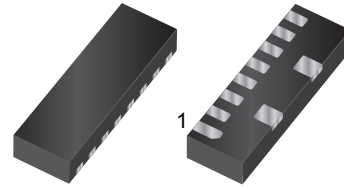
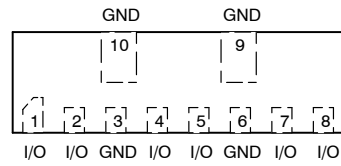


### Features

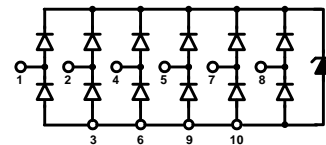
- DFN3310 package
- Protects up to 6-Lines operating at 5V
- R2R+Zener technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance (0.15pF typical I/O to I/O)
- ESD Protection for high-speed data lines to:  
IEC 61000-4-2 ±8kV contact ±15kV air
- RoHS compliant



**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<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Junction Temperature	T <sub>J</sub>	-55 to +125	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C
Lead Soldering Temperature	T <sub>L</sub>	260 (10sec.)	°C
IEC 61000-4-2 Contact (ESD)	VESD	±8	kV
IEC 61000-4-2 Air (ESD)	VESD	±15	kV

### Electrical Characteristics

(T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	V <sub>RWM</sub>				5	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA	6	7.2	9.5	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> =5V		0.01	1	µA
Clamping Voltage (IEC 61000-4-5)	V <sub>C</sub>	I <sub>PP</sub> =3A, T <sub>P</sub> =8/20µS		10		V
Trigger Voltage (IEC 61000-4-2)	V <sub>T</sub>	V <sub>ESD</sub> =8kV		135		V
Clamping Voltage (IEC 61000-4-2)	V <sub>C</sub>	V <sub>ESD</sub> =8kV		20		V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz, I/O to I/O		0.15		pF
	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz, I/O to GND		0.35		pF

### Typical Characteristic Curves

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

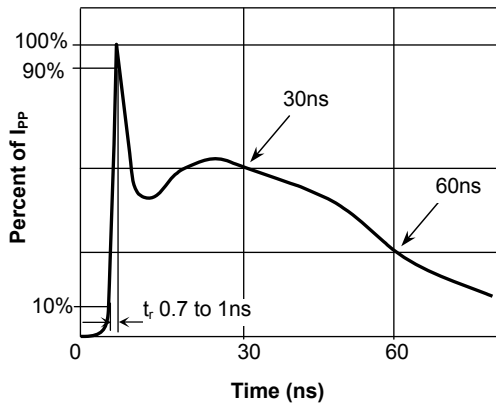


Fig.2 IEC61000-4-2 +8kV Contact ESD Clamping Waveform

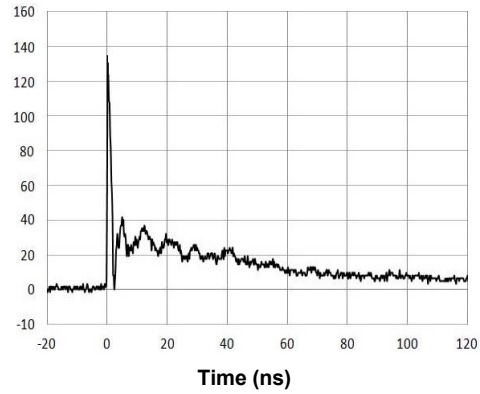


Fig.3 Eye Diagram - USB3.1 at 10Gbps per channel (with MCCLAMP3310PE)

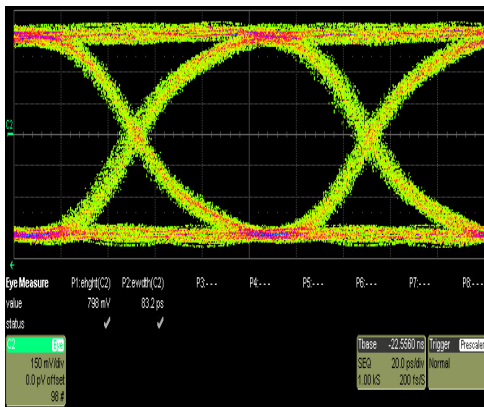
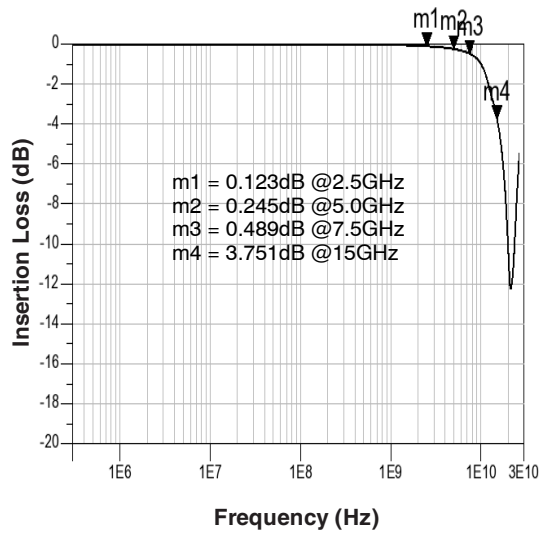
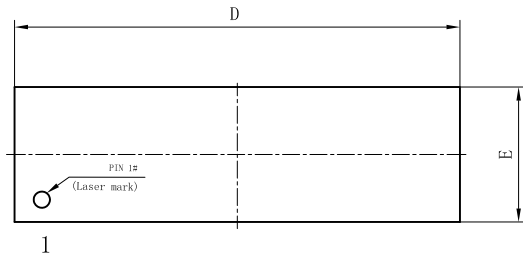


Fig.4 Insertion Loss S21 - I/O to I/O

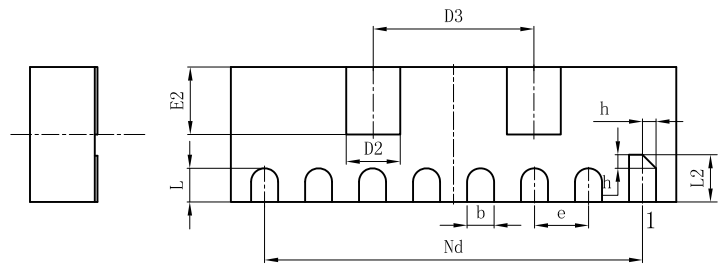


### Dimensions

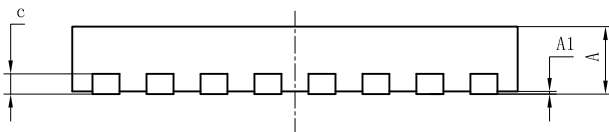
#### DFN3310



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
MCCLAMP3310PE	DFN3310	Tape & Reel (7")	3000pcs / Reel	RoHS Compliant