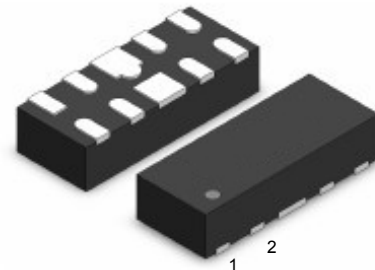


GSCLAMP0524PE

Ultra Low Capacitance ESD TVS Array

Features

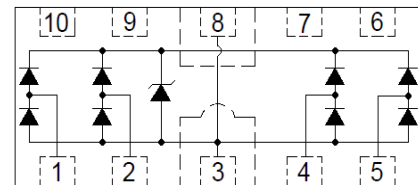
- 180 Watts peak pulse power ($t_p = 8/20\mu s$)
- DFN2510 package
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance (0.2pF typical I/O to I/O)
- ESD Protection for high-speed data lines to:
 - IEC 61000-4-2 $\pm 25KV$ contact $\pm 25KV$ air
 - IEC 61000-4-4 (EFT) 40A (5/50ns)
 - IEC 61000-4-5 (Lightning) 7A (8/20 μs)
- RoHS compliant



DFN2510

Applications

- USB 3.0, USB 2.0, MHL
- HDMI 2.0, Display Port 1.3, eSATA
- Unified Display Interface (UDI)
- Digital Visual Interface (DVI)
- High Speed Serial Interface



Schematic Diagram

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

Parameter	Symbol	Value	Unit
Peak Pulse Power ($T_P = 8/20\mu s$)	P_{PP}	180	W
Peak Pulse Current ($T_P = 8/20\mu s$)	I_{PP}	7	A
Junction Temperature	T_J	-55 to +125	$^\circ C$
Storage Temperature	T_{STG}	-55 to +150	$^\circ C$

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse Stand-off Voltage	V_{RWM}	-	-	-	5	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1mA$	6	6.8	8.5	V
Reverse Leakage Current	I_R	$V_R = 5V$	-	0.01	1	μA
Clamping Voltage	V_C	$I_{PP} = 1A, T_P = 8/20\mu s$	-	8	9.5	V
		$I_{PP} = 5A, T_P = 8/20\mu s$	-	12	20	V
		$I_{PP} = 7A, T_P = 8/20\mu s$	-	15	26	V
Trigger Voltage (IEC 61000-4-2)	V_T	$V_{ESD} = 8kV$	-	135	-	V
Clamping Voltage (IEC 61000-4-2)	V_C	$V_{ESD} = 8kV$	-	20	-	V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz, I/O$ to I/O	-	0.2	-	pF
	C_J	$V_R = 0V, f = 1MHz, I/O$ to GND	-	0.4	-	pF

GSCLAMP0524PE Ultra Low Capacitance ESD TVS Array

Typical Characteristic Curves

Fig.1 Peak Pulse Power Rating Curve

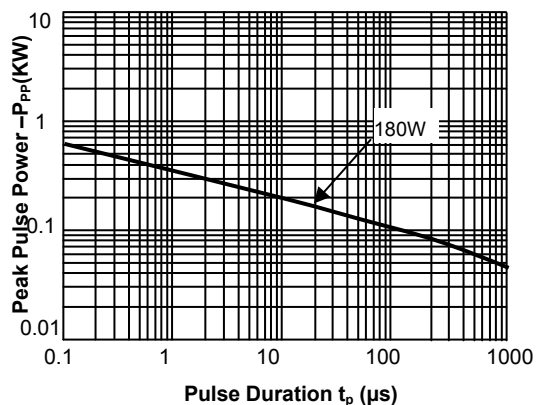


Fig.2 Pulse Derating Curve

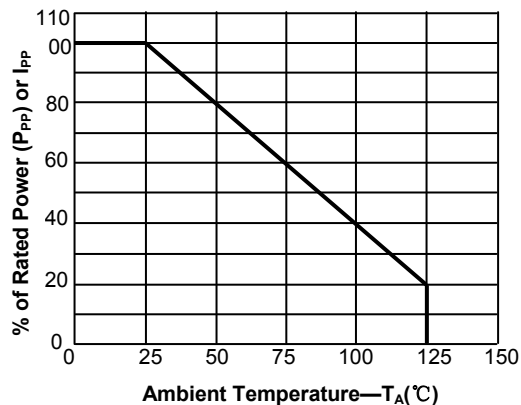


Fig.3 Pulse Waveform-8/20μs

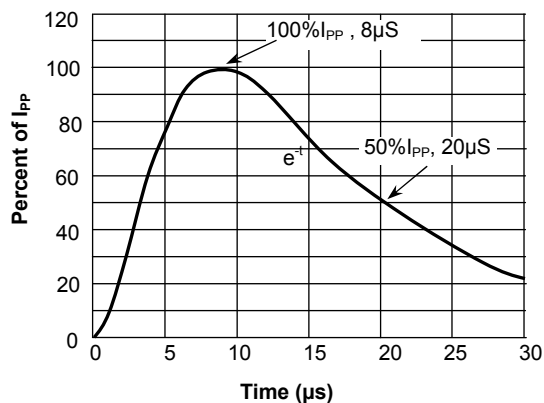


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

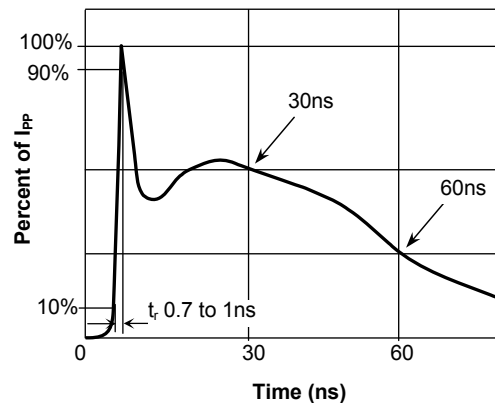


Fig.5 Eye Diagram-HDMI mask at 1.5Gbps per channel without GSCLAMP0524PE

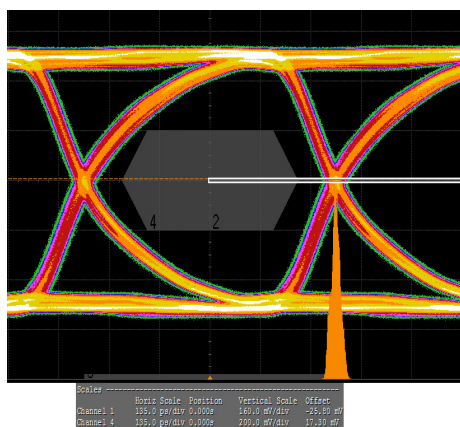
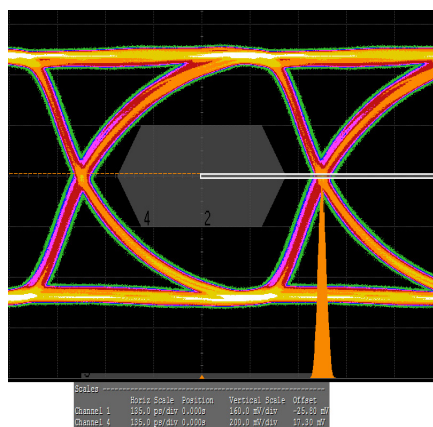


Fig.6 Eye Diagram-HDMI mask at 1.5Gbps per channel with GSCLAMP0524PE



GSCLAMP0524PE

Ultra Low Capacitance ESD TVS Array

Typical Characteristic Curves

Fig.7 Eye Diagram - HDMI mask at 3.4Gbps per channel (with GSCLAMP0524PE)

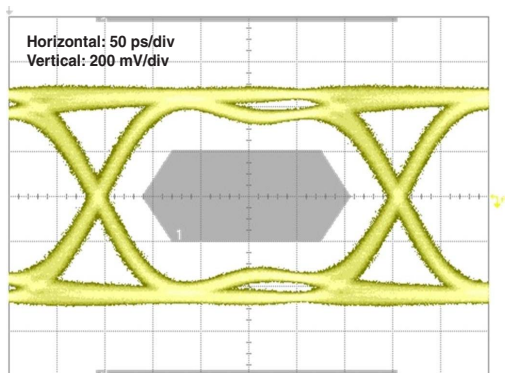


Fig.8 Insertion Loss S21 - I/O to GND

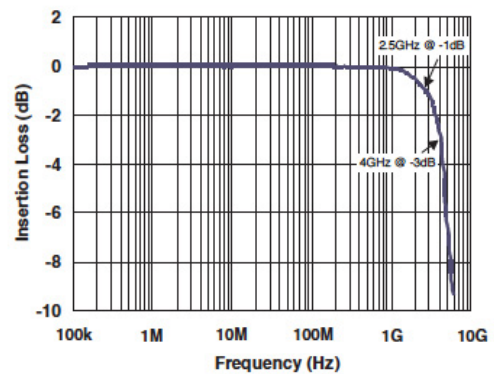


Fig.9 IEC61000-4-2 +8kV Contact Discharge

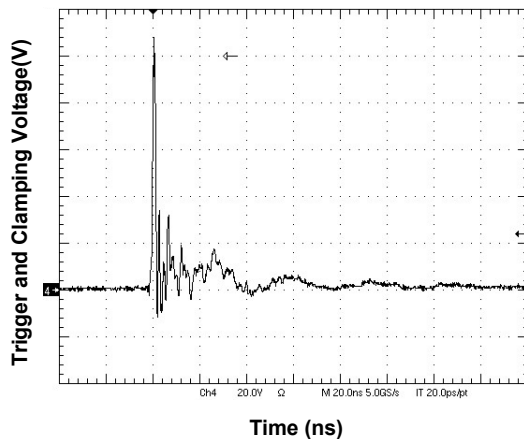
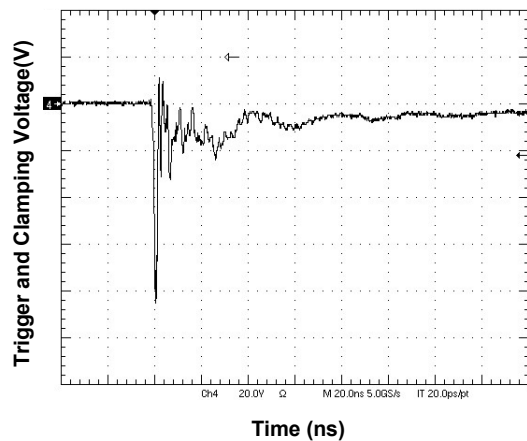


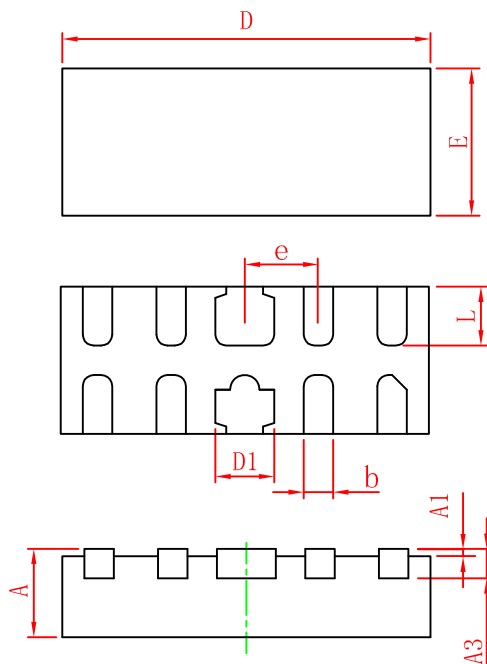
Fig.10 IEC61000-4-2 -8kV Contact Discharge



GSCLAMP0524PE
Ultra Low Capacitance ESD TVS Array

Package Outline Dimensions

DFN2510



Symbol	Dimensions in millimeters		
	Min	Nom	Max
A	0.45	0.50	0.55
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	0.35	0.40	0.45

Order Information

Device	Marking	Carrier	Quantity	HSF Status
GSCLAMP0524PE	S5U	Tape & Reel	3,000pcs / Reel	RoHS Compliant