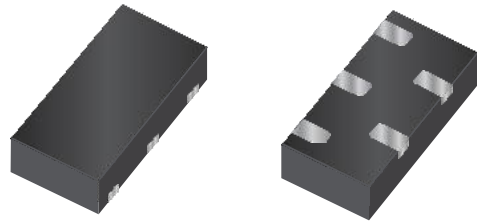


## »Features

- 45Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Tiny DFN2010 package
- Protect up to 4-lines
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance ( $C_j = 0.28pF$  typ. I/O to I/O)
- IEC 61000-4-2  $\pm 12kV$  contact  $\pm 15kV$  air
- IEC 61000-4-4 (EFT) 40A(5/50ns)
- IEC 61000-4-5 (Lightning) 3.5A(8/20 $\mu s$ )



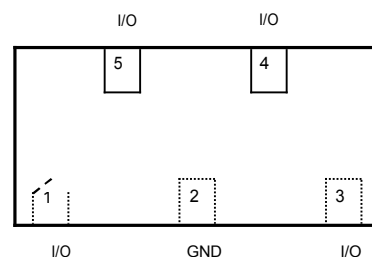
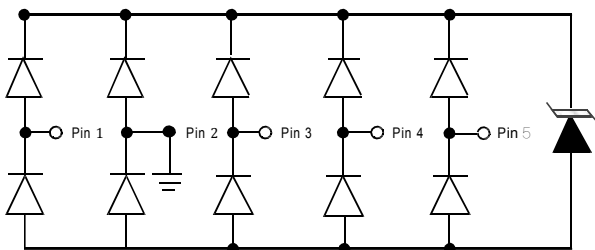
## »Applications

- USB 3.0/3.1, Type C
- HDMI 1.4/2.0, Display Port 1.3
- Unified Display interface
- Digital visual interface

## »Mechanical Data

- DFN2010 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

## »Schematic & PIN Configuration



»Absolute Maximum Rating

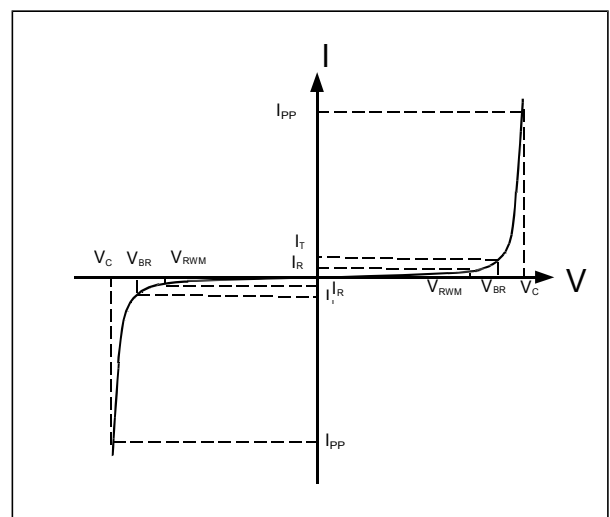
Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{PP}$	45	Watts
Peak Pulse Current ( $t_p = 8/20\mu s$ )(note1)	$I_{PP}$	3.5	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	15 12	kV
Lead Soldering Temperature	$T_L$	260(10seconds)	°C
Junction Temperature	$T_J$	-55 to + 125	°C
Storage Temperature	$T_{stg}$	-55 to + 125	°C

»Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	6.0	7.2	9.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V, T = 25^\circ C$		0.1	0.5	$\mu A$
Peak Pulse Current	$I_{PP}$	$t_p = 8/20\mu s$			3.5	A
Clamping Voltage	$V_C$	$I_{PP} = 3.5A, t_p = 8/20\mu s$			13	V
Junction Capacitance	$C_j$	$V_R = 0V, f = 1MHz$ I/O to I/O		0.28	0.4	pF
		$V_R = 0V, f = 1MHz$ I/O to GND		0.28	0.4	pF

»Electrical Parameters (TA = 25°C unless otherwise noted)

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current



Note: 8/20 $\mu s$  pulse waveform.

»Typical Characteristics

Fig.1 IEC61000-4-2 Waveform

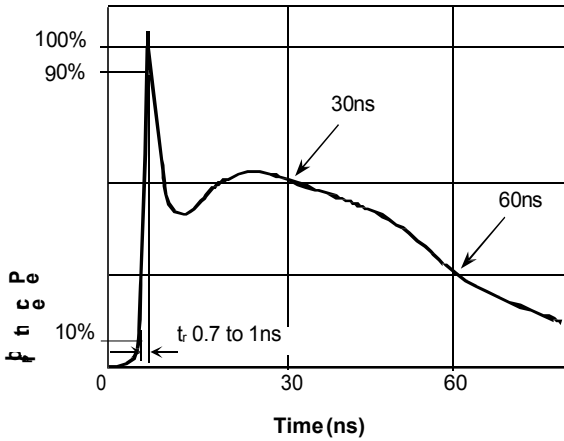


Fig.2 IEC61000-4-2 +8kV ContactESD Clamping Waveform

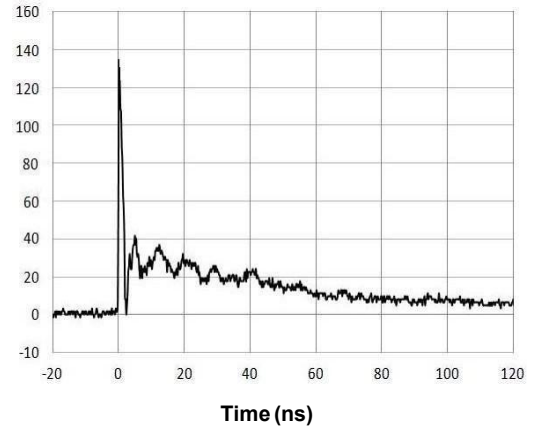


Fig.3 Eye Diagram - USB3.1 at 10Gbps per channel

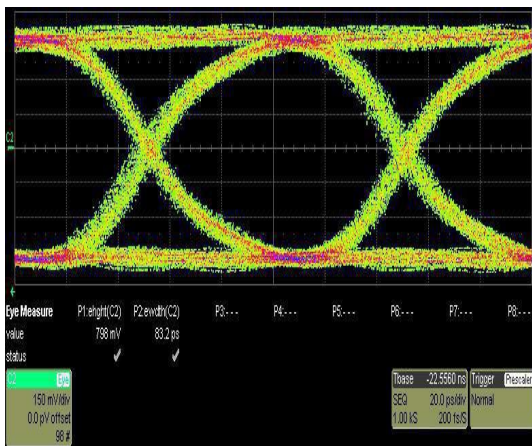
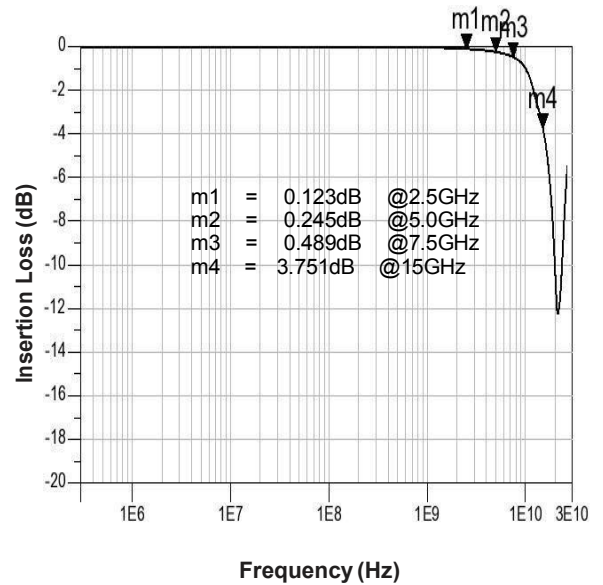
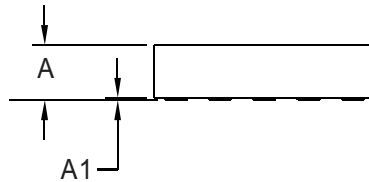
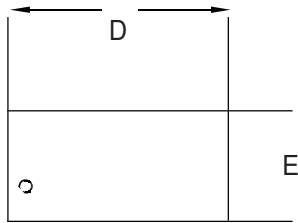


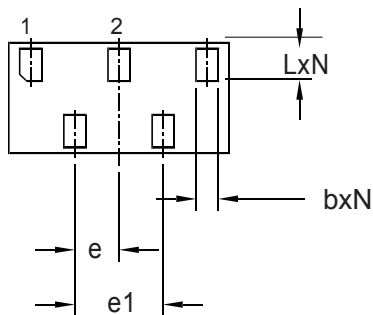
Fig.4 Insertion Loss S21 - I/O to I/O



»Outline Drawing – DFN2010



Dim	Millimeters		
	Min	Nom	Max
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
b	0.15	0.20	0.25
D	1.95	2.00	2.05
E	0.95	1.00	1.05
e	0.40 BSC		
e1	0.80 BSC		
L	0.25	0.30	0.35
N	5		



»Marking



»Ordering information

Order code	Package	Base qty	Delivery mode
BDFN2010A054R	DFN2010	3000	Tape and reel