

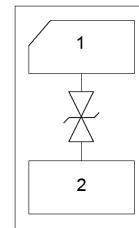
# GSEZ20B050 ESD Protection Diode

## Features

- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 20V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30\text{kV}$   
Contact discharge:  $\pm 30\text{kV}$
  - IEC 61000-4-5 (Lightning) 4A (8/20 $\mu\text{s}$ )



DFN1006



Schematic Diagram

## Applications

- Cellular handsets and accessories
- Personal digital assistants
- Notebooks and handhelds
- Portable instrumentation
- Digital cameras
- Peripherals
- Audio players

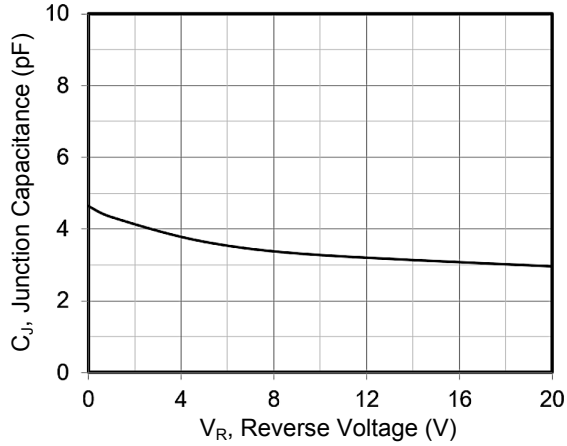
## Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{pk}$	128	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{pp}$	4	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	$\pm 30$	kV
Operating Temperature Range	$T_J$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

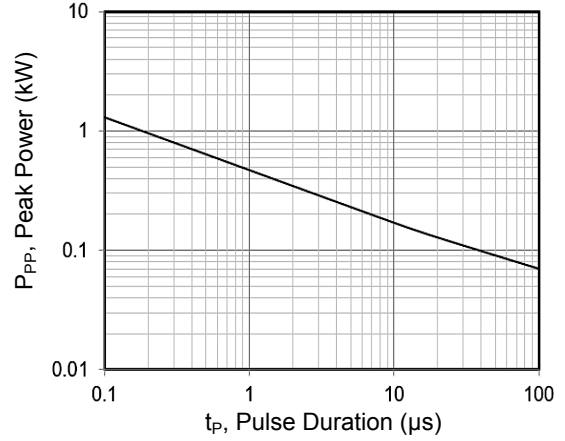
## Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$	-	-	-	20	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	22	-	-	V
Reverse Leakage Current	$I_R$	$V_{RWM}=20\text{V}$	-	-	0.2	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP}=4\text{A}$ (8 x 20 $\mu\text{s}$ pulse)	-	27	32	V
Junction Capacitance	$C_J$	$V_R=0\text{V}$ , $f=1\text{MHz}$	-	5	-	pF

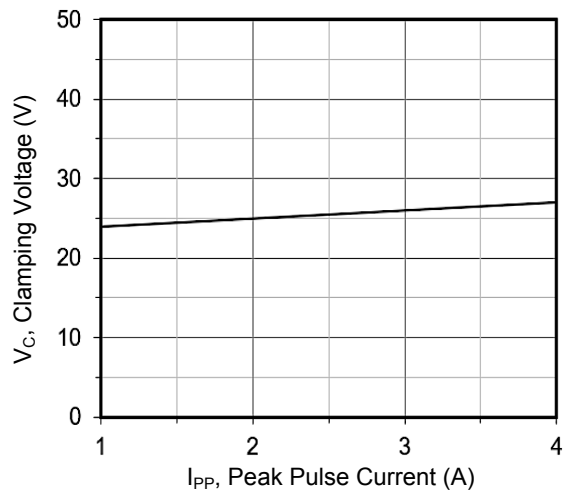
**Typical Performance Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise specified)



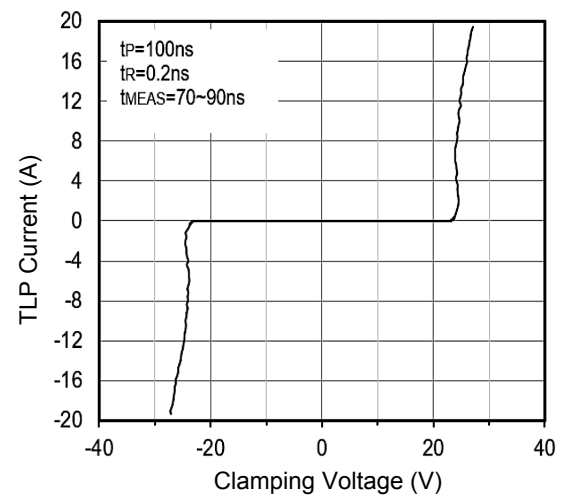
**Figure 1. Junction Capacitance vs. Reverse Voltage**



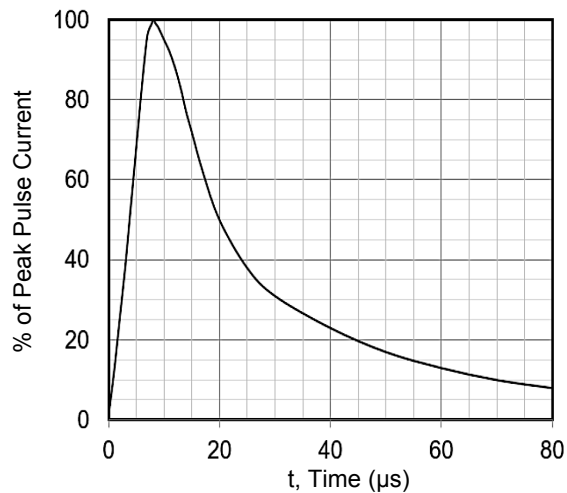
**Figure 2. Peak Pulse Power vs. Pulse Time**



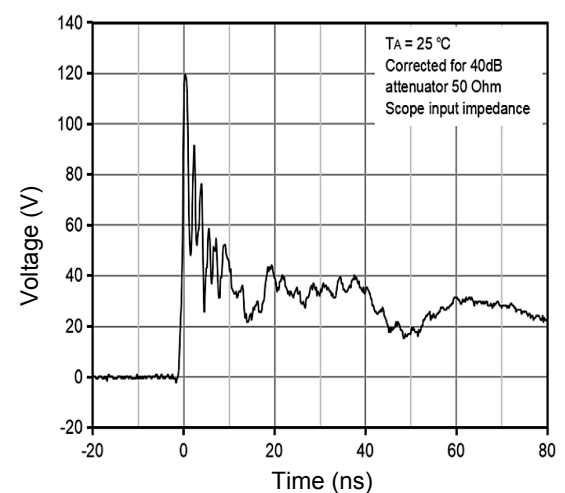
**Figure 3. Clamping Voltage vs. Peak Pulse Current**  
 $(t_p=8/20\mu\text{s})$



**Figure 4. TLP Measurement**

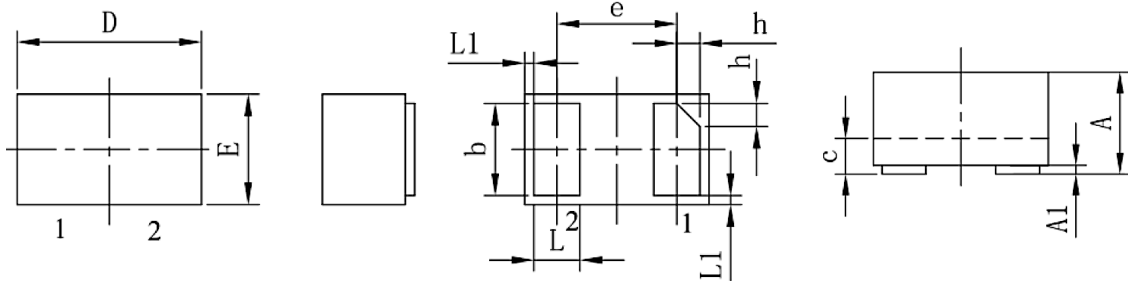


**Figure 5. 8 x 20 $\mu\text{s}$  Pulse Waveform**



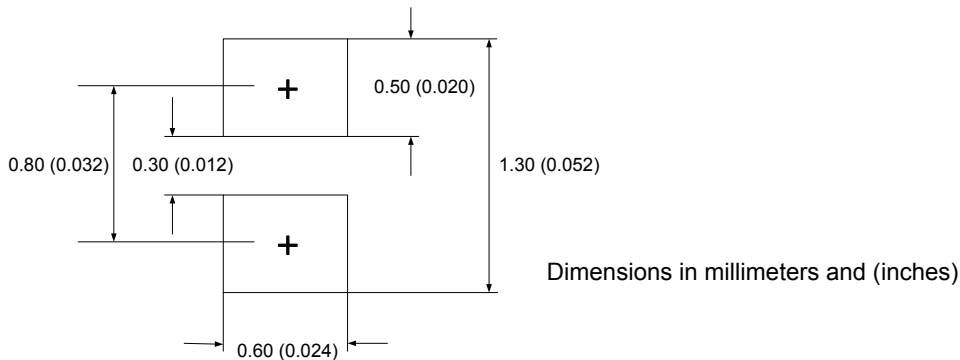
**Figure 6. ESD Clamping Voltage**  
**8kV Contact per IEC 61000-4-2**

**Package Outline Dimensions (DFN1006)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min	Max.
A	0.45	0.55	0.018	0.022
A1	0.00	0.05	0.000	0.002
b	0.45	0.55	0.018	0.022
c	0.12	0.18	0.005	0.007
D	0.95	1.05	0.037	0.041
e	0.65 BSC		0.026 BSC	
E	0.55	0.65	0.022	0.026
L	0.20	0.30	0.008	0.012
L1	0.05 REF		0.002 REF	
h	0.07	0.17	0.003	0.007

**Recommended Pad Layout**



**Order Information**

Device	Package	Marking	Packaging	SPQ
GSEZ20B050	DFN1006	20P	Tape & Reel	10,000 Pcs / Reel