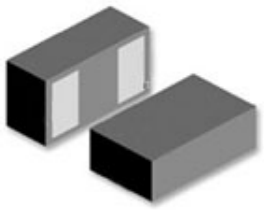
GOOD-ARK SEMICONDUCTOR

GSEN5B0032
ESD Protection Diode

Features

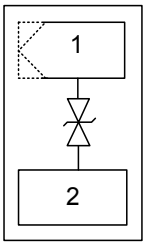
- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  -IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±25kV
  Contact discharge: ±25kV
  -IEC61000-4-5 (Lightning) 5A (8/20μs)



DFN0603

Applications

- Cellular handsets and accessories
- Display ports
- MDDI ports
- USB ports
- Digital visual interface (DVI)
- PCI express and serial SATA ports



Schematic Diagram

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{pk}	80	W
Peak Pulse Current (8/20μs)	I_{PP}	5	A
ESD Per IEC 61000-4-2 (Air)	V_{ESD}	±25	kV
ESD Per IEC 61000-4-2 (Contact)		±25	
Operating Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	5	V
Breakdown Voltage	V_{BR}	I_T=1mA	6	-	-	V
Reverse Leakage Current	I_R	V_{RWM}=5V	-	-	0.2	μA
Clamping Voltage	V_C	I_{PP}=1A (8 x 20μs pulse)	-	-	10	V
		I_{PP}=5A (8 x 20μs pulse)	-	-	16	V
Junction Capacitance	C_J	V_R=0V, f=1MHz	-	0.3	-	pF

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

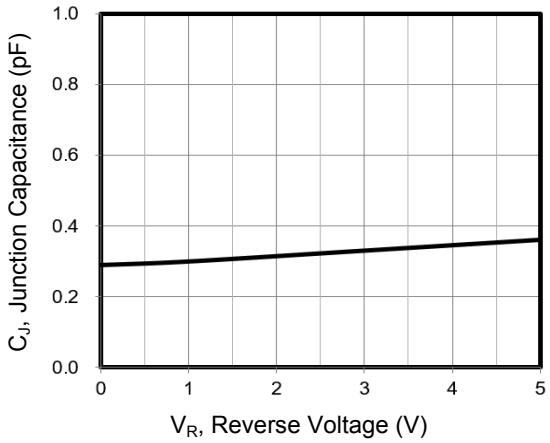


Figure 1. Junction Capacitance vs. Reverse Voltage

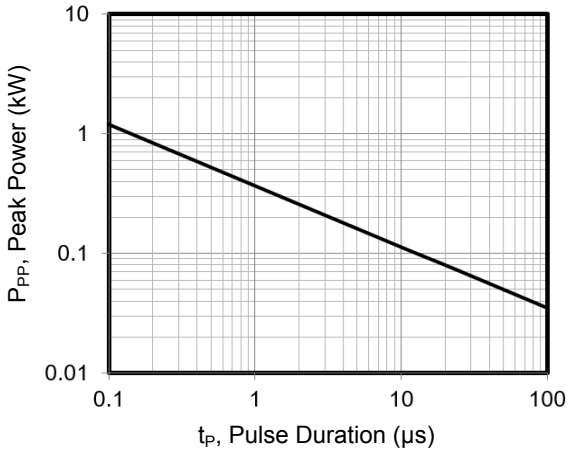


Figure 2. Peak Pulse Power vs. Pulse Time

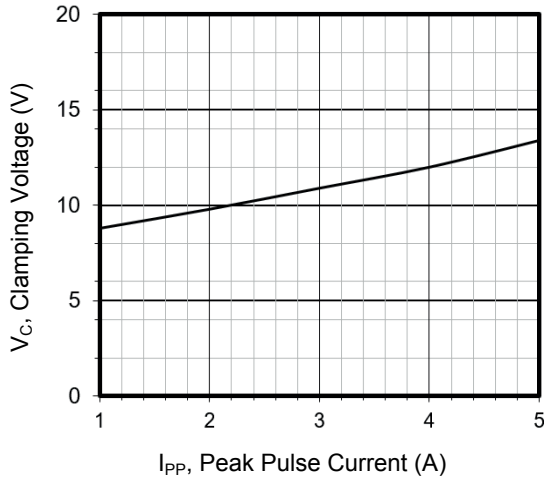


Figure 3. Clamping Voltage vs. Peak Pulse Current

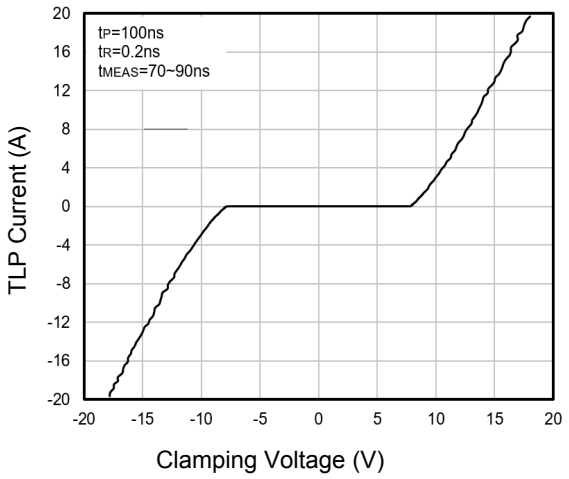


Figure 4. TLP Curve

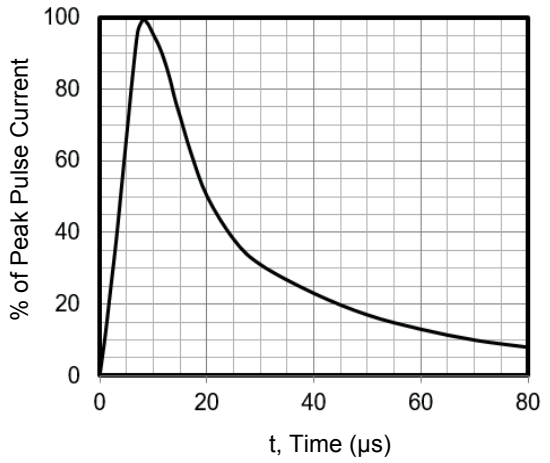
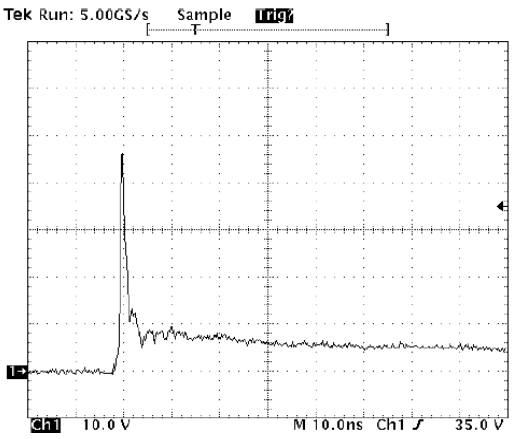


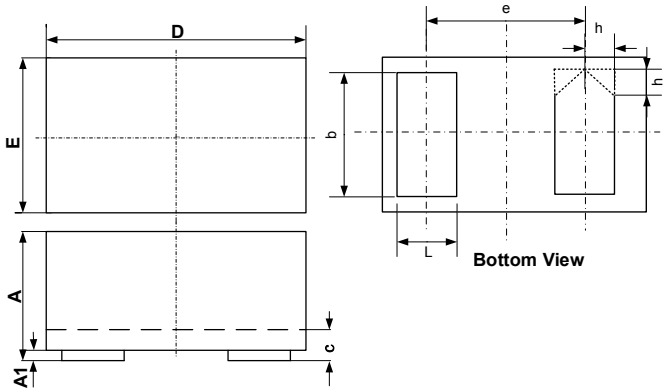
Figure 5. 8 X 20µs Pulse Waveform



Note: Data is taken with a 10x attenuator

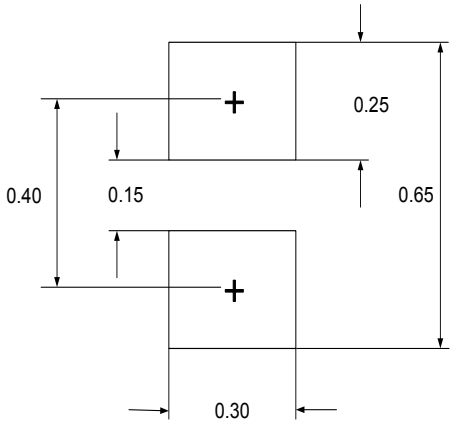
Figure 6. ESD Clamping Voltage
8kV Contact per IEC61000-4-2

Package Outline Dimensions (DFN0603)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.230	0.330	0.009	0.013
A1	0.000	0.050	0.000	0.002
b	0.215	0.275	0.008	0.011
c	0.120	0.180	0.005	0.007
D	0.550	0.650	0.022	0.026
e	0.355 BSC		0.014 BSC	
E	0.250	0.350	0.010	0.014
L	0.160	0.220	0.006	0.009
h	0.079 BSC		0.003 BSC	

Recommended Pad Layout



unit: mm

Order Information

Device	Package	Marking	Packaging	SPQ
GSEN5B0032	DFN0603	VZ	Tape & Reel	10,000 pcs / Reel