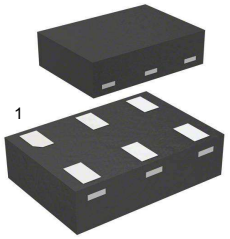
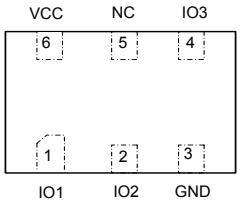
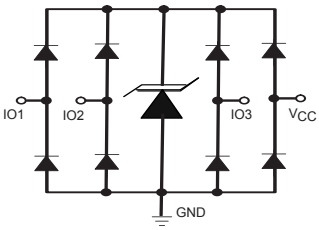
Ultra Low Capacitance ESD TVS Array in DFN1510-6L

Features

- 40Watts peak pulse power (tp = 8/20μs)
- DFN1510 package
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance (0.35pF typical I/O to I/O)
- ESD Protection for high-speed data lines to:
  IEC 61000-4-2 ±20KV contact ±25KV air
  IEC 61000-4-4 (EFT) 40A (5/50ns)
  IEC 61000-4-5 (Lightning) 4A (8/20μs)







Mechanical Data

- **Case:** DFN1510 (plastic package).
  Lead free; RoHS compliant; Halogen free
- **Molding Compound Flammability Rating:**
  UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:
  260 °C/10 sec. at terminals

Applications

- SDIO
- USB 2.0, MHL
- SCGA Video Connections
- Precision Analog Interface
- Notebooks, Desktops, and Server

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power (T_P=8/20μS)	P_{PP}	40	W
ESD contact/air discharge (IEC-61000-4-2)	V_{ESD}	20/25	kV
Peak Pulse Current (t_P = 8/20μS)	I_{PP}	4.0	A
Junction Temperature	T_J	-55 to +125	℃
Storage temperature	T_{STG}	-55 to +150	℃

Electrical Characteristics

(T_A = 25 °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	6.0		8.5	V
Reverse Leakage Current	I_R	V_R=5V		0.1	0.2	μA
Clamping Voltage(SURGE)	V_C	I_{PP}=4A, T_P=8/20μs		10		V
Clamping Voltage(ESD)	V_C	V_{ESD} = +8kV		12		V
Junction Capacitance	C_J	V_R=0V,f=1MHz, I/O to I/O		0.35		pF
	C_J	V_R=0V,f=1MHz, I/O to GND		0.5		pF

Typical Characteristics (T_{amb} = 25 °C unless otherwise specified)

Fig.1 Peak Pulse Power Rating Curve

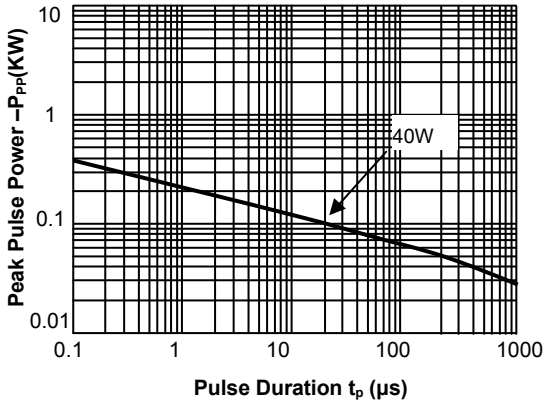


Fig.2 Pulse Derating Curve

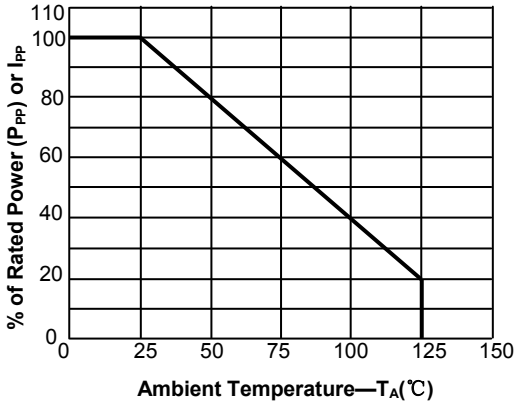


Fig.3 Pulse Waveform-8/20μs

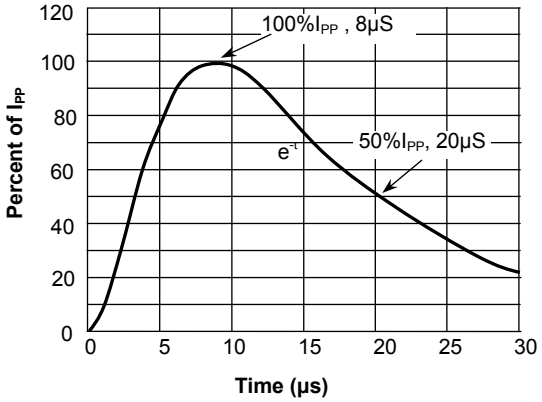


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

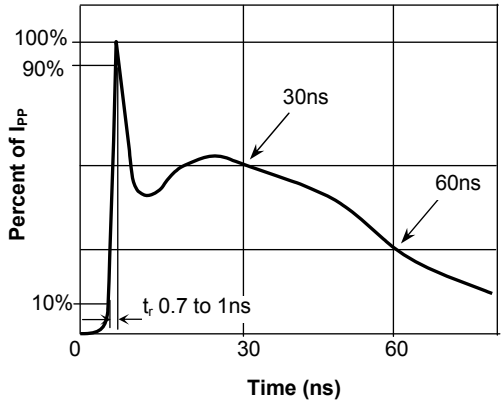


Fig.5 Eye Diagram - HDMI mask at 3.4Gbps per channel (with CESD1610LC5VU)

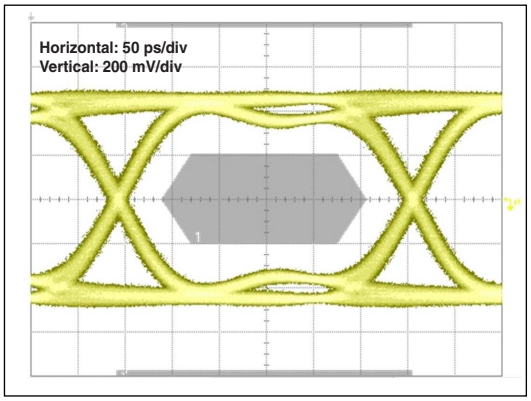
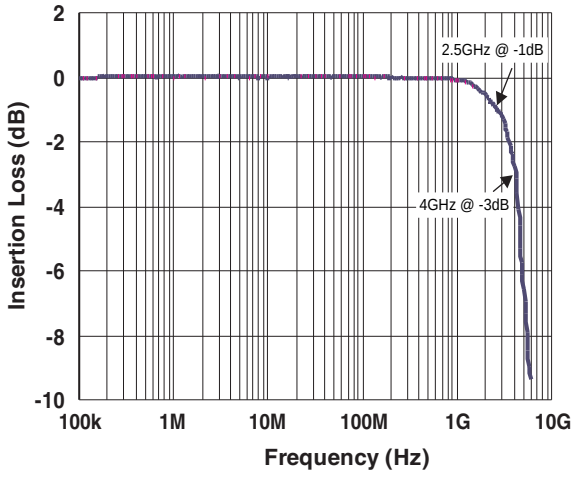
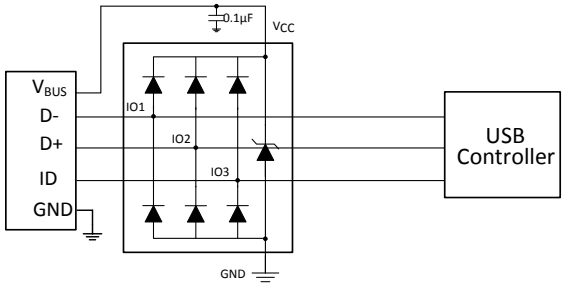


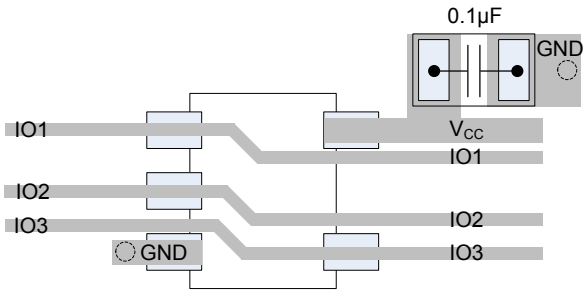
Fig.6 Insertion Loss S21 - I/O to GND



Typical Application

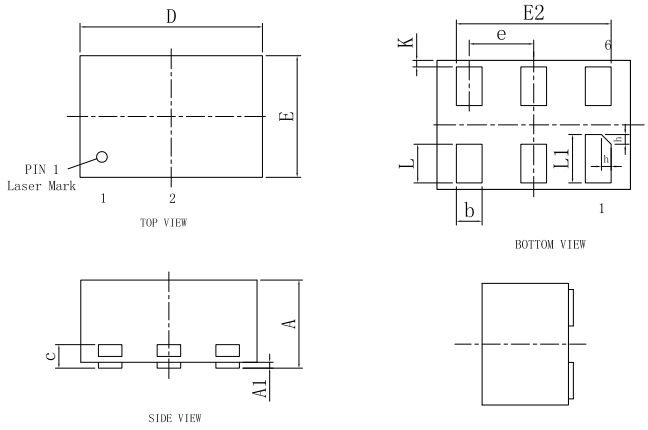


Application Example



Layout Example

Package Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0	0.02	0.05
b	0.15	0.20	0.25
c	0.15	0.20	0.25
D	1.45	1.50	1.55
E	0.90	1.00	1.10
E2	1.10	1.20	1.30
e	0.50BSC		
L	0.25	0.30	0.35
L1	0.325	0.375	0.425
h	0.025	0.075	0.125
k	0.05REF		

Marking

Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
TESD1510UC5VU	DFN1510	Tape and reel	3000pcs / reel	EIA STD RS-481