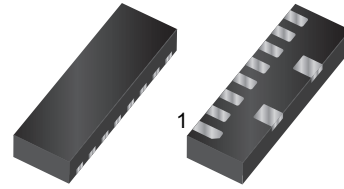
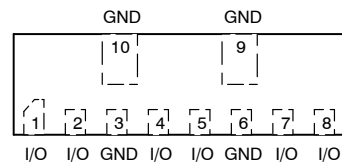


Features

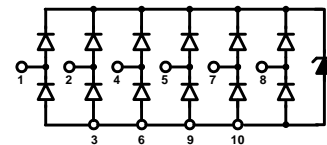
- DFN3310 package
- Protects up to 6-Lines operating at 5V
- R2R+Zener technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance (0.15pF typical I/O to I/O)
- ESD Protection for high-speed data lines to:
IEC 61000-4-2 ±8kV contact ±15kV air
- RoHS compliant



DFN3310



Pin Configuration



Schematic Diagram

Applications

- USB 3.0/3.1
- HDMI 1.4/2.0, Display Port 1.3, eSATA
- Unified Display Interface (UDI)
- Digital Visual Interface (DVI)
- High speed serial interfaces

Absolute Maximum Ratings

(T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Junction Temperature	T _J	-55 to +125	°C
Storage Temperature	T _{STG}	-55 to +150	°C
Lead Soldering Temperature	T _L	260 (10sec.)	°C
IEC 61000-4-2 Contact (ESD)	VESD	±8	kV
IEC 61000-4-2 Air (ESD)	VESD	±15	kV

Electrical Characteristics

(T_A=25°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	7.2	9.5	V
Reverse Leakage Current	I _R	V _R =5V		0.01	1	µA
Clamping Voltage (IEC 61000-4-5)	V _C	I _{PP} =3A, T _P =8/20µS		10		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		0.15		pF
	C _J	V _R =0V, f=1MHz, I/O to GND		0.35		pF

Typical Characteristic Curves

Fig.1 Pulse Waveform-ESD(IEC61000-4-2)

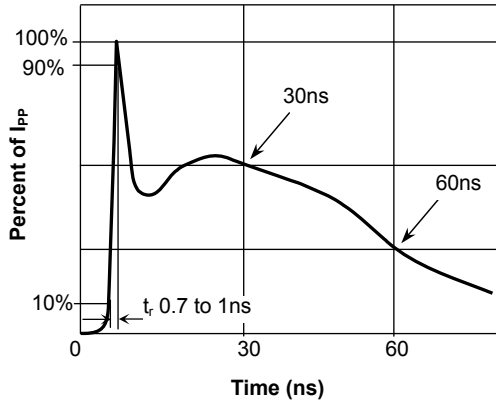


Fig.2 IEC61000-4-2 +8kV Contact ESD Clamping Waveform

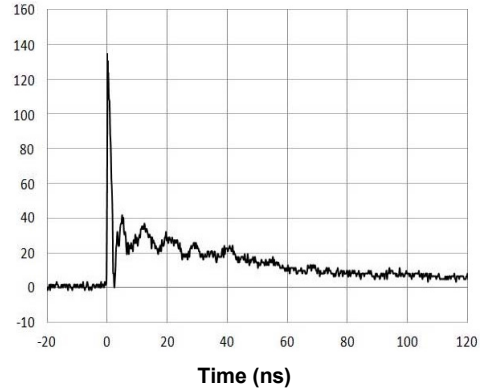


Fig.3 Eye Diagram - USB3.1 at 10Gbps per channel (with SP3310PE)

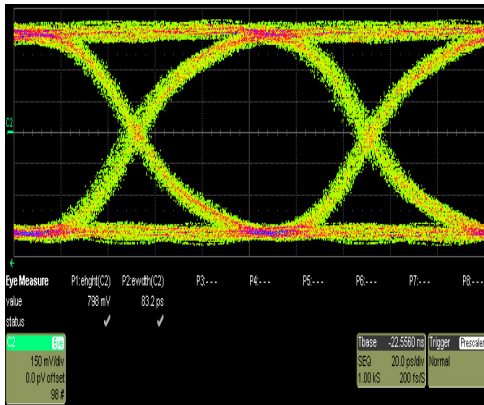
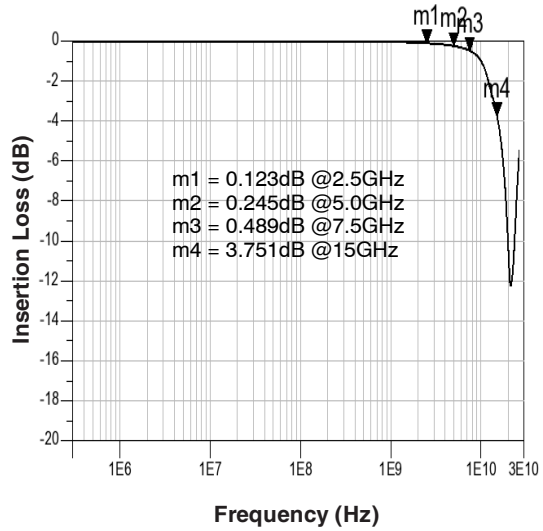
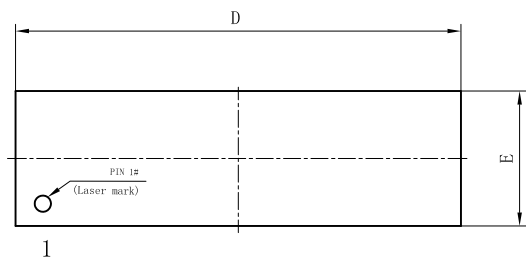


Fig.4 Insertion Loss S21 - I/O to I/O

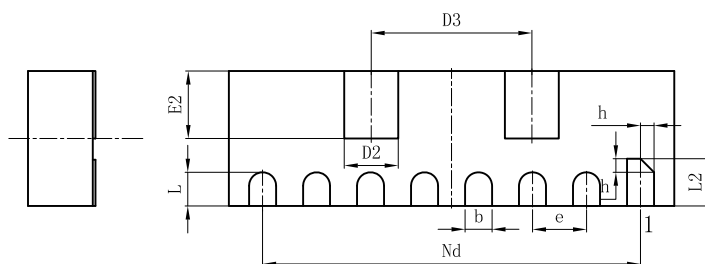


Package Outline Dimensions

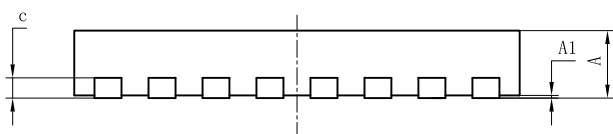
DFN3310



TOP VIEW



BOTTOM VIEW



SIDE VIEW

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	—	0.02	0.05
b	0.15	0.20	0.25
c	0.100	0.152	0.200
D	3.25	3.30	3.35
D2	0.30	0.35	0.40
D3	1. 19BSC		
e	0. 40BSC		
Nd	2. 80BSC		
E	0.95	1.00	1.05
E2	0.45	0.50	0.55
L	0.20	0.25	0.30
L2	0.30	0.35	0.40
h	0.05	0.10	0.15

Marking



Order Information

Device	Package	Carrier	Quantity	HSF Status
SP3310PE	DFN3310	Tape & Reel (7")	3000pcs / Reel	RoHS Compliant