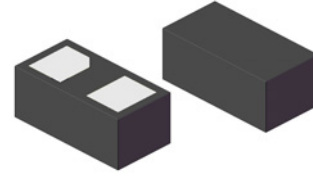
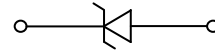


## Features

- 30W peak pulse power ( $t_p=8/20\mu s$ )
- Unidirectional configuration
- R2R + Zener technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance ( $C_j=0.3pF$  typ.)
- Protection one data/power line to:
- IEC 61000-4-2  $\pm 10kV$  contact  $\pm 18kV$  air  
IEC 61000-4-4 (EFT) 40A (5/50ns) IEC  
61000-4-5 (Lightning) 3A (8/20 $\mu s$ )



**DFN0603**



**Schematic Diagram**

## Applications

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

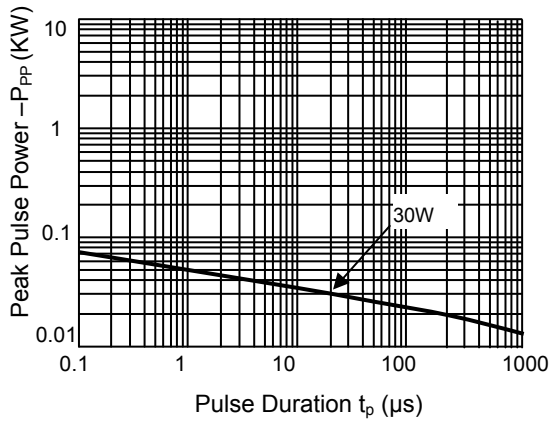
## Absolute Maximum Ratings ( $T_A=25^\circ C$ unless otherwise specified)

Parameter	Symbo	Value1	Unit
Peak Pulse Power ( $T_P=8/20\mu S$ )	PPP	30	W
ESD Contact/Air Discharge (IEC-61000-4-2)	$V_{ESD}$	10/18	kV
Peak Pulse Current ( $t_P=8/20\mu S$ )	$I_{PP}$	3	A
Junction Temperature	$T_J$	-55 to +125	$^\circ C$
Storage Temperature	$T_{STG}$	-55 to +150	$^\circ C$
Maximum Lead Solder Temperature(10 second duration)	$T_L$	260	$^\circ C$

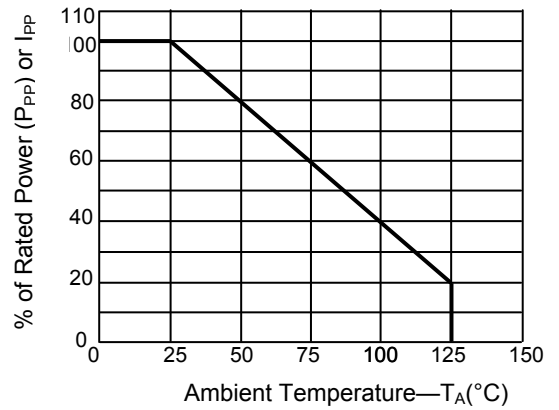
## Electrical Characteristics ( $T_A=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	$V_{RWM}$		-	-	3.6	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	4.0	-	-	V
Reverse Leakage Current	$I_R$	$V_R=3.6V$	-	-	100	nA
Clamping Voltage (IEC 61000-4-5)	$V_C$	$I_{PP}=3A, T_P=8/20\mu S$	-	10	-	V
Clamping Voltage (IEC 61000-4-2)	$V_C$	$V_{ESD}=8kV (I_{TLP}=16A)$	-	12	-	V
Dynamic Resistance	$R_{dyn}$	$I_{TLP}=0A\sim 20A$	-	0.29	-	$\Omega$
Junction Capacitance	$C_J$	$V_R=0V, f=1MHz$	-	0.3	0.5	pF

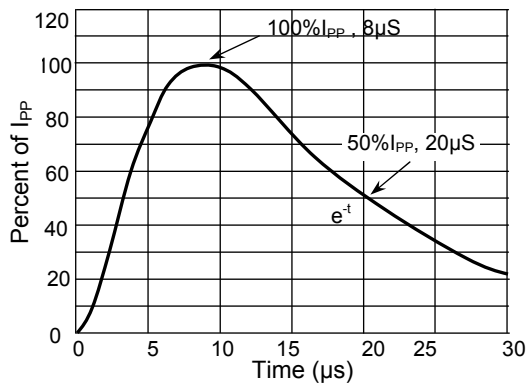
**Typical Characteristic Curves**



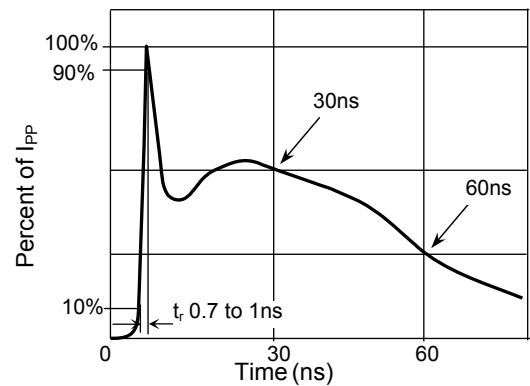
**Figure 1. Peak Pulse Power Rating Curve**



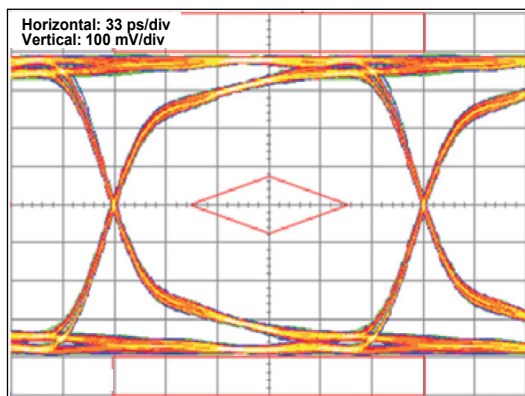
**Figure 2. Pulse Derating Curve**



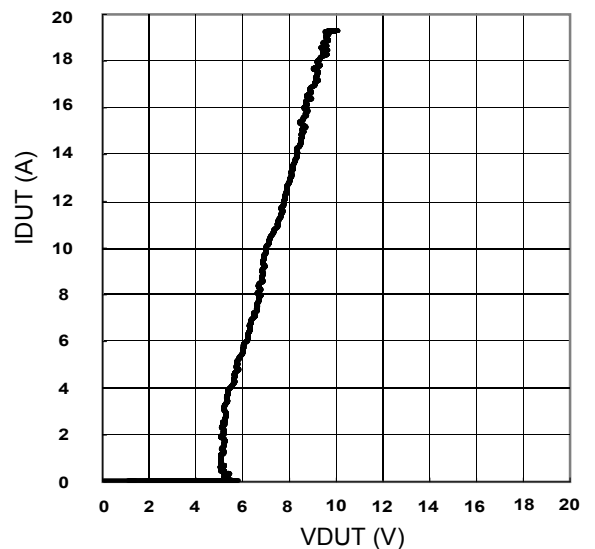
**Figure 3. Pulse Waveform-8/20μs**



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

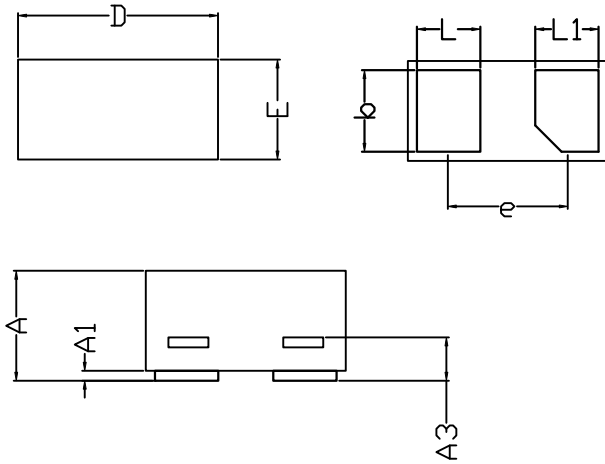


**Figure 5. Eye Diagram - USB3.0 mask at 5.0Gbps per channel (with GSEN3U003)**



**Figure 6. Transmission Line Pulse ( $t_p=100ns$ )**

**Product Dimensions (DFN0603)**



Symbol	Dimensions in millimeters		
	Min	Nom	Max
A	0.230	-	0.330
A1	0.000	-	0.050
A3	0.102 REF		
D	0.550	0.600	0.650
E	0.250	0.300	0.350
b	0.180	0.240	0.280
L	0.120	0.180	0.230
L1	0.120	0.180	0.230
e	0.355 BSC		

**Order Information**

MPN	Package	Marking	Quantity	HSF Status
GSEN3U003	DFN0603	U	15000pcs / Reel	RoHS compliant