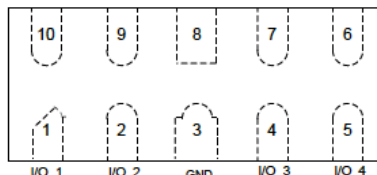


Features

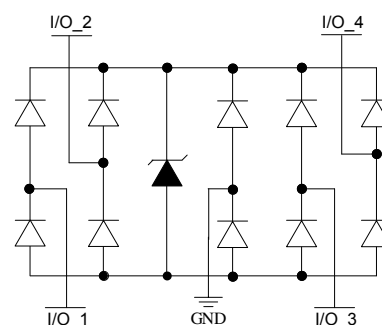
- Bidirectional configurations
- Low clamping voltage
- Low leakage current
- Low capacitance
- Protection high-speed data lines to:
 - IEC 61000-4-2 $\pm 8\text{kV}$ contact $\pm 17\text{kV}$ air
 - IEC 61000-4-4 (EFT) 40A (5/50ns)
 - Cable Discharge Event (CDE)



Pin Assignment



DFN2510



Schematic Diagram

Applications

- USB2.0/3.0/3.1
- HDMI2.0/2.1
- S-ATA
- PCI Express, MDDI ports,
- DVI

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD Contact/Air Discharge (IEC-61000-4-2)	V_{ESD}	$\pm 8/\pm 17$	kV
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	6	A
Junction Temperature	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	V_{RWM}	-	-	-	3.3	V
Reverse Leakage Current	I_{R}	$V_{\text{R}}=3.3\text{V}$	-	0.1	1.0	μA
Trigger Voltage	V_{t1}	$I_{\text{t1}}=1\text{mA}$	6	-	9	V
Holding Voltage	V_{h}	$I_{\text{h}}=50\text{mA}$	2.0	-	3.0	V
Clamping Voltage	V_{C}	$I_{\text{PP}}=6\text{A}, t_p=8/20\mu\text{s}$	-	5.0	-	V
	V_{C}	$I_{\text{PP}}=8\text{A}, t_p=100\text{ns}^1$	-	5.2	-	V
	V_{C}	$I_{\text{PP}}=16\text{A}, t_p=100\text{ns}^1$	-	7.5	-	V
Dynamic Resistance (Contact, I/O to GND)	R_{dyn}	IEC61000-4-2 0-6KV	-	0.25	-	Ω
Junction Capacitance (I/O to GND)	C_{J}	$V_{\text{R}}=0\text{V}, f=1\text{MHz}$	-	0.18	0.3	pF
Junction Capacitance (I/O to I/O)	C_{J}	$V_{\text{R}}=0\text{V}, f=1\text{MHz}$	-	0.1	0.2	pF

Notes: (1) Measurements performed using a 100ns Transmission Line Pulse (TLP) system.

Typical Characteristic Curves

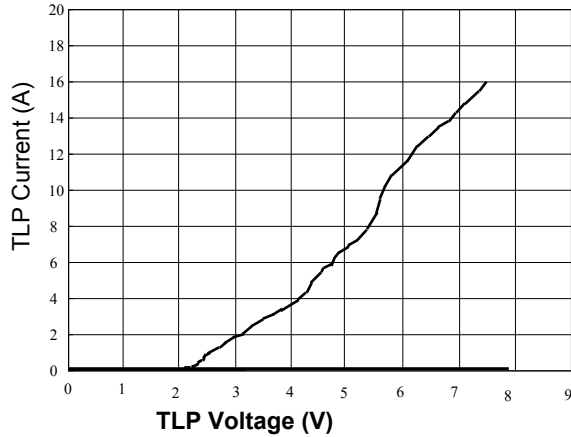


Figure 1. TLP I/O to GND

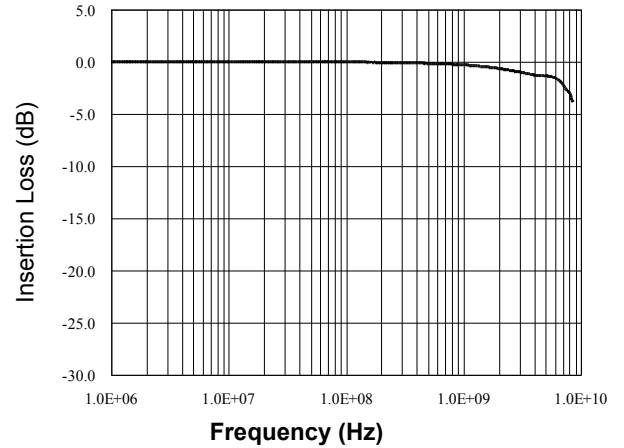


Figure 2. Insertion Loss I/O to Ground

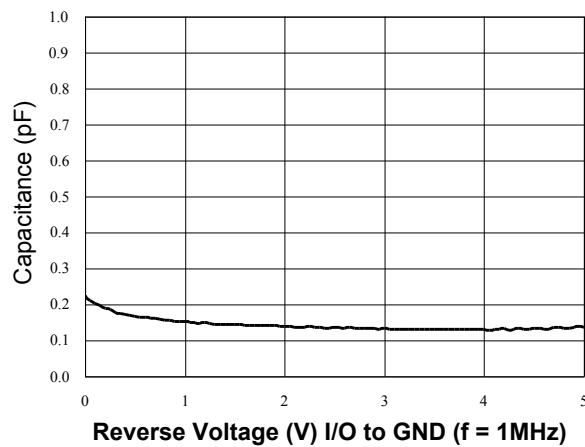


Figure 3. Capacitance vs. Reverse Voltage

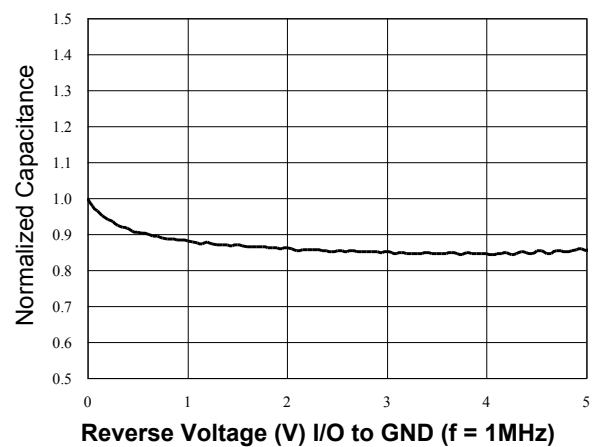
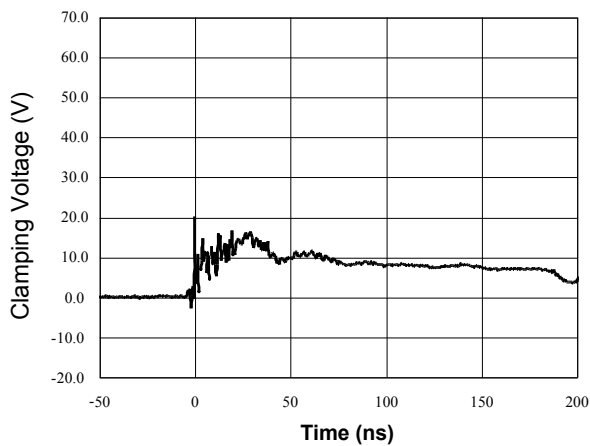
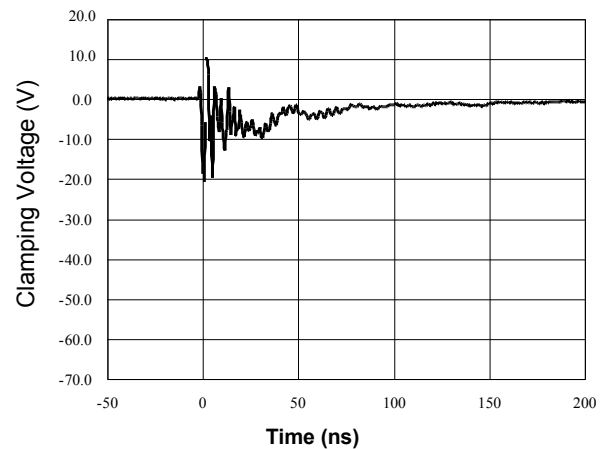


Figure 4. Normalized Capacitance vs. Reverse Voltage



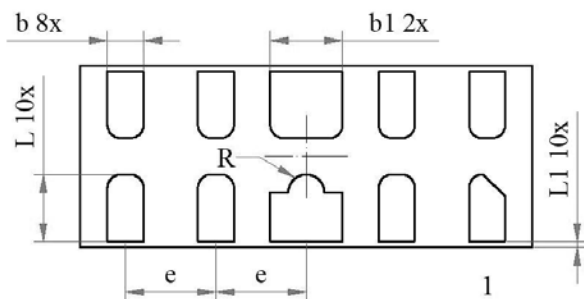
**Figure 5. ESD Clamping of I/O to GND
(+8kV Contact per IEC 61000-4-2)**



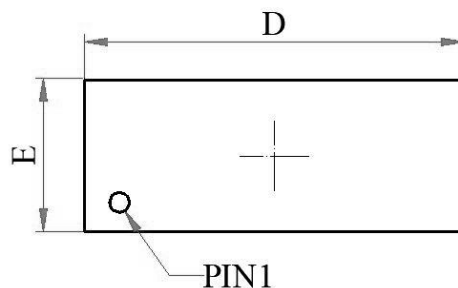
**Figure 6. ESD Clamping of I/O to GND
(-8kV Contact per IEC 61000-4-2)**

Package Outline Dimensions

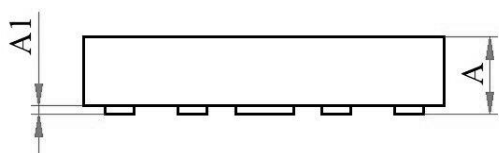
DFN2510



Bottom View



Top View



Side View

Symbol	Dimension In Millimeters			Dimension In Inches		
	Normal	Min	Max	Normal	Min	Max
A	--	0.450	0.550	--	0.018	0.026
A1	0.050	0.025	0.075	0.002	0.001	0.003
D	2.500	2.450	2.550	0.098	0.096	0.100
E	1.000	0.950	1.050	0.039	0.037	0.041
b	0.200	0.150	0.250	0.008	0.006	0.010
b1	0.400	0.350	0.450	0.016	0.014	0.018
L	0.370	0.320	0.420	0.015	0.013	0.017
L1	0.030	0.000	0.060	0.001	0.000	0.002
R	0.100 REF			0.004 REF		
e	0.500 BSC			0.020 BSC		