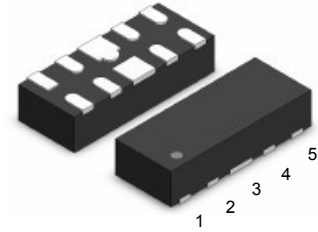


Features

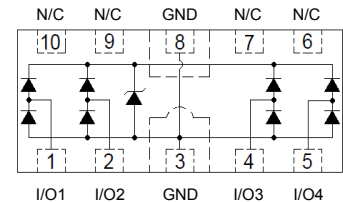
- DFN2510 Package
- Protects up to 4-Lines Operating at 5V
- Snap-Back Technology
- Low Clamping Voltage
- Low Leakage Current
- Ultra Low Capacitance (0.20pF typical I/O to I/O)
- ESD Protection for High-Speed Data Lines to:
 IEC 61000-4-2 ± 10 kV Contact, ± 15 kV Air
 IEC 61000-4-4 (EFT) 40A (5/50ns)
 IEC 61000-4-5 (Lightning) 5A (8/20 μ s)
- RoHS Compliant



DFN2510

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



Schematic Diagram

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

Parameter	Symbol	Value	Unit
Peak Pulse Current ($T_P=8/20\mu\text{S}$)	I_{PP}	5	A
IEC 61000-4-2 Contact (ESD)	V_{ESD}	± 10	kV
IEC 61000-4-2 Air (ESD)	V_{ESD}	± 15	kV
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	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	V_{RWM}	-	-	-	5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	5.5	6.5	10	V
Reverse Leakage Current	I_R	$V_R=5.0\text{V}$	-	0.01	0.1	μA
Trigger Voltage (IEC61000-4-5)	V_T	$I_{PP}=5\text{A}$, $T_P=8/20\mu\text{S}$	-	9	-	V
Clamping Voltage (IEC61000-4-5)	V_C	$I_{PP}=5\text{A}$, $T_P=8/20\mu\text{S}$	-	8	-	V
Clamping Voltage (TLP 8A)	V_C	IEC 61000-4-2 Level 2 (± 4 kV Contact, ± 4 kV Air)	-	6.3	-	V
Clamping Voltage (TLP 16A)	V_C	IEC 61000-4-2 Level 4 (± 8 kV Contact, ± 8 kV Air)	-	7.8	-	V
Dynamic Resistance	R_{dyn}	$I_T=0$ to 30A, $T_P=TLP$	-	0.25	-	Ω
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$, I/O to I/O	-	0.2	-	pF
	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$, I/O to GND	-	0.4	-	pF

Typical Characteristic Curves

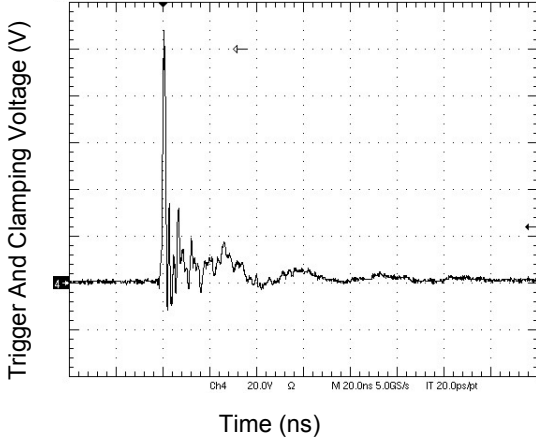


Figure 1. IEC61000-4-2 +8kV Contact Discharge

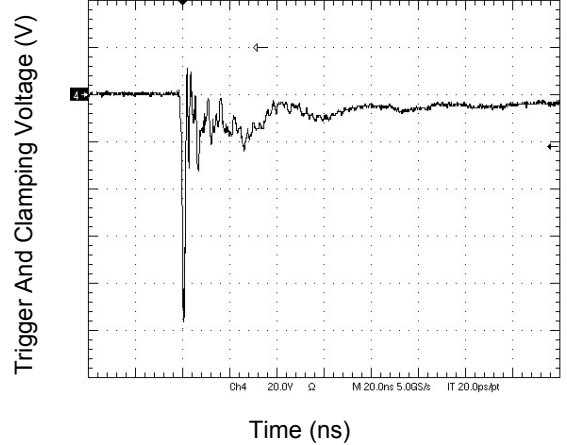


Figure 2. IEC61000-4-2 -8kV Contact Discharge

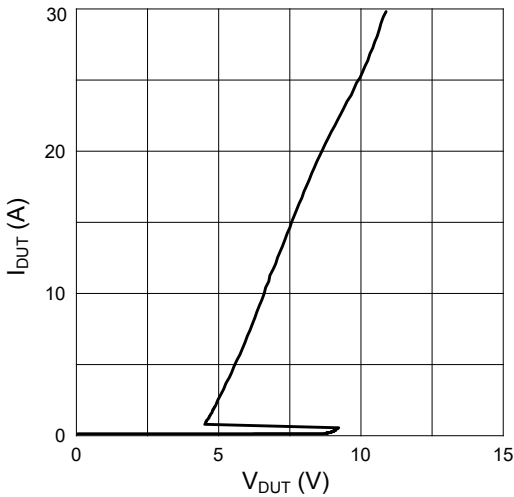


Figure 3. Transmission Line Pulse ($T_p=100\text{ns}$) (I/O to GND)

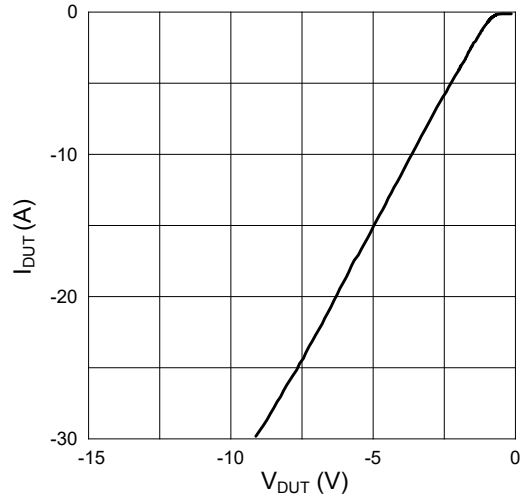


Figure 4. Transmission Line Pulse ($T_p=100\text{ns}$) (GND to I/O)

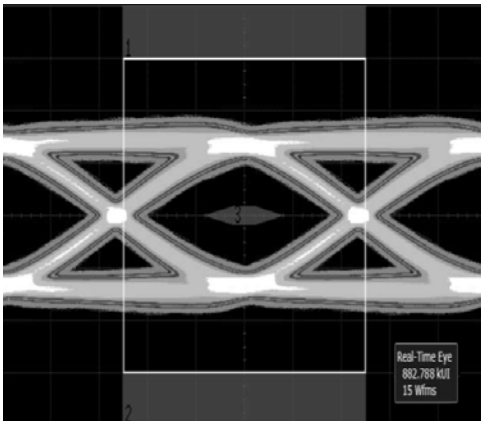


Fig.5 Eye Diagram - USB3.1 at 10Gbps Per Channel

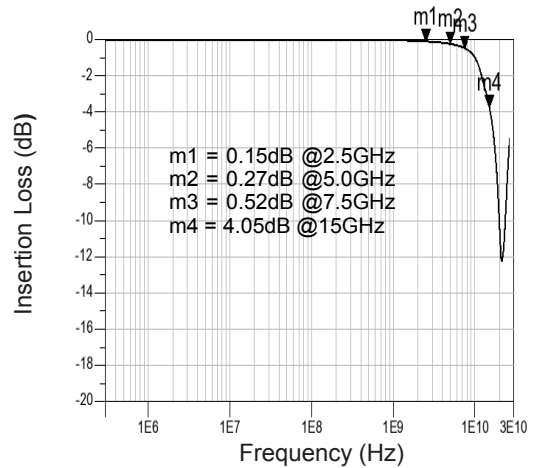
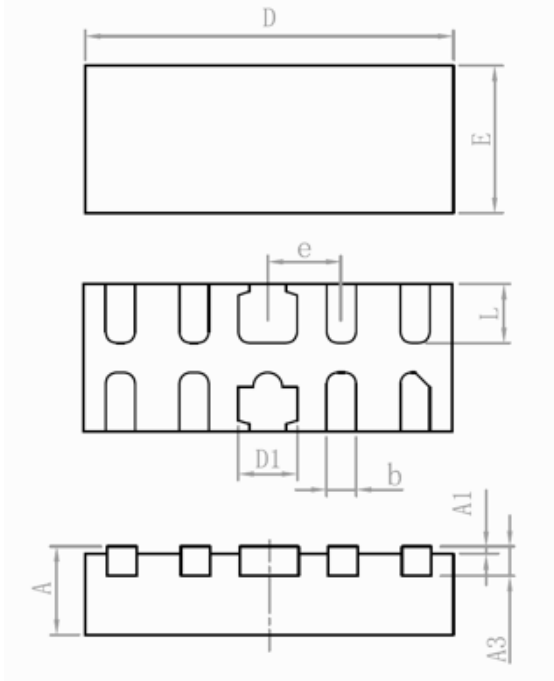


Fig.6 Insertion Loss S21 - I/O to I/O

GSECL5U004

Ultra Low Capacitance TVS Diode

Product Dimensions DFN2510



Symbol	Dimensions in millimeters		
	Min	Nom	Max
A	0.45	0.53	0.60
A1	-	0.02	0.05
A3	0.10	0.15	0.20
D	2.45	2.50	2.55
E	0.95	1.00	1.05
D1	0.35	0.40	0.45
b	0.15	0.20	0.25
e	0.50BSC		
L	0.30	0.40	0.45

Order Information

Device	Package	Marking	Carrier	Quantity	HSF Status
GSECL5U004	DFN2510	5S	Tape & Reel	3000pcs	RoHS Compliant