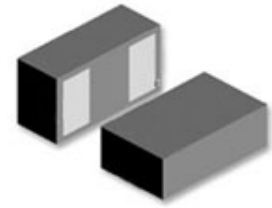
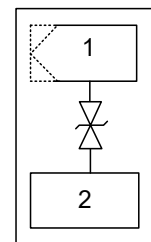


## Features

- low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Operating voltage: 3.3V
- Low clamping voltage
- 2-pin lead less package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 15\text{kV}$   
Contact discharge:  $\pm 15\text{kV}$
  - IEC 61000-4-5 (Lightning) 5A (8/20 $\mu\text{s}$ )
- RoHS compliant



DFN0603



Schematic Diagram

## Applications

- Cellular handsets and accessories
- Display ports
- MDDI / MHL
- USB 2.0 / USB 3.0
- Digital visual interface (DVI)
- PCI express and serial SATA ports

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{pk}$	50	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{pp}$	5	A
ESD Per IEC 61000-4-2 (Air)	$V_{ESD}$	$\pm 15$	kV
ESD Per IEC 61000-4-2 (Contact)		$\pm 15$	
Operating Temperature Range	$T_J$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

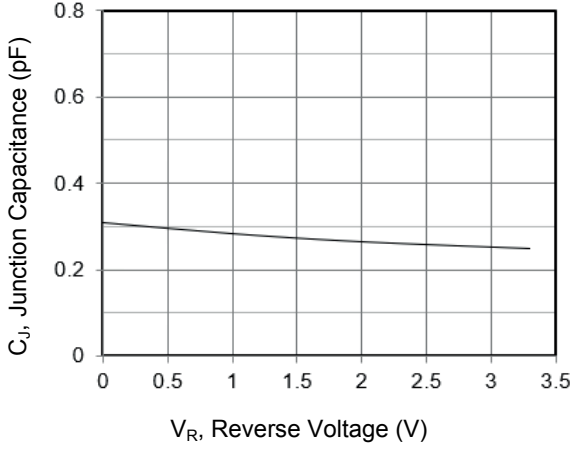
## Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$	-	-	-	3.3	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	3.5	-	-	V
Reverse Leakage Current	$I_R$	$V_{RWM}=3.3\text{V}$	-	-	0.2	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{pp}=5\text{A}$ (8 x 20 $\mu\text{s}$ pulse)	-	-	10	V
ESD Clamping Voltage <sup>1</sup>	$V_C$	$I_{pp}=4\text{A}$ , $t_p=0.2/100\text{ns}$ (TLP)	-	5.1	-	V
		$I_{pp}=16\text{A}$ , $t_p=0.2/100\text{ns}$ (TLP)	-	9.1	-	V
Dynamic Resistance <sup>2</sup>	$R_{DYN}$	$t_p=0.2/100\text{ns}$ (TLP)	-	0.36	-	Ohm
Junction Capacitance	$C_J$	$V_R=0\text{V}$ , $F=1\text{MHz}$	-	0.3	-	pF

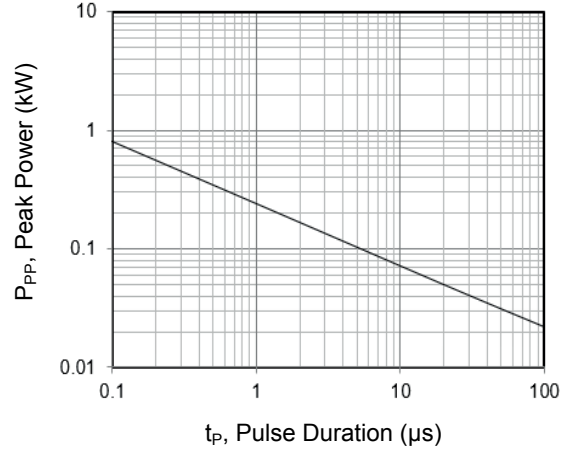
Note:

1. Transmission line pulse test (TLP) settings:  $t_p=100\text{ns}$ ,  $t_r=0.2\text{ns}$ .
2. Dynamic resistance calculated from  $ITLP=4\text{A}$  to  $ITLP=16\text{A}$ .

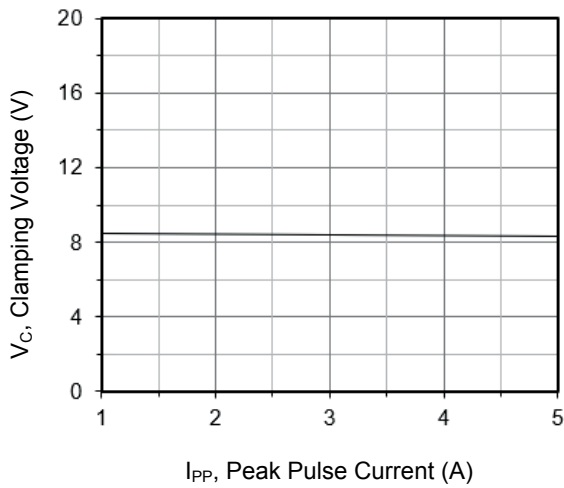
**Typical Performance Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise Specified)



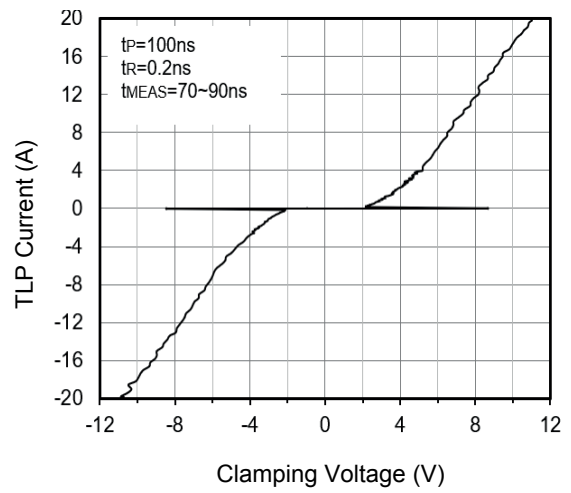
**Figure 1. Junction Capacitance vs. Reverse Voltage**



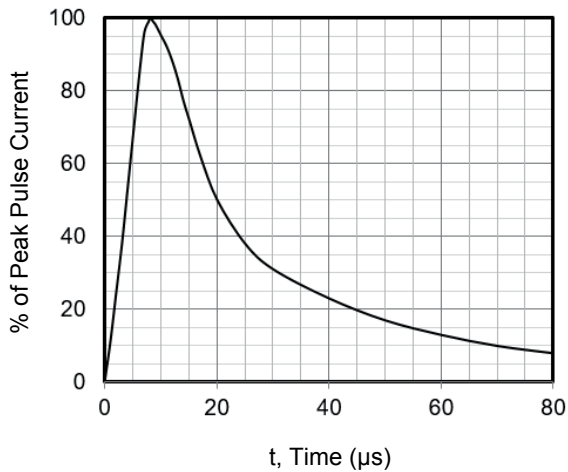
**Figure 2. Peak Pulse Power vs. Pulse Time**



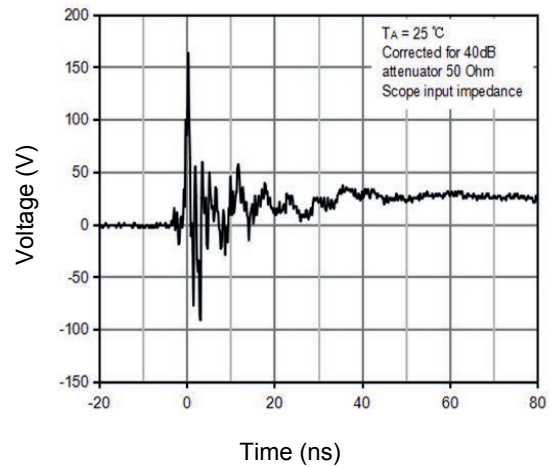
**Figure 3. Clamping Voltage vs. Peak Pulse Current**  
( $t_p=8/20\mu\text{s}$ )



**Figure 4. TLP Measurement**

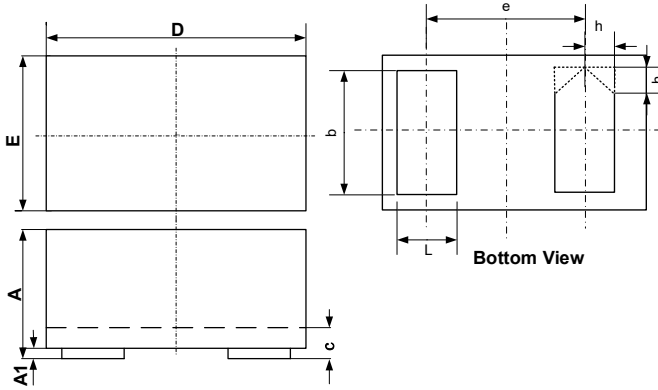


**Figure 5. 8 X 20 $\mu\text{s}$  Pulse Waveform**



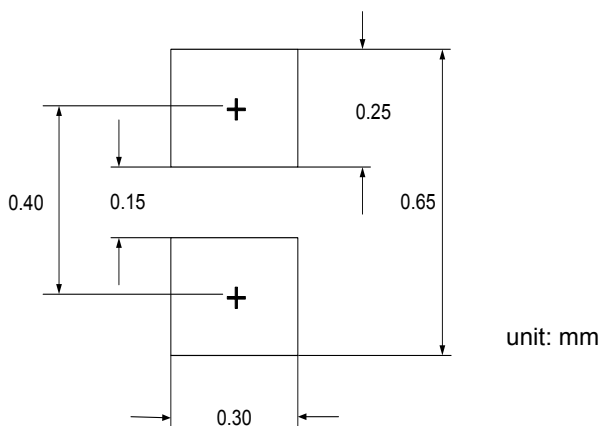
**Figure 6. ESD Clamping Voltage**  
8kV Contact per IEC61000-4-2

**Package Outline Dimensions (DFN0603)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.230	0.340	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	0.360 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**



**Order Information**

Device	Package	Marking	Carrier	Quantity
GSEN3B0031	DFN0603	1B	Tape & Reel	10,000 pcs / Reel