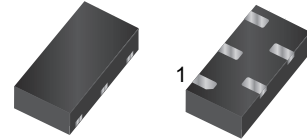


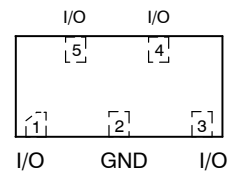
GSCLAMP5010-5U Ultra Low Capacitance ESD TVS Array

Features

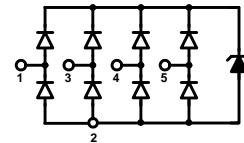
- Protects up to 4-Lines operating at 5V
- R2R + Zener technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance (0.15pF typical I/O to I/O)
- ESD Protection for high-speed data lines to:
IEC 61000-4-2 ±10KV contact ±18KV air
- RoHS compliant



DFN2010



Pin Configuration



Schematic Diagram

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

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

Parameter	Symbol	Value	Unit
Junction Temperature	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^\circ\text{C}$
Lead Soldering Temperature	T_L	260 (10sec.)	$^\circ\text{C}$
Peak Pulse Current ($t_P = 8/20\mu\text{S}$)	I_{PP}	3	A
IEC 61000-4-2 Contact (ESD)	V_{ESD}	± 10	kV
IEC 61000-4-2 Air (ESD)	V_{ESD}	± 18	kV

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}	$I_T=1\text{mA}$	6	7.2	9.5	V
Reverse Leakage Current	I_R	$V_R=5\text{V}$	-	5	100	nA
Clamping Voltage (IEC 61000-4-5)	V_C	$I_{PP}=3\text{A}$, $T_P=8/20\mu\text{S}$	-	10	-	V
Trigger Voltage (V_{PP})	V_T	$V_{ESD} = 8\text{kV}$	-	110	-	V
Clamping Voltage (30nS)	V_C	$V_{ESD} = 8\text{kV}$	-	12	-	V
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$, I/O to I/O	-	0.15	0.2	pF
	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$, I/O to GND	-	0.35	0.4	pF

Typical Characteristic Curves

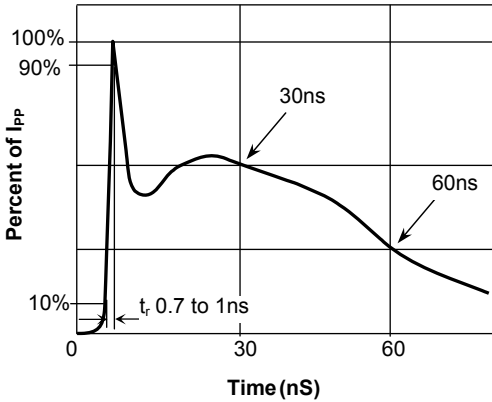


Fig.1 Pulse Waveform-ESD(IEC61000-4-2)

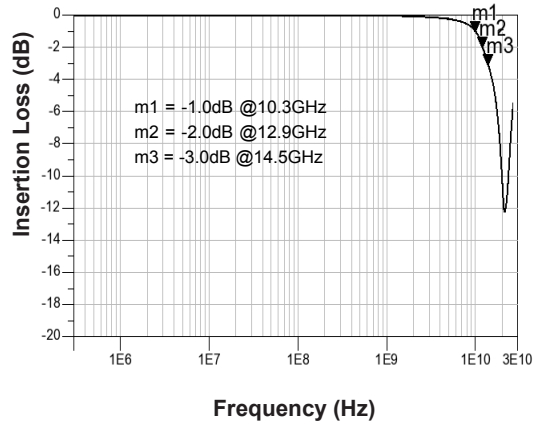


Fig.2 Insertion Loss S21 - I/O to I/O

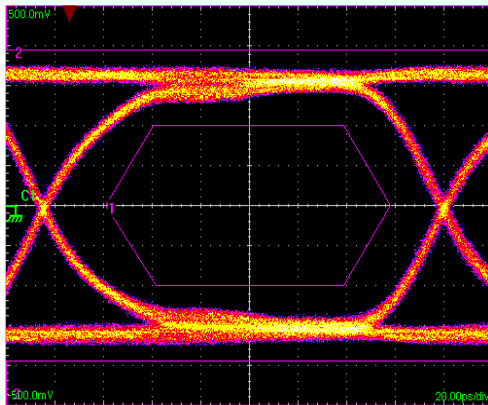


Fig.3 Eye Diagram - HDMI2.0 at 6Gbps per channel (with GSCLAMP5010-5U)

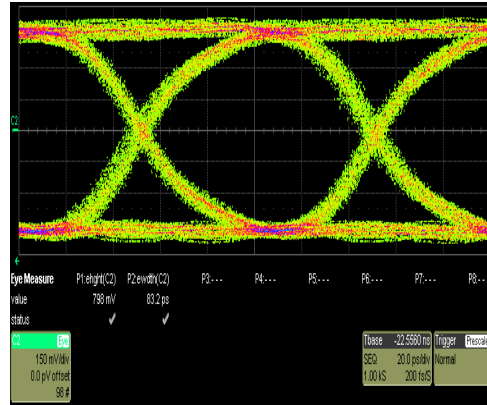


Fig.4 Eye Diagram - USB3.1 at 10Gbps per channel (with GSCLAMP5010-5U)

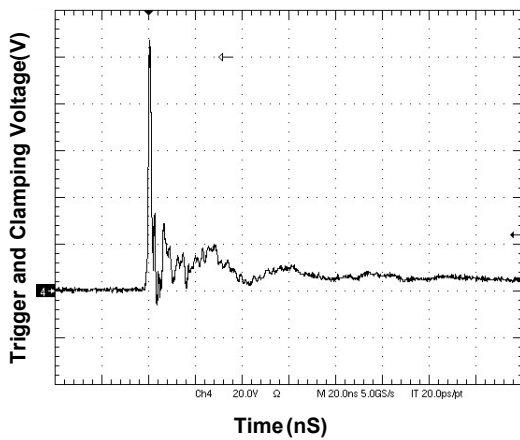


Fig.5 IEC61000-4-2 +8kV Contact Discharge

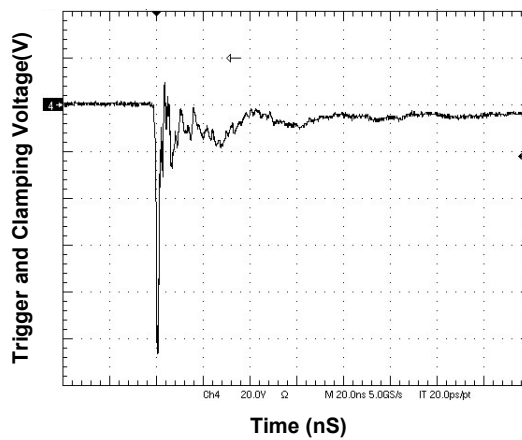


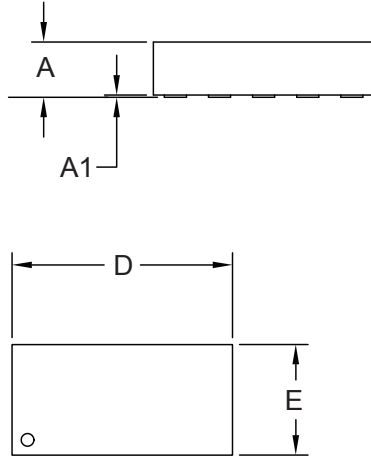
Fig.6 IEC61000-4-2 -8kV Contact Discharge

GSCLAMP5010-5U

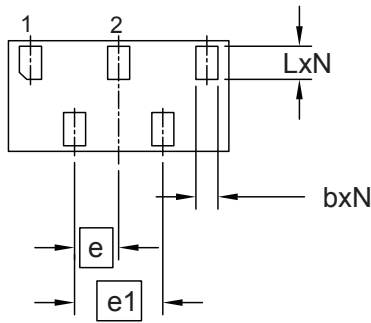
Ultra Low Capacitance ESD TVS Array

Product Dimensions

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		



Ordering Information

Device	Package	Marking	Quantity	HSF Status
GSCLAMP5010-5U	DFN2010	5U	3000pcs / Reel	RoHS Compliant