5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.5	8.5	-	V
Reverse Leakage Current	I_R	V_R=5.0V	-	5	100	nA
Clamping Voltage (IEC 61000-4-5)	V_C	I_{PP}=5A	-	-	20.5	V
Dynamic Resistance	R_{DYN}	I_{TLP}=0A to 20A	-	0.29	-	Ω
Trigger Voltage (IEC 61000-4-2)	V_T	V_{ESD}=8kV	-	135	-	V
Clamping Voltage (IEC 61000-4-2)	V_C	V_{ESD}=8kV	-	20	-	V
Junction Capacitance	C_J	V_R=0V, f=1MHz	-	0.13	0.2	pF
Junction Capacitance	C_J	V_R=0V, f=1GHz	-	0.1	-	pF

Typical Characteristic Curves

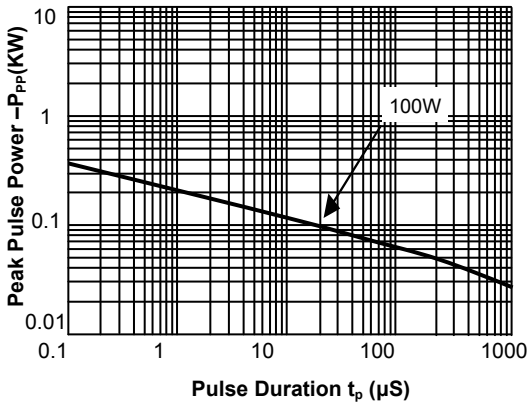


Fig.1 Peak Pulse Power Rating Curve

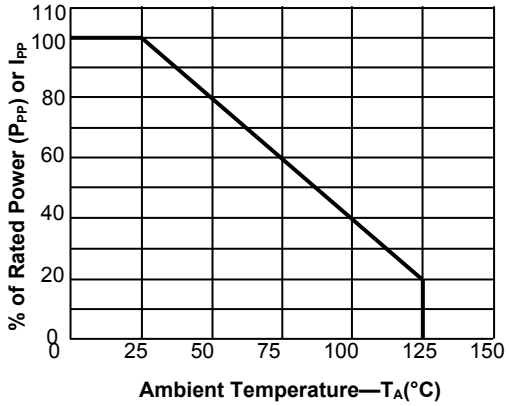


Fig.2 Pulse Derating Curve

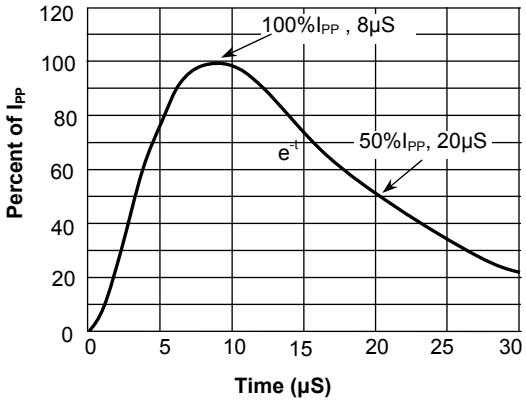


Fig.3 Pulse Waveform-8/20 μS

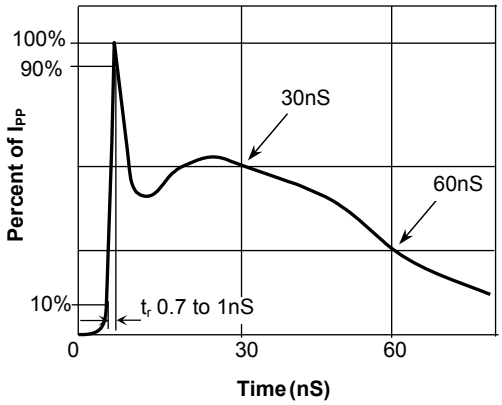


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

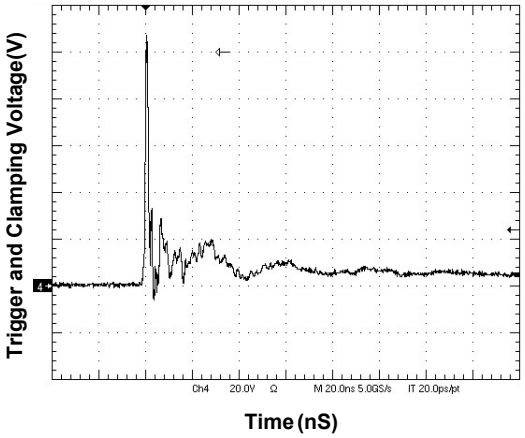


Fig.5 IEC61000-4-2 +8kV Contact Discharge

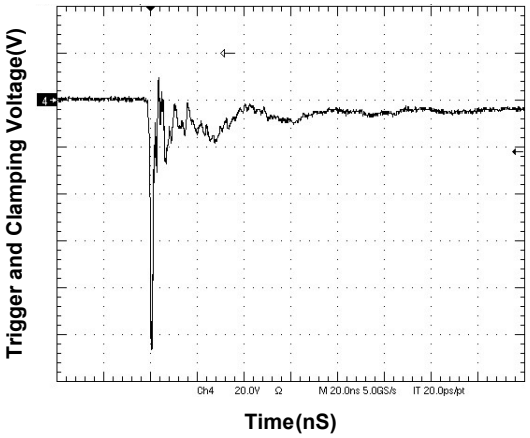


Fig.6 IEC61000-4-2 -8kV Contact Discharge

Typical Characteristic Curves

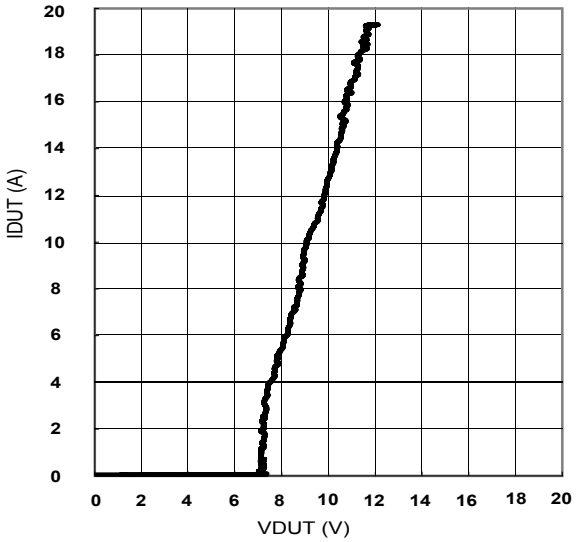


Fig.7 Transmission Line Pulse (tp=100nS)

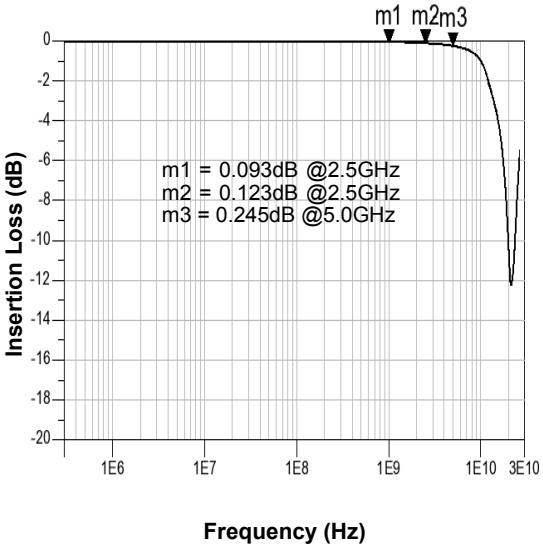
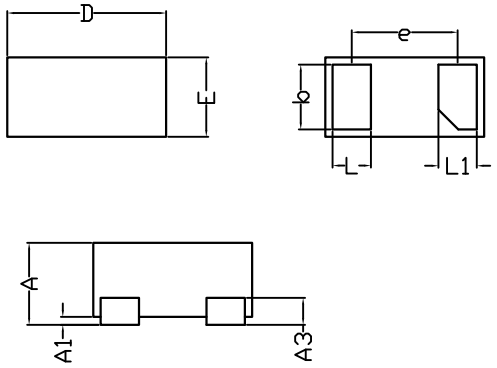


Fig.8 Insertion Loss S21

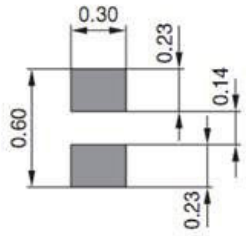
Package Outline Dimensions (DFN0603)



Symbol	Dimensions in millimeters		
	Min	Nom	Max
A	0.23	-	0.33
A1	0.00	-	0.05
A3	0.102 REF		
D	0.55	0.60	0.65
E	0.25	0.30	0.35
b	0.215	0.245	0.275
L	0.130	0.180	0.230
L1	0.130	0.180	0.230
e	0.355 BSC		

Recommended Footprint

Unit: mm



Order Information

Device	Package	Marking	Carrier	Quantity	HSF Status
GSEN5B001	DFN0603	B	Tape & Reel	15,000pcs / Reel	RoHS compliant