

Features

- 30Watts peak pulse power ($t_p = 8/20\mu s$)
- Tiny DFN3810 package
- Protect up to 8-lines
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance ($C_j = 0.2pF$ 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) 3A (8/20 μs)



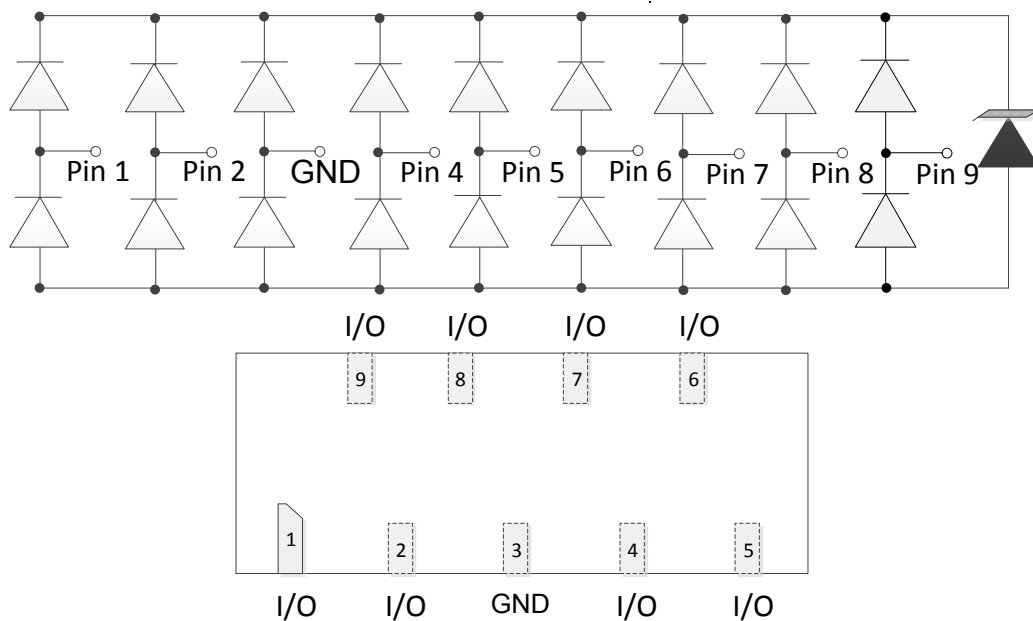
Applications

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

Mechanical Data

- DFN3810 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Absolute Maximum Rating

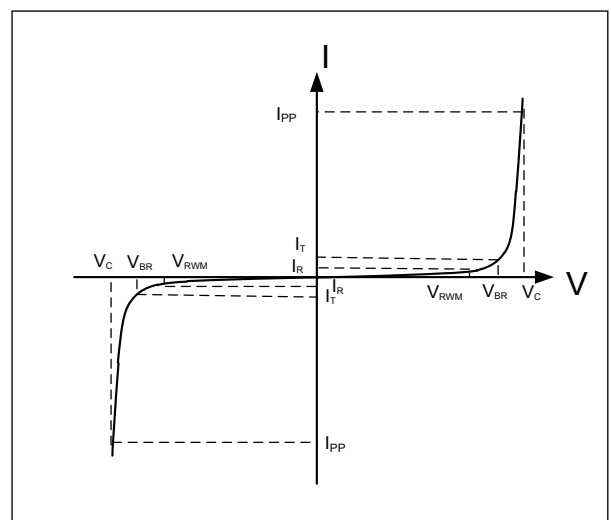
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	30	Watts
Peak Pulse Current ($t_p = 8/20\mu s$) (note1)	I_{PP}	3	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	15	kV
ESD per IEC 61000-4-2 (Contact)		12	
Lead Soldering Temperature	T_L	260(10seconds)	$^{\circ}C$
Junction Temperature	T_J	-55 to + 125	$^{\circ}C$
Storage Temperature	T_{stg}	-55 to + 125	$^{\circ}C$

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	μA
Peak Pulse Current	I_{PP}	$t_p = 8/20\mu s$			3	A
Clamping Voltage	V_C	$I_{PP} = 3A, t_p = 8/20\mu s$			10	V
Junction Capacitance	C_j	$V_R = 0V, f = 1MHz$ I/O to I/O		0.2		pF
		$V_R = 0V, f = 1MHz$ I/O to GND		0.2		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 μs pulse waveform.



Typical Characteristics

Fig.1 IEC61000-4-2 Waveform

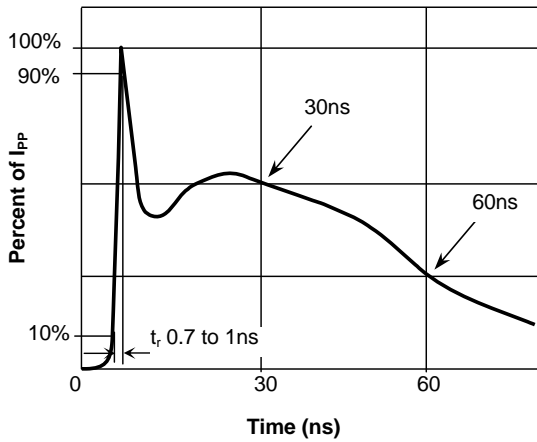


Fig.2 IEC61000-4-2 +8kV Contact ESD Clamping Waveform

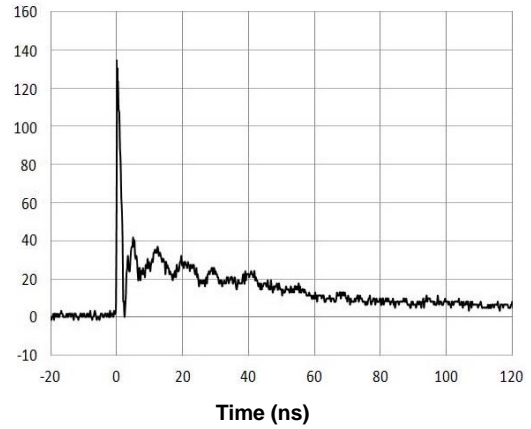


Fig.3 Eye Diagram - USB3.1 at 10Gbps per channel

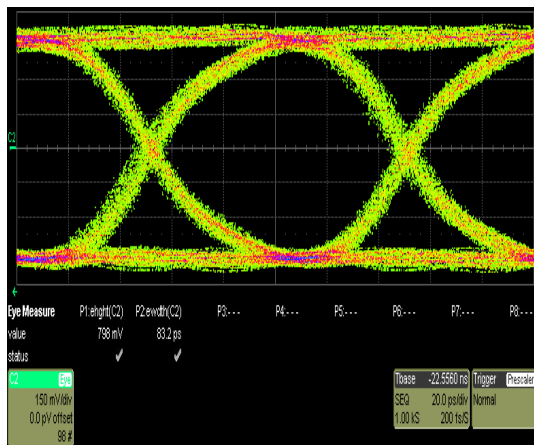
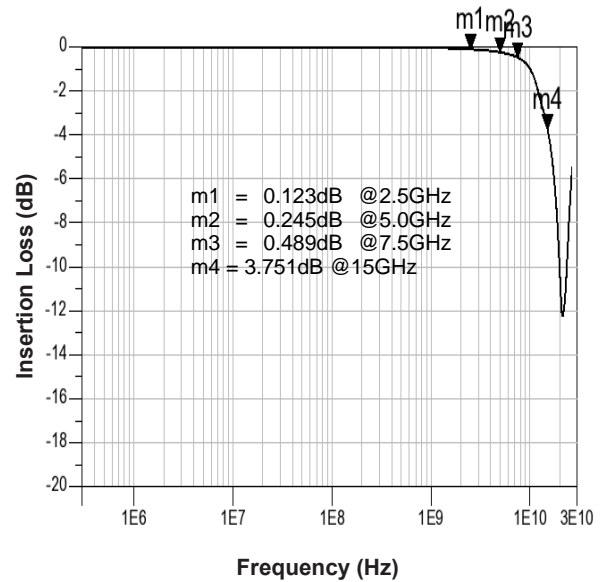
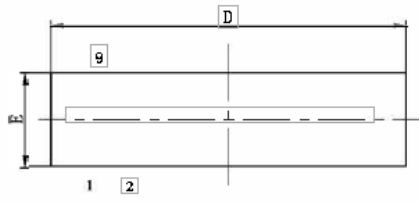
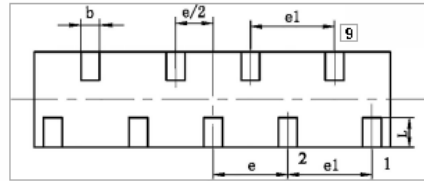
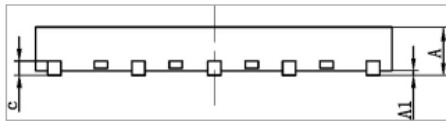
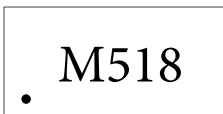


Fig.4 Insertion Loss S21 - I/O to I/O



Outline Drawing – DFN3810

TOP VIEW

BOTTOM VIEW

SIDE VIEW

Dim	Millimeters		
	Min	Nom	Max
A	0.45	0.50	0.55
A1	—	0.02	0.05
b	0.15	0.20	0.25
c	0.10	0.15	0.20
D	3.75	3.80	3.90
e	0.80 BSC		
e1	0.90 BSC		
E	0.90	1.00	1.10
L	0.20	0.30	0.40

Marking

Ordering information

Order code	Package	Base qty	Delivery mode
RL38109Q0508LC	DFN3810	3000	Tape and reel

