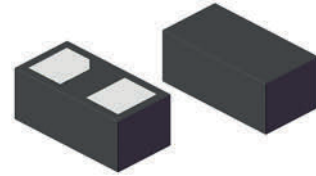
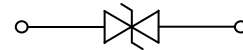


### Features

- 100 Watts peak pulse power ( $T_p=8/20\mu s$ )
- Tiny DFN0603 package
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low Leakage current
- Ultra low capacitance ( $C_J=0.13pF$  typ.)
- Protection one data/power line to:  
 IEC 61000-4-2  $\pm 15kV$  contact  $\pm 15kV$  air  
 IEC 61000-4-4 (EFT) 40A (5/50ns)  
 IEC 61000-4-5 (Lightning) 5A (8/20 $\mu s$ )
- RoHS compliant



**DFN0603**



**Schematic Diagram**

### Applications

- USB3.0, firewire, DVI, HDMI, S-ATA
- Thunderbolt, display port
- Mobile HDMI Link, MDDI, MIPI, SWP / NFC

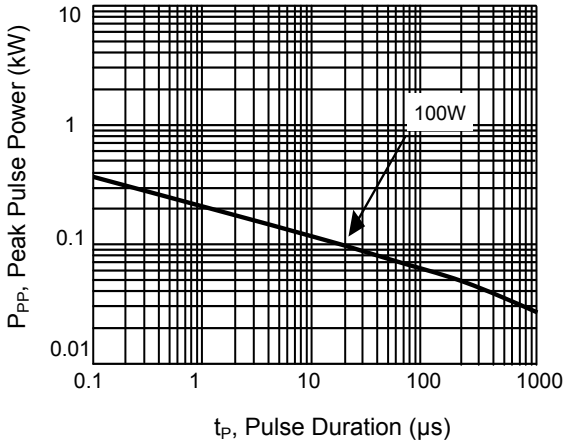
### Absolute Maximum Ratings ( $T_A=25^\circ C$ unless otherwise specified)

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p=8/20\mu s$ )	$P_{PP}$	100	W
Peak Pulse Current ( $t_p=8/20\mu s$ )	$I_{PP}$	5	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	15	kV
ESD per IEC 61000-4-2 (Contact)		15	
Maximum Lead Soldering Temperature	$T_L$	260 (10seconds)	$^\circ C$
Junction Temperature	$T_J$	-55 to +125	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

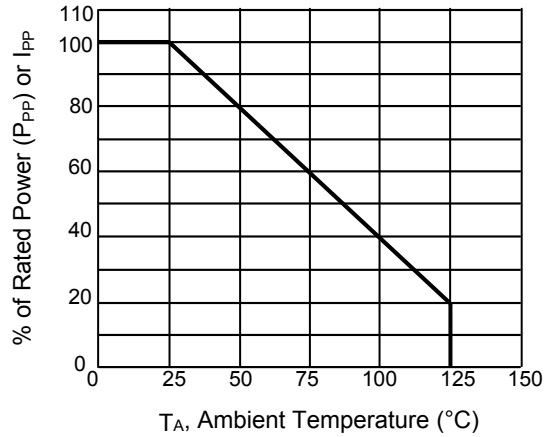
### Electrical Characteristics ( $T_A=25^\circ C$ unless otherwise specified)

Parameterer	Symbol	Condition	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	$V_{RWM}$	-	-	-	3.3	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	4.5	-	-	V
Reverse Leakage Current	$I_R$	$V_R=3.3V$	-	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	-	$\Omega$
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
		$V_R=0V, F=1GHz$	-	0.1	-	

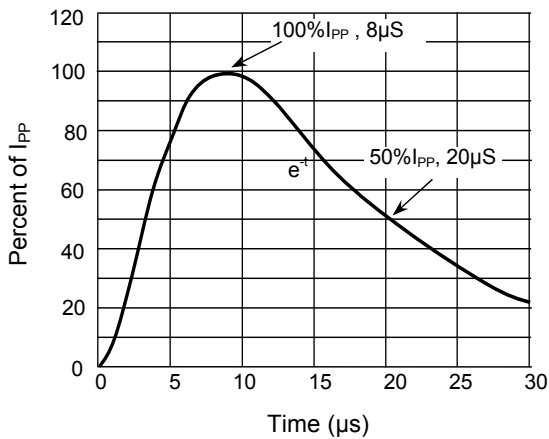
**Typical Characteristic Curves**



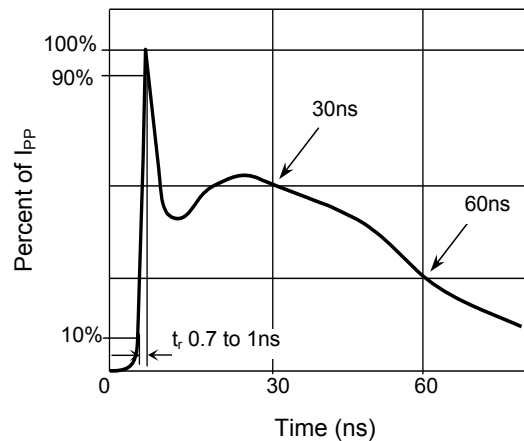
**Figure 1. Peak Pulse Power Rating Curve**



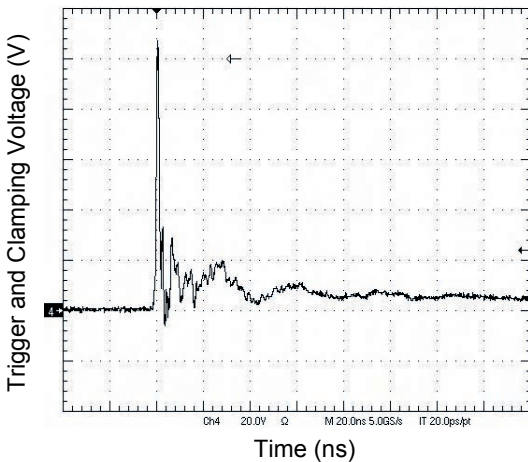
**Figure 2. Pulse Derating Curve**



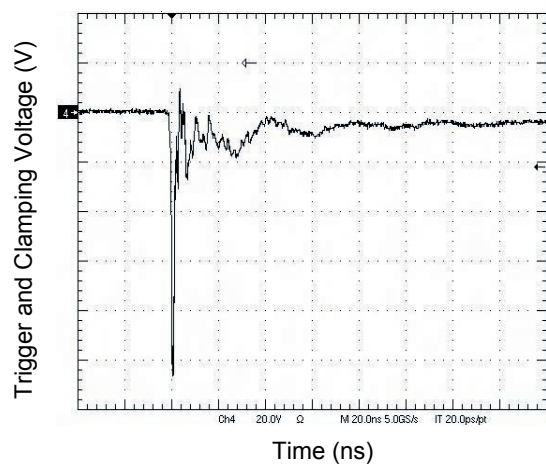
**Figure 3. Pulse Waveform-8/20μs**



**Figure 4. Pulse Waveform-ESD (IEC61000-4-2)**

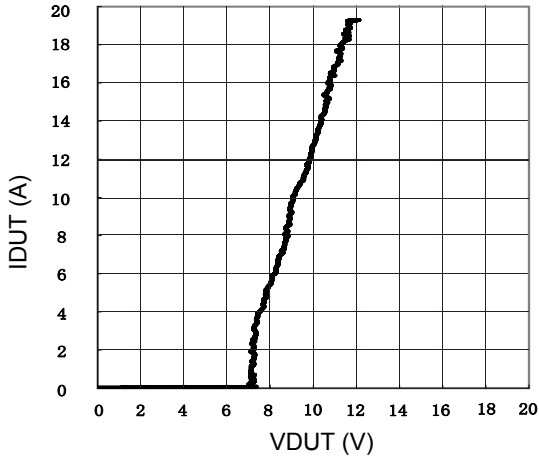


**Figure 5. IEC61000-4-2 +8kV Contact Discharge**

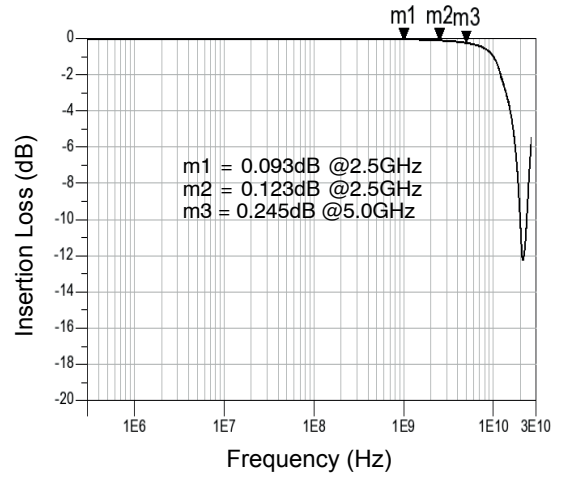


**Figure 6. IEC61000-4-2 -8kV Contact Discharge**

**Typical Characteristic Curves**

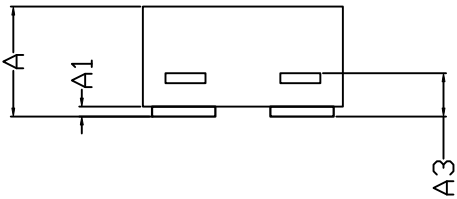
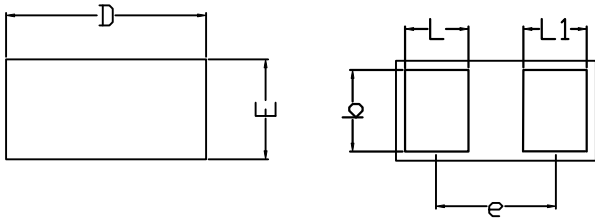


**Figure 7. Transmission Line Pulse ( $t_p=100ns$ )**



**Figure 8. Insertion Loss S21**

**Product 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
A3	0.102 REF		0.004 REF	
D	0.550	0.650	0.022	0.026
E	0.250	0.350	0.010	0.014
b	0.215	0.275	0.008	0.011
L	0.130	0.230	0.005	0.009
L1	0.130	0.230	0.005	0.009
e	0.355 BSC		0.014 BSC	

**Order Information**

Device	Package	Marking	Carrier	Quantity
GSEN3B0013	DFN0603	B	Tape & Reel	10,000pcs / Reel