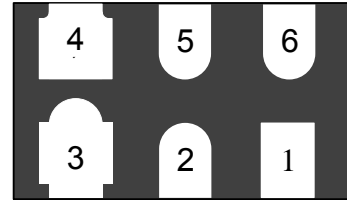
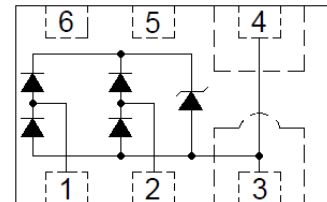


## Features

- 100Watts peak pulse power ( $t_p = 8/20\mu s$ )
- DFN1610 package
- R2R + Zener technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance (0.25pF typical I/O to I/O)
- ESD Protection for high-speed data lines to:
  - IEC 61000-4-2  $\pm 20KV$  contact  $\pm 25KV$  air
  - IEC 61000-4-4 (EFT) 40A (5/50ns)
  - IEC 61000-4-5 (Lightning) 5A (8/20 $\mu s$ )
- RoHS compliant



**DFN1610**



**Schematic Diagram**

## 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

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

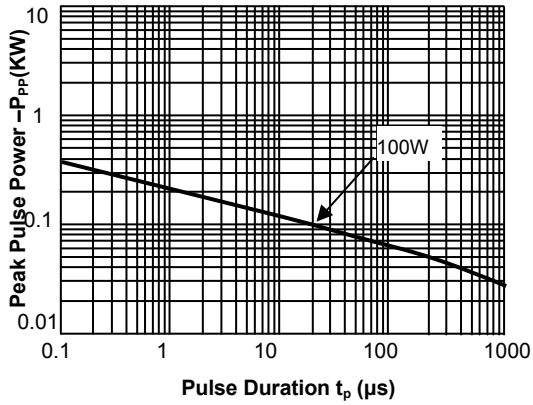
Parameter	Symbol	Value	Unit
Peak Pulse Power ( $T_p=8/20\mu s$ )	$P_{PP}$	100	W
Peak Pulse Current ( $t_p = 8/20\mu s$ )	$I_{PP}$	5	A
Junction Temperature	$T_J$	-55 to +125	$^\circ C$
Storage Temperature	$T_{STG}$	-55 to +150	$^\circ C$

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

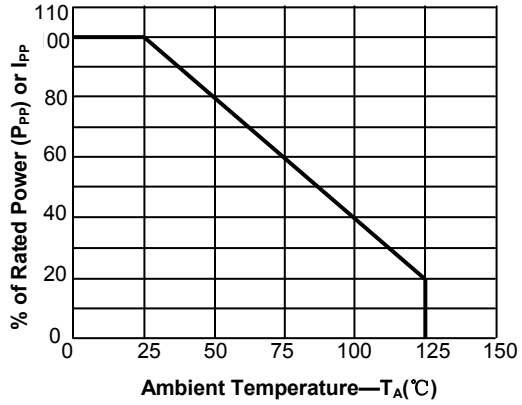
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	$V_{RWM}$	-	-	-	5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	5.6	-	-	V
Reverse Leakage Current	$I_R$	$V_R=5V$	-	0.01	1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP}=1A, T_p=8/20\mu s$	-	8	9.5	V
		$I_{PP}=5A, T_p=8/20\mu s$	-	15	20	V
Trigger 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	$C_J$	$V_R=0V, f=1MHz, I/O$ to I/O	-	0.25	0.4	pF
	$C_J$	$V_R=0V, f=1MHz, I/O$ to GND	-	0.4	0.8	pF

**Typical Characteristic Curves**

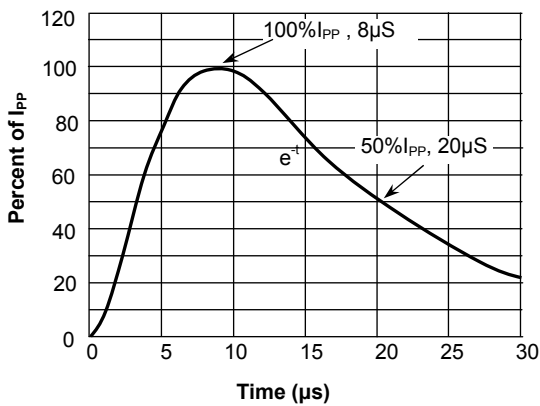
**Fig.1 Peak Pulse Power Rating Curve**



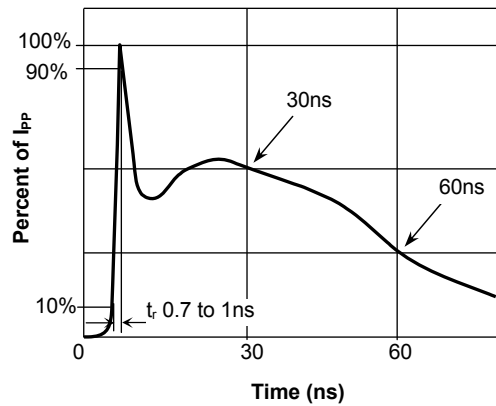
**Fig.2 Pulse Derating Curve**



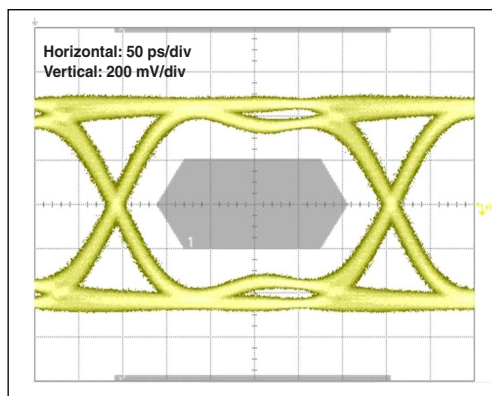
**Fig.3 Pulse Waveform-8/20 $\mu s$**



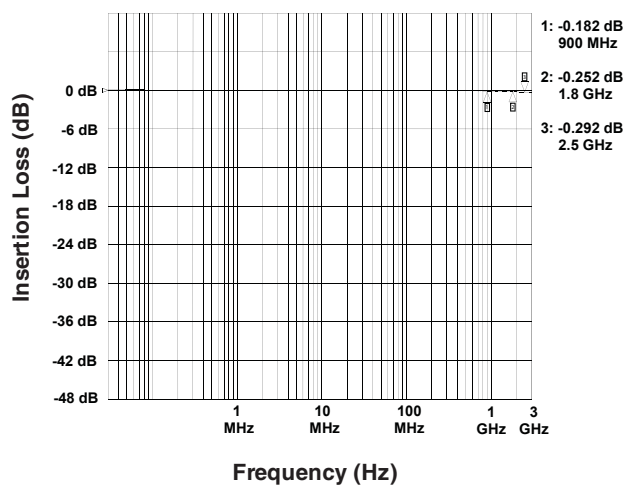
**Fig.4 Pulse Waveform-ESD(IEC61000-4-2)**



**Fig.5 Eye Diagram - HDMI mask at 3.4Gbps per channel (with GSCLAMP0522P)**



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



## Typical Characteristic Curves

Fig.7 IEC61000-4-2 +8kV Contact Discharge

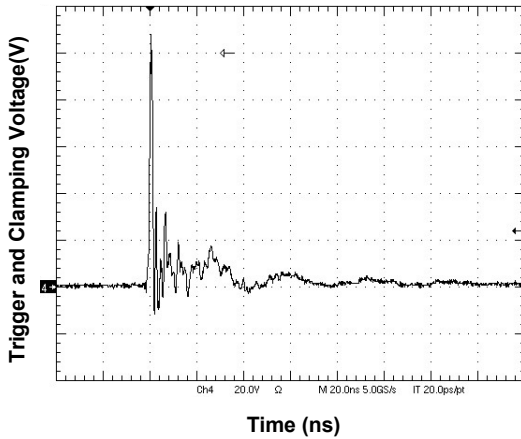
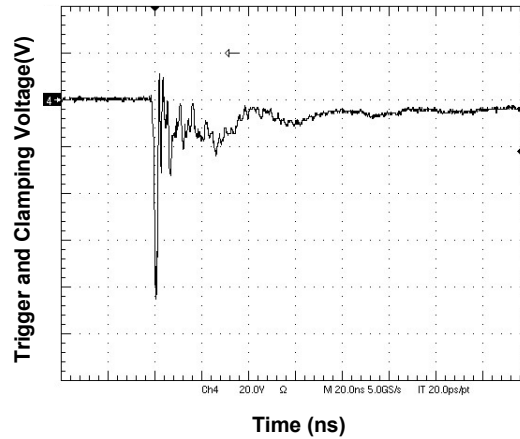
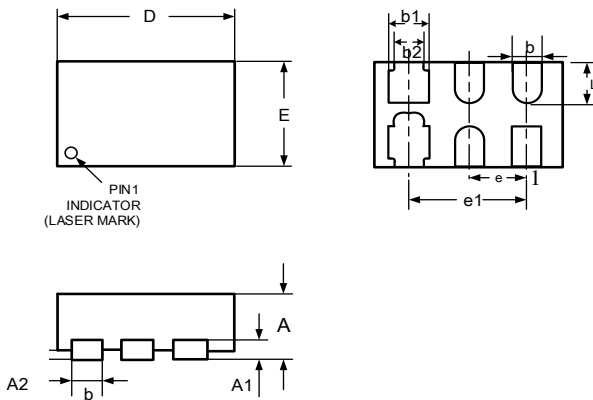


Fig.8 IEC61000-4-2 -8kV Contact Discharge

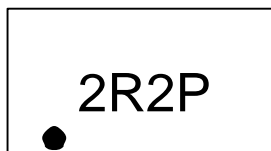


## Product Dimensions



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
D	1.55	1.65	0.061	0.065
E	0.95	1.05	0.037	0.041
L	0.33	0.43	0.013	0.017
b	0.15	0.25	0.006	0.010
b1	0.35	0.45	0.014	0.018
b2	0.25	0.35	0.010	0.014
e	0.50BSC		0.020BSC	
e1	1.00BSC		0.039BSC	
A	0.45	0.55	0.018	0.022
A1	0.15REF		0.006REF	
A2	0.00	0.05	0.000	0.002

## Marking



## Order Information

Device	Package	Carrier	Quantity	HSF Status
SP0522P	DFN1610	Tape & Reel (7")	3000pcs / Reel	RoHS Compliant