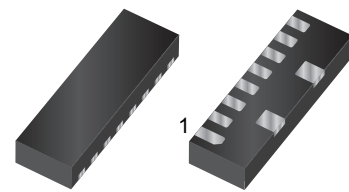
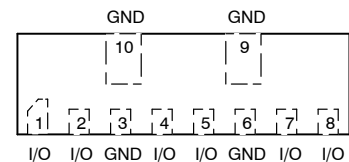
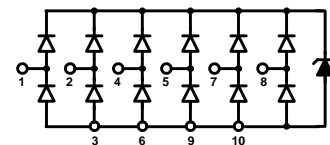


## Features

- 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

## 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


**DFN3310**

**Pin Configuration**

**Schematic Diagram**

## Absolute Maximum Ratings

( $T_A=25^{\circ}\text{C}$ , Unless otherwise specified.)

Parameter	Symbol	Value	Unit
Junction Temperature	$T_J$	-55 to +125	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{STG}}$	-55 to +150	$^{\circ}\text{C}$
Lead Soldering Temperature	$T_L$	260 (10sec.)	$^{\circ}\text{C}$
Peak Pulse Current ( $t_P = 8/20\mu\text{S}$ )	$I_{\text{PP}}$	3	A
IEC 61000-4-2 Contact (ESD)	VESD	±8	kV
IEC 61000-4-2 Air (ESD)	VESD	±15	kV

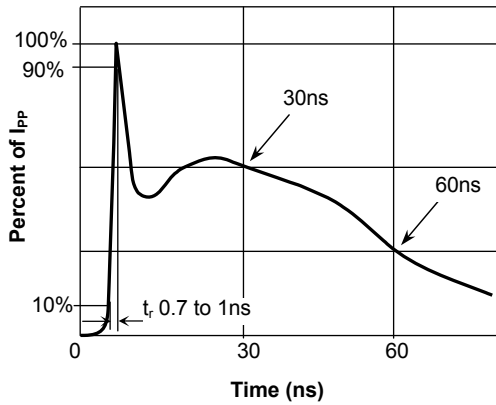
## Electrical Characteristics

( $T_A=25^{\circ}\text{C}$ , Unless otherwise specified.)

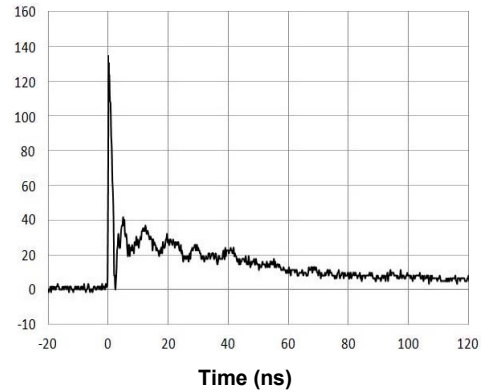
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	$V_{\text{RWM}}$				5	V
Reverse Breakdown Voltage	$V_{\text{BR}}$	$I_T=1\text{mA}$	6	7.2	9.5	V
Reverse Leakage Current	$I_R$	$V_R=5\text{V}$		0.01	1	$\mu\text{A}$
Clamping Voltage (IEC 61000-4-5)	$V_C$	$I_{\text{PP}}=3\text{A}$ , $T_P=8/20\mu\text{S}$		10		V
Trigger Voltage (IEC 61000-4-2)	$V_T$	$V_{\text{ESD}}=8\text{kV}$		135		V
Clamping Voltage (IEC 61000-4-2)	$V_C$	$V_{\text{ESD}}=8\text{kV}$		20		V
Junction Capacitance	$C_J$	$V_R=0\text{V}$ , $f=1\text{MHz}$ , I/O to I/O		0.15		pF
	$C_J$	$V_R=0\text{V}$ , $f=1\text{MHz}$ , I/O to GND		0.35		pF

### Typical Characteristic Curves

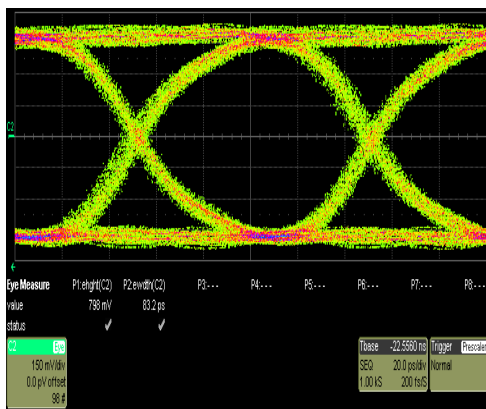
**Fig.1 Pulse Waveform-ESD(IEC61000-4-2)**



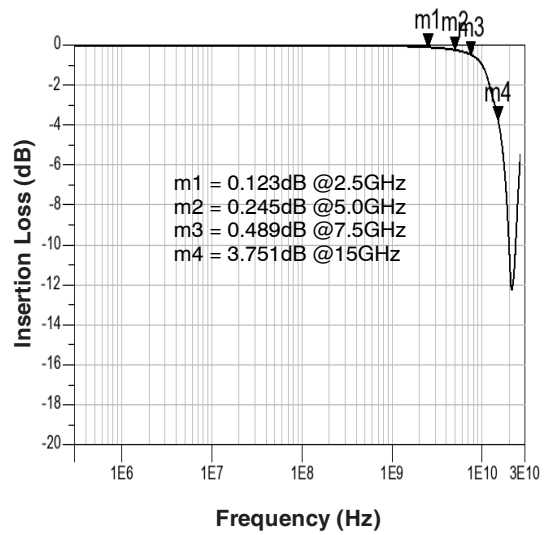
**Fig.3 IEC61000-4-2 +8kV Contact ESD Clamping Waveform**



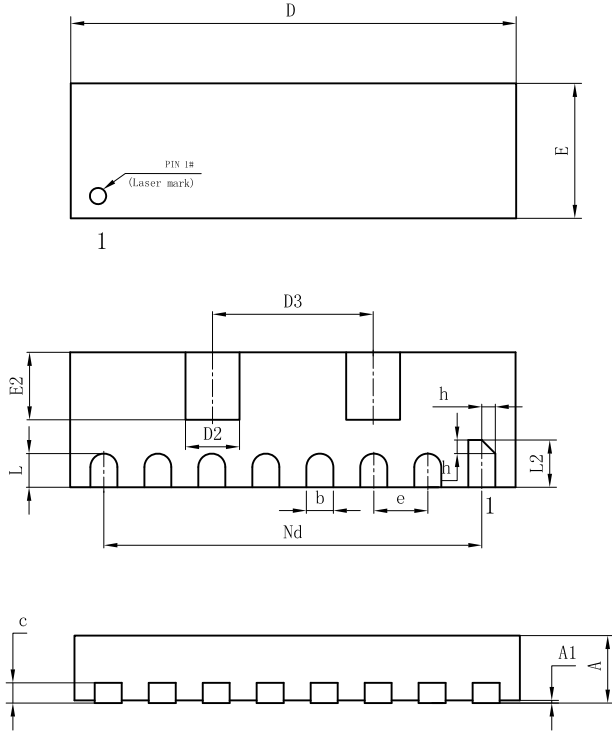
**Fig.5 Eye Diagram - USB3.1 at 10Gbps per channel (with MDFN10A056U)**



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



### Product Dimensions



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

### Order Information

Device	Package	Carrier	Quantity	HSF Status
MDFN10A056U	DFN3310	Tape & Reel (7")	3000pcs / Reel	RoHS Compliant

### Marking

