

Ultra Low Capacitance TVS Diode Array

Features

- Protect up to 4-lines
- Low operating voltage: 5V
- solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 22\text{kV}$
Contact discharge: $\pm 22\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning)3.5A (8/20 μs)
- RoHS Compliant

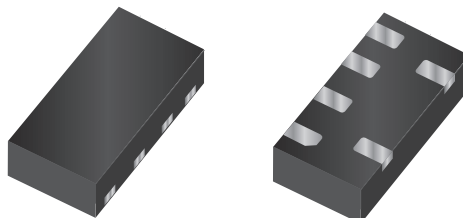
Applications

- USB Ports
- SIM Ports
- Smart Phones
- Wireless Systems
- Set-top box and digital TV
- Digital video interface (DVI)
- Ethernet 10/100/1000 Base T

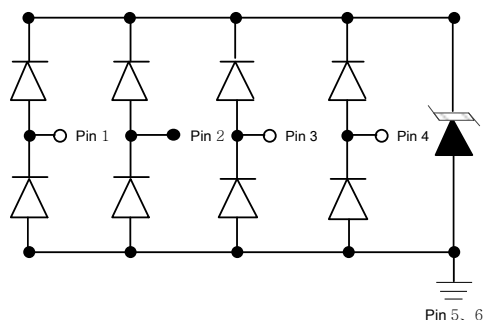
Mechanical Characteristics

- Package:DFN1710
- Lead Finish: Matte Tin
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel:3000pcs
- Reel Size:7inch
- Device Marking:5N

Dimensions DFN1710



Pin Configuration



Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	250	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 22	kV
ESD per IEC 61000-4-2 (Contact)		± 22	
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STJ}	-55 to +125	°C

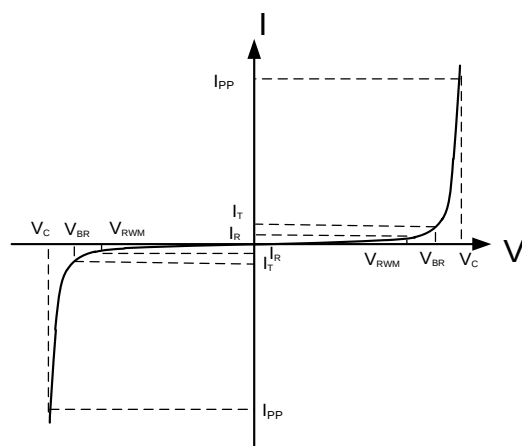
Electrical Characteristics (TA=25°C unless otherwise specified)

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	8.0		V
Reverse Leakage Current	I_R	$V_{RWM}=5V, T=25^\circ C$		0.1	0.5	μA
Peak Pulse Current	I_{PP}	$t_p=8/20\mu s$			3.5	A
Clamping Voltage	V_C	$I_{PP}=3.5A, t_p=8/20\mu s$		10	15	V
Junction Capacitance	C_j	$V_R=0V, f=1MHz$ I/O to I/O		0.35		pF
		$V_R=0V, f=1MHz$ I/O to GND		0.70		pF

Electrical Parameters (TA=25°C unless otherwise specified)

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 μs pulse waveform.



Typical Performance Characteristics (TA=25°C unless otherwise specified)

Fig.1 IEC61000-4-2 Waveform

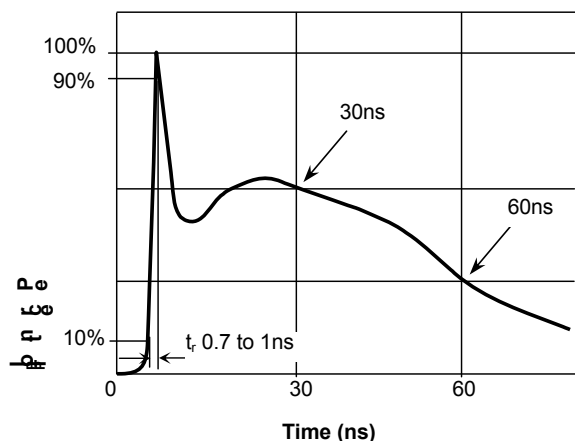


Fig.2 IEC61000-4-2 +8kV Contact ESD Clamping Waveform

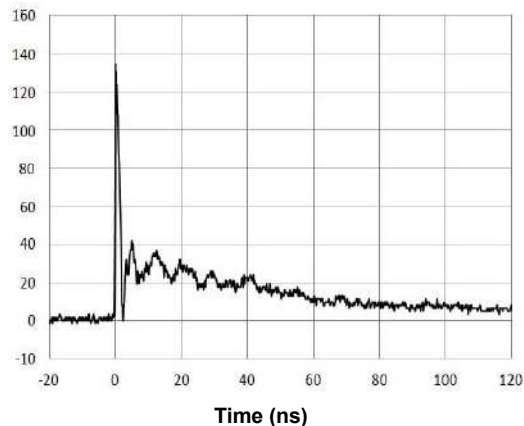


Fig.3 Eye Diagram - USB3.1 at 10Gbps per channel

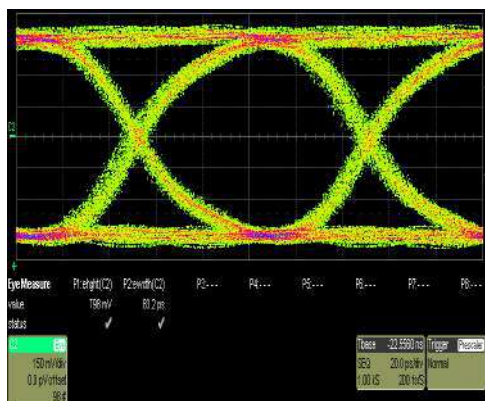
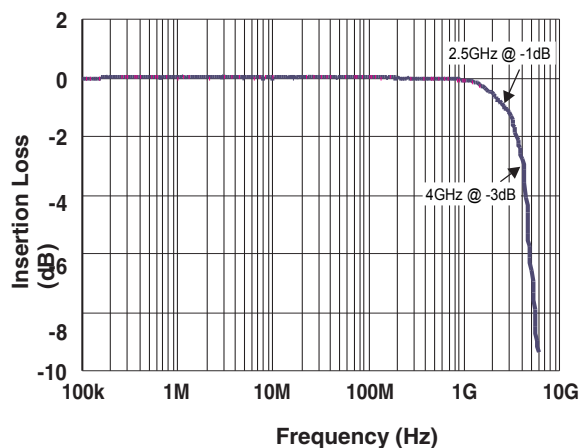
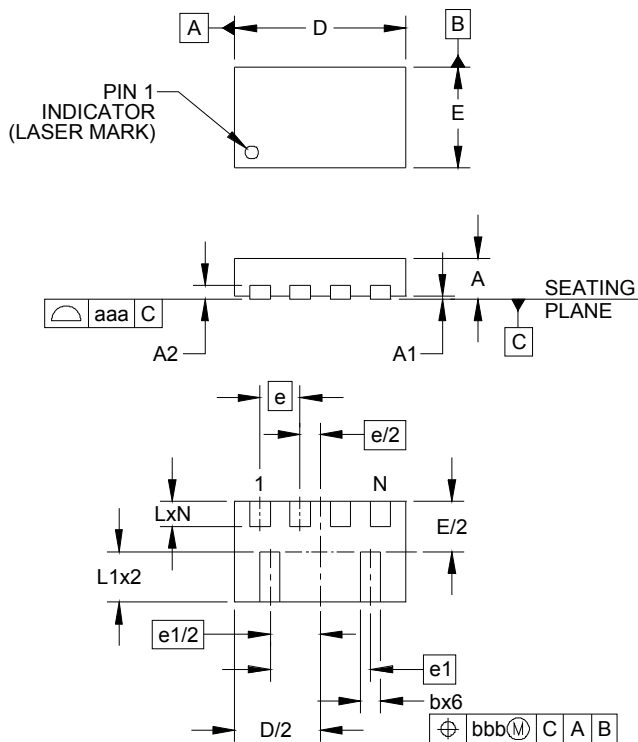


Fig.4 Insertion Loss S21 - I/O to I/O



DFN1710 Package Outline Drawing



DIM	DIMENSIONS		
	MIN	NOM	MAX
A	0.37	0.40	0.43
A1	0.00	0.02	0.05
A2		(0.13)	
b	0.15	0.20	0.25
D	1.65	1.70	1.78
E	0.95	1.00	1.08
e	0.40 BSC		
e1	1.00 BSC		
L	0.20	0.25	0.30
L1	0.45	0.50	0.55
N	4		
aaa	0.08		
bbb	0.10		

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.