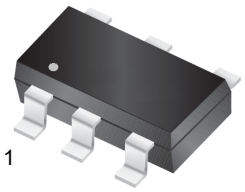
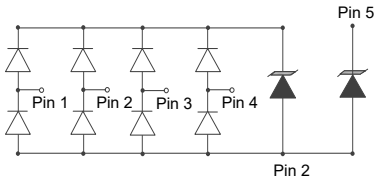
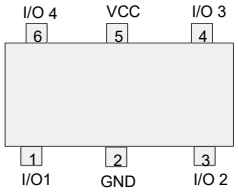
Ultra Low Capacitance ESD TVS Array in SOT23-6

Features

- 60Watts peak pulse power (tp = 8/20μs)
- SOT23-6 Package
- Unidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance (0.3pF typical I/O to I/O)
- ESD Protection for high-speed data lines to:
  IEC 61000-4-2 ±25KV contact ±25KV air
  IEC 61000-4-4 (EFT) 40A (5/50ns)
  IEC 61000-4-5 (Lightning) 4A (8/20μs)







Mechanical Data

- **Case:** SOT23-6 (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

- Ethernet
- USB 3.0, USB 2.0, MHL
- Unified Display Interface (UDI)
- Digital Visual Interface (DVI)
- High speed serial interfaces

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}	60	W
ESD contact/air discharge (IEC-61000-4-2)	V_{ESD}	25/25	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
I/O port TVS						
Reverse Stand-Off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.0	8.0		V
Reverse Leakage Current	I_R	V_{RWM}=5V,T=25℃		0.2	0.5	uA
Clamping Voltage	V_C	I_{PP}=4.0A,t_p=8/20μs		10	15	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz I/O to I/O		0.3		pF
		V_R = 0V, f = 1MHz I/O to GND		0.6		pF
VCC TVS						
Reverse Stand-Off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.0			V
Reverse Leakage Current	I_R	V_{RWM}=5V,T=25℃			1	uA
Clamping Voltage	V_C	I_{PP}=20A,t_p=8/20μs		12	15	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz VCC to GND		160		pF

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

Fig.1 Peak Pulse Power Rating Curve

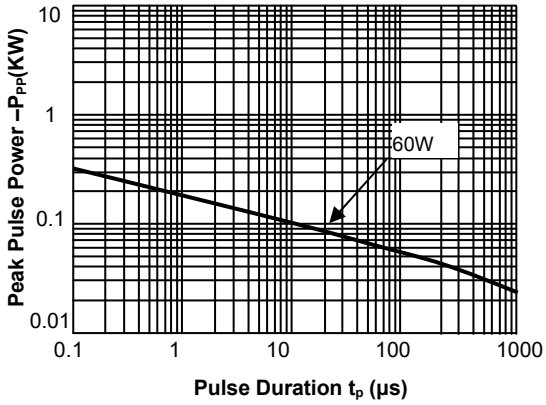


Fig.2 Pulse Derating Curve

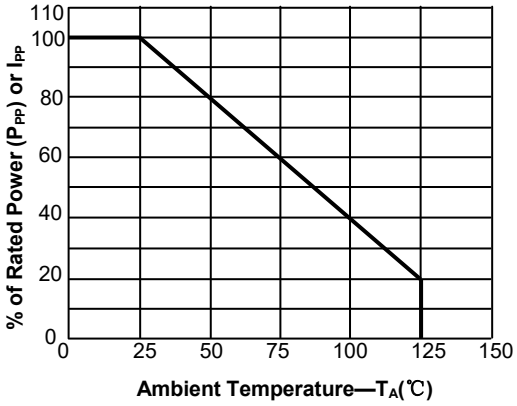


Fig.3 Pulse Waveform-8/20μs

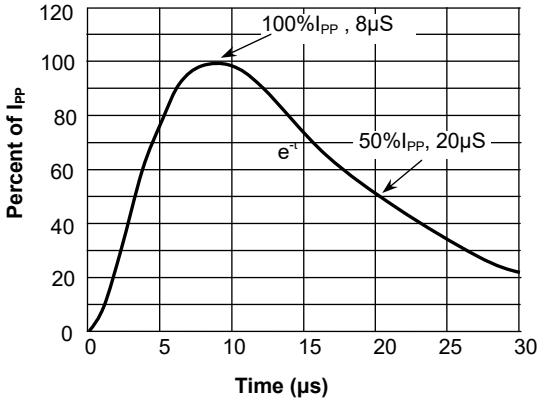


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

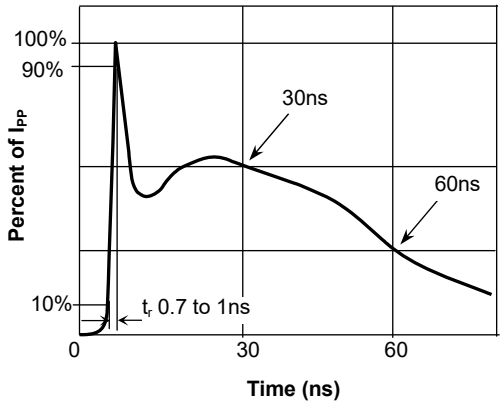


Fig.5 Eye Diagram - HDMI mask at 5Gbps per channel

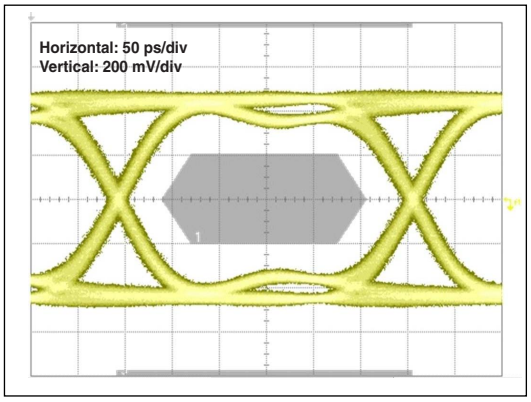
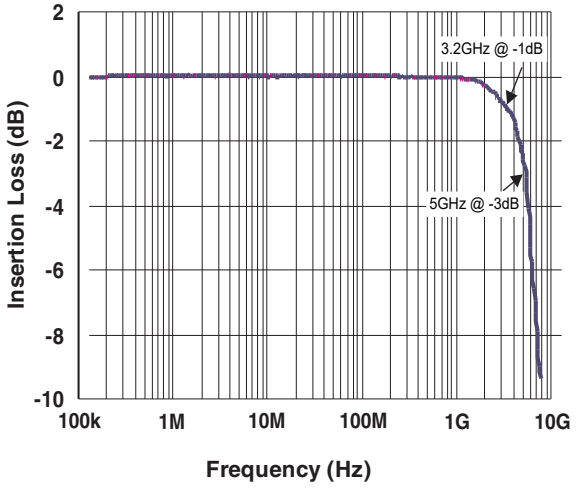
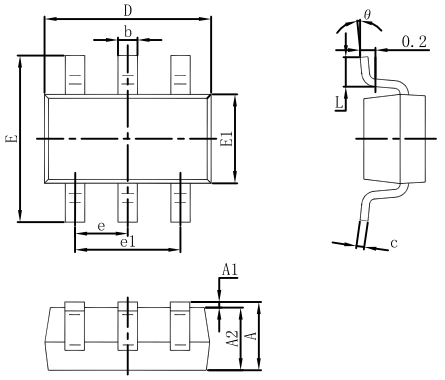


Fig.6 Insertion Loss S21 - I/O to GND

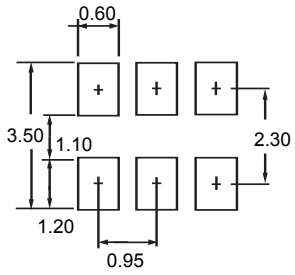


Package Dimensions

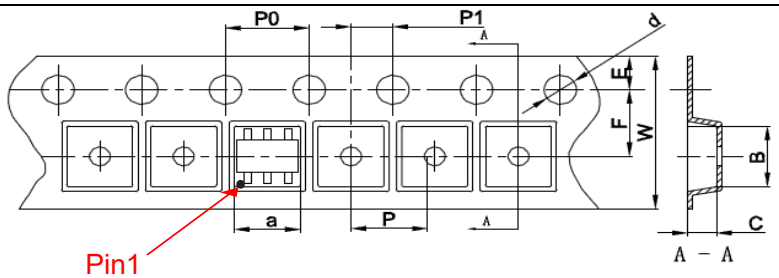


Symbol	Dimensions in millimeters	
	Min	Max
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E1	1.500	1.700
E	2.650	2.950
e	0.950(BSC)	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°

Pad dimensions

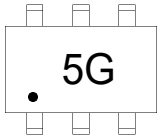


Package information



Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOT-23-6	3.17	3.23	1.37	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

Marking



Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
TEST236UC5VUH	SOT23-6	Tape and reel	3000pcs / reel	EIA STD RS-481