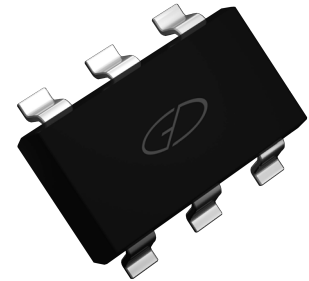


**Features**

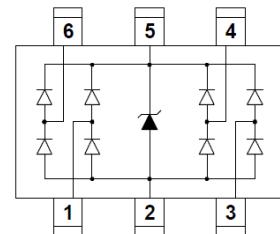
- 80Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance (0.2pF typical I/O to I/O)
- ESD Protection for high-speed data lines to:
  - IEC 61000-4-2  $\pm 15KV$  contact  $\pm 15KV$  air
  - IEC 61000-4-4 (EFT) 40A (5/50ns)
  - IEC 61000-4-5 (Lightning) 6A (8/20 $\mu s$ )



**SOT-23-6L**

**Applications**

- USB 3.0, USB 2.0, MHL
- HDMI 2.0, Display Port 1.3, eSATA
- Unified Display Interface (UDI)
- Digital Visual Interface (DVI)
- High speed serial interfaces



**Schematic Diagram**

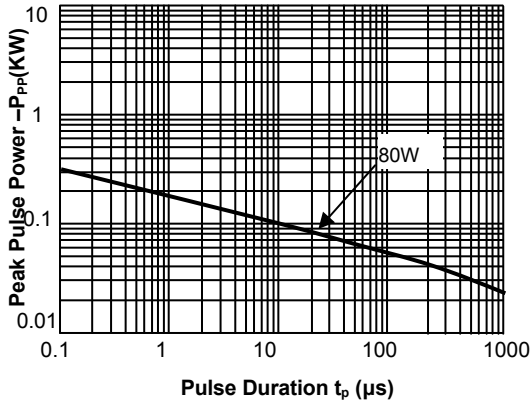
**Absolute Maximum Ratings** ( $T_A=25^\circ C$  unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $T_P=8/20\mu S$ )	$P_{PP}$	80	W
Peak Pulse Current ( $t_P = 8/20\mu S$ )	$I_{PP}$	6	A
Junction Temperature	$T_J$	-55 to +125	$^\circ C$
Storage temperature	$T_{STG}$	-55 to +150	$^\circ C$

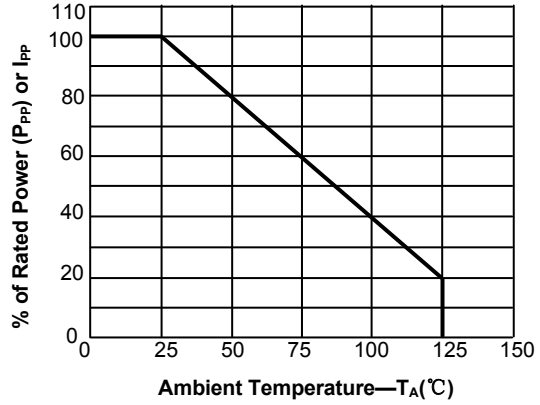
**Electrical Characteristics** ( $T_A=25^\circ C$  unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	$V_{RWM}$	-	-	-	5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	6	6.8	8.5	V
Reverse Leakage Current	$I_R$	$V_R=5V$	-	0.01	1	$\mu A$
Clamping Voltage(SURGE)	$V_C$	$I_{PP}=6A, T_P=8/20\mu S$	-	14	16	V
Trigger Voltage(ESD)	$V_T$	$V_{ESD} = +8kV$	-	90	-	V
Clamping Voltage(ESD)	$V_C$	$V_{ESD} = +8kV$	-	15	-	V
Junction Capacitance	$C_J$	$V_R=0V, f=1MHz, I/O$ to I/O	-	0.2	0.4	pF
	$C_J$	$V_R=0V, f=1MHz, I/O$ to GND	-	0.4	0.8	pF

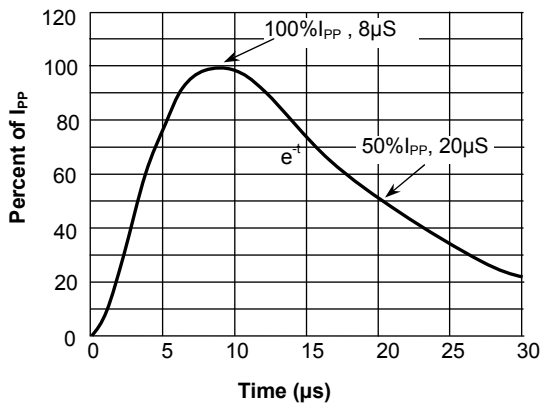
**Typical Characteristic Curves**



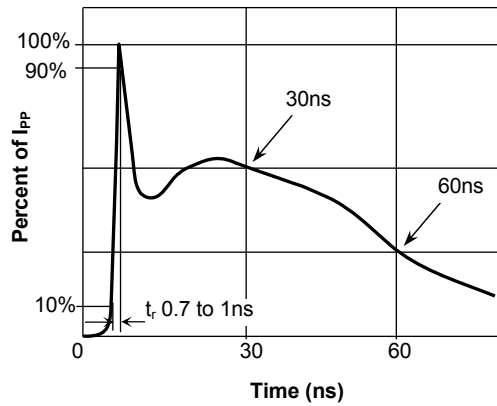
**Fig.1 Peak Pulse Power Rating Curve**



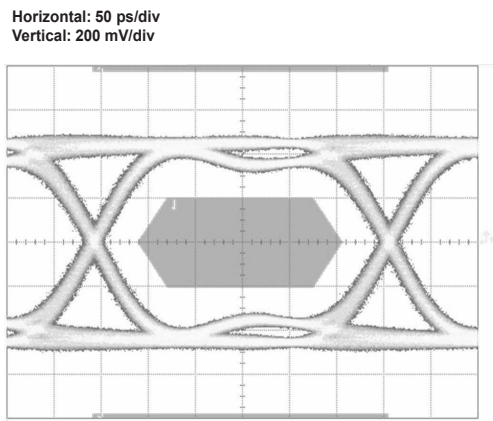
**Fig.2 Pulse Derating Curve**



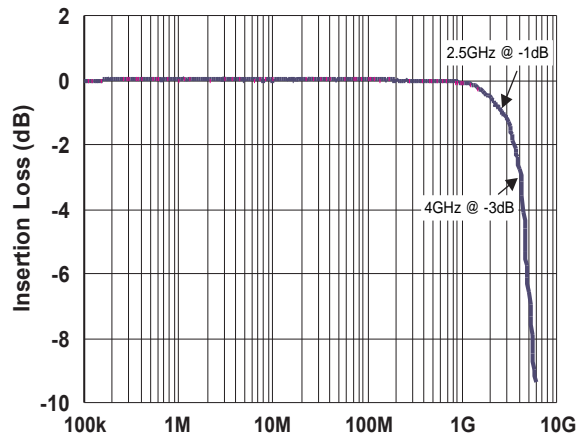
**Fig.3 Pulse Waveform-8/20μs**



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

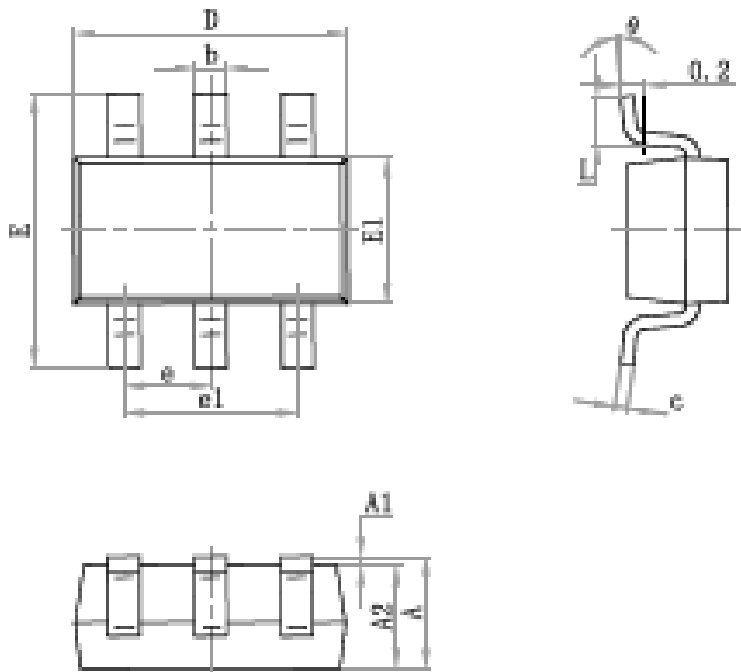


**Fig.5 Eye Diagram - HDMI mask at 3.4Gbps per Channel (with GSER5U002)**



**Fig.6 Insertion Loss S21 - I/O to GND**

**Package Outline Dimensions (SOT-23-6L)**



Symbol	Dimensions in millimeters		Dimensions in inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

**Order Information**

MPN	Package	Marking	Quantity	HSF Status
GSER5U002	SOT-23-6L	05L	3000pcs / Reel	RoHS Compliant