

ESD PROTECTION DEVICE

STAND-OFF VOLTAGE - **5.0** Volts
POWER DISSIPATION - **300** WATTS

GENERAL DESCRIPTION

The L30ESDL5V0C6-4 is low capacitance TVS arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

FEATURES

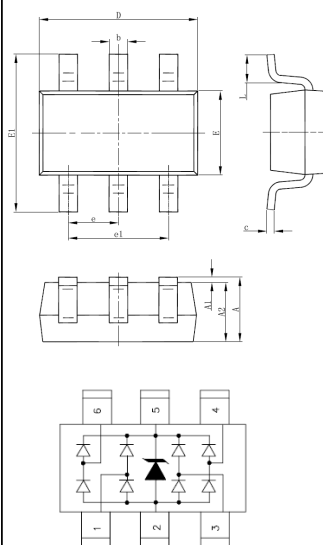
- Protects up to four I/O lines & power line
- Low capacitance: 1.5pF typical (I/O to I/O)
- IEC 61000-4-5 (Lighting), 12A (8/20us)
- IEC 61000-4-2 (ESD), > ±27KV (air); > ±27KV (contact).

APPLICATION

- Digital Visual Interface (DVI)
- Monitors and Flat Panel Displays
- USB 2.0
- 10/100/1000 Ethernet
- IEEE 1394 Firewire Port

MECHANICAL DATA

- Case Material: "Green" molding compound UL flammability classification 94V-0 (No Br, Sb, Cl)
- Terminals: Lead Free Plating
- Component in accordance to RoHs 2011/65/EU

SOT23-6L


4 lines Protection

SOT23-6L		
DIM.	MIN.	MAX.
A	0.90	1.45
A1	0.00	0.15
A2	0.90	1.30
b	0.30	0.50
c	0.08	0.22
D	2.45	3.00
E	1.50	1.75
E1	2.65	2.95
e	0.95 typ.	
e1	1.90 typ.	
L	0.30	0.60
All Dimensions in millimeter		

PIN ASSIGNMENT	
1, 3, 4, 6	I/O Lines
5	V _{CC}
2	Ground

MAXIMUM RATINGS (T_J= 25°C unless otherwise noticed)

Rating	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20us)	P _{pk}	300	W
Peak Pulse Current (tp = 8/20us)	I _{pp}	12	A
Operating Junction Temperature Range	T _J	-55 to + 125	°C
Storage Temperature Range	T _{stg}	-55 to + 150	°C
Soldering Temperature, t max = 10s	T _L	260	°C

ELECTRICAL CHARACTERISTICS (T_J= 25°C unless otherwise noticed)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse standoff voltage	V _{RWM}	Any pin to ground	---	---	5.0	V
Breakdown voltage	V _{BR}	I _R = 1 mA	6.0	---	---	V
Reverse leakage current	I _{RM}	V _{DRM} = 5V	---	---	5	uA
Clamping Voltage	V _C	I _{PP} = 1A, tp = 8/20μs, Any I/O pin to ground	---	8.7	12.5	V
Clamping Voltage	V _C	I _{PP} = 5A, tp = 8/20μs, Any I/O pin to ground	---	10.6	17.5	V
Clamping Voltage	V _C	I _{PP} = 12A, tp = 8/20μs, Any I/O pin to ground	---	15.4	25	V
Junction capacitance	C _J	V _R = 2.5V, f = 1MHz, Any I/O pin to ground	---	3.5	5.0	pF
Junction capacitance	C _J	V _R = 2.5V, f = 1MHz, Between I/O pins	---	1.5	2.5	pF

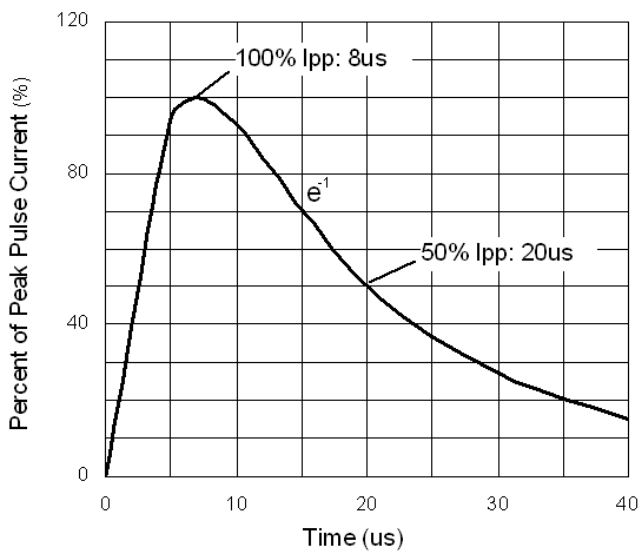


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

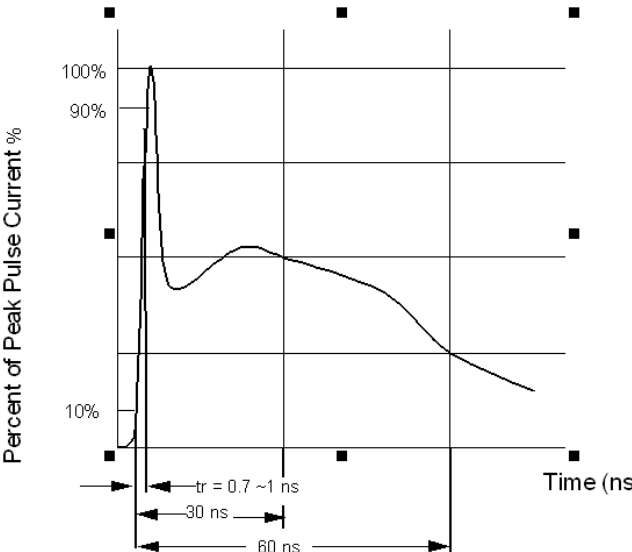


Figure 2. ESD pulse waveform according to IEC 61000-4-2

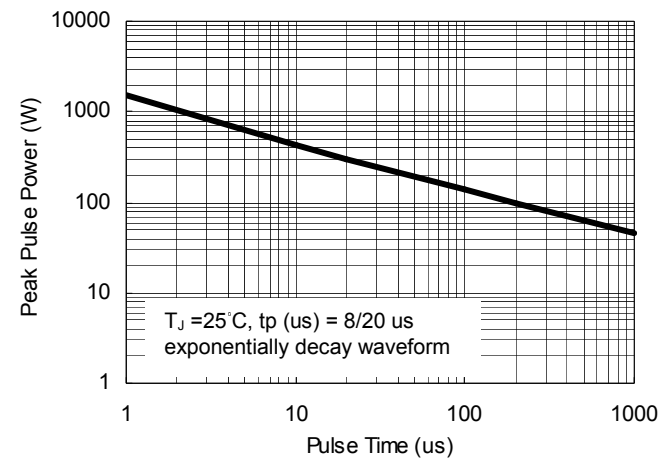


Figure 3. Power Dissipation versus Pulse Time

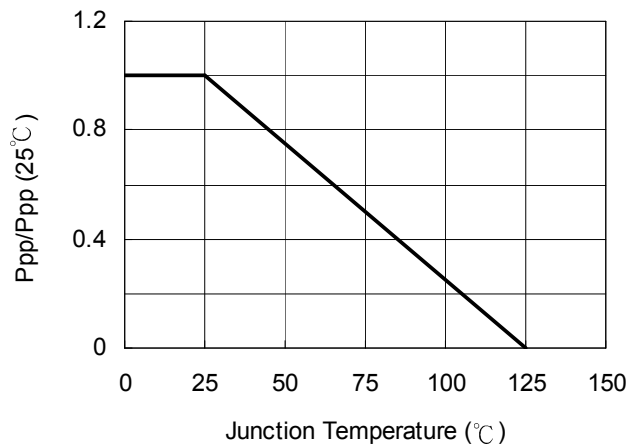


Figure 4. Peak pulse power versus T_j

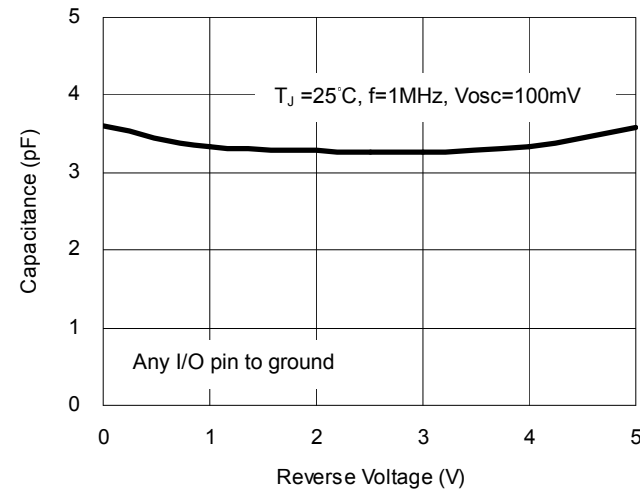


Figure 5. Typical Junction Capacitance

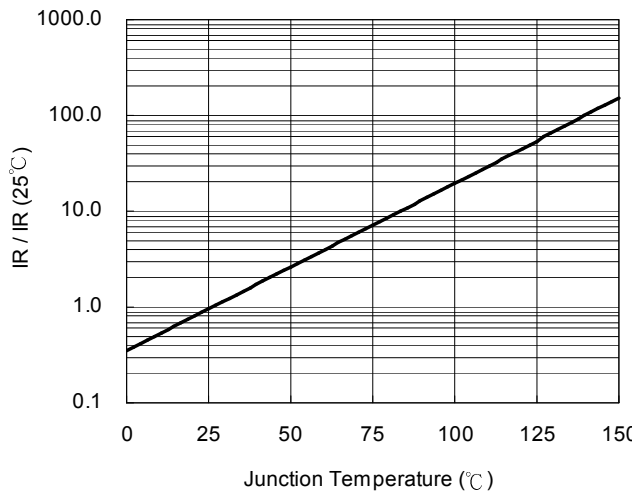


Figure 6. Reverse Leakage Current versus T_j

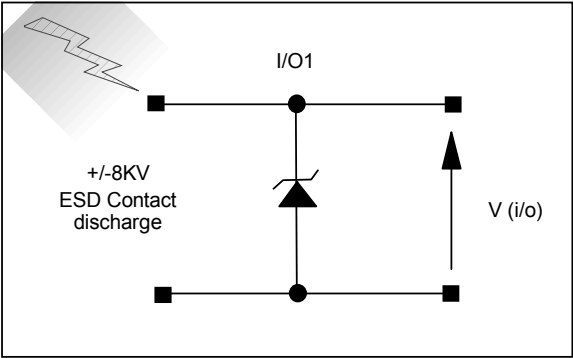


Figure 7. ESD Test Configuration

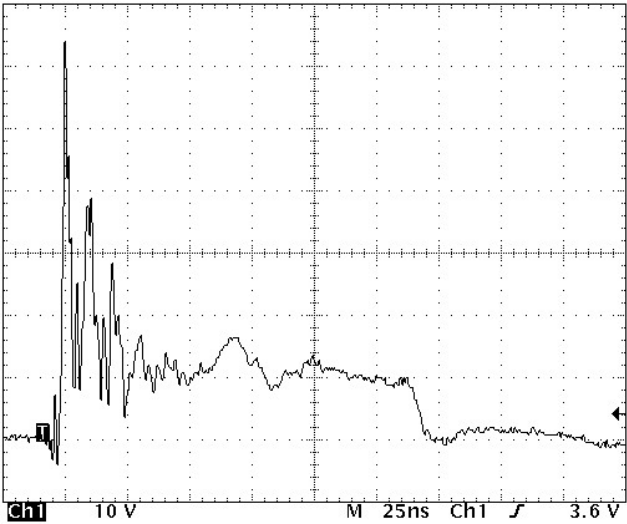


Figure 8. Clamped +8 kV ESD voltage waveform

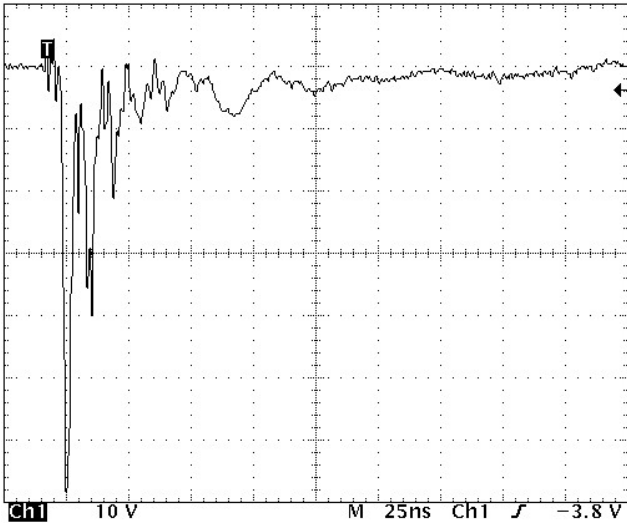


Figure 9. Clamped -8 kV ESD voltage waveform

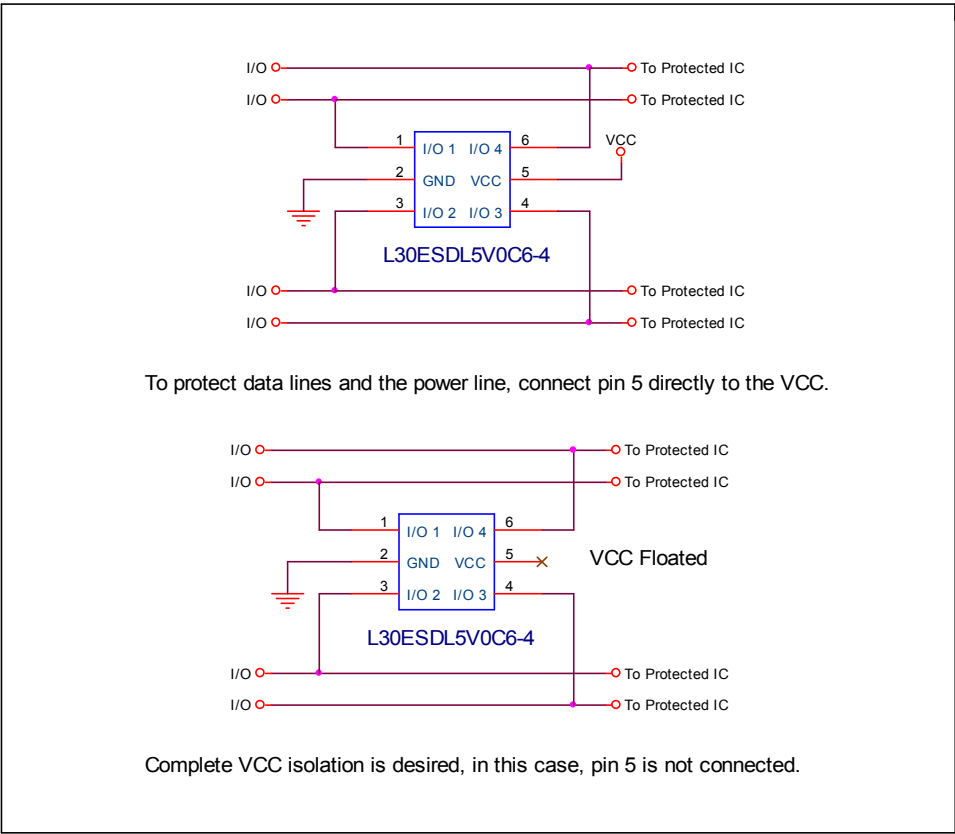


Figure 10. Device Connection Options

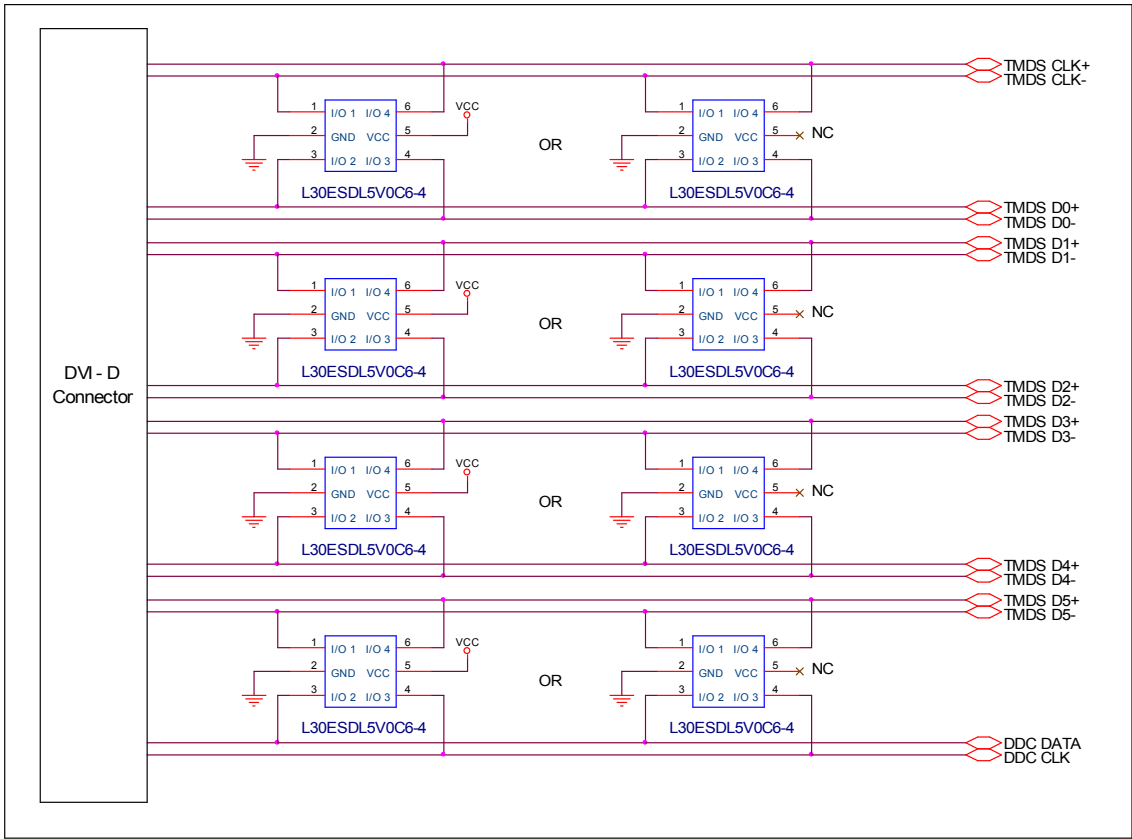


Figure 11. DVI Interface ESD Protection

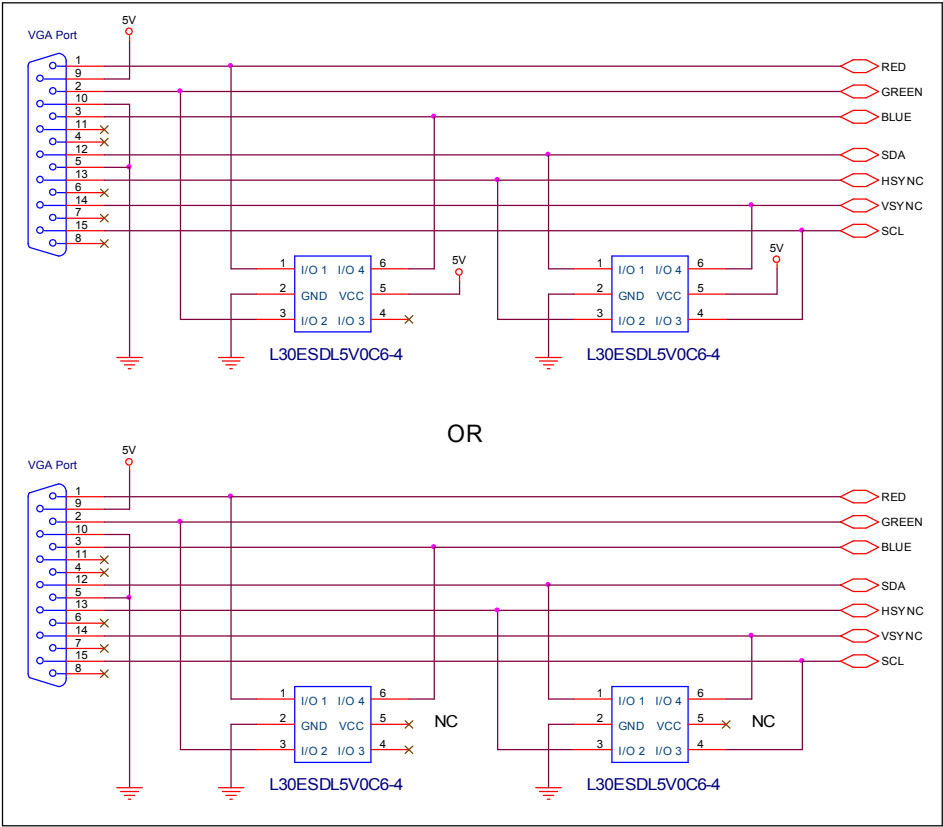


Figure 12. VGA Interface ESD Protection

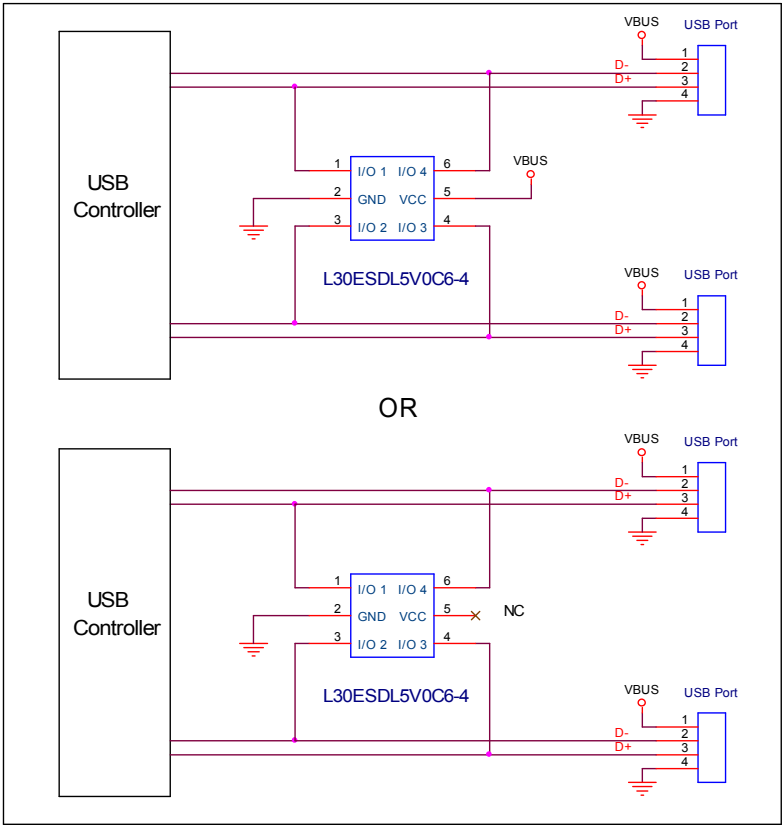


Figure 13. USB2.0 Interface ESD Protection

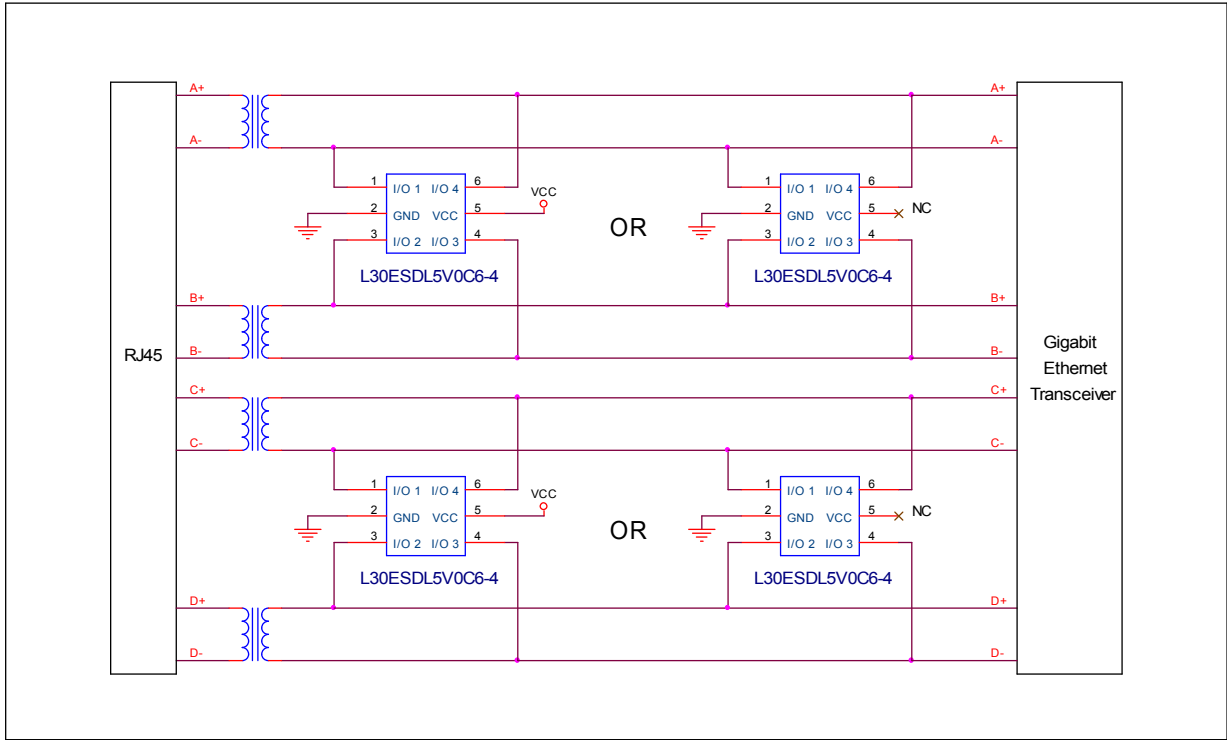


Figure 14. 10/100/1000 Ethernet ESD Protection

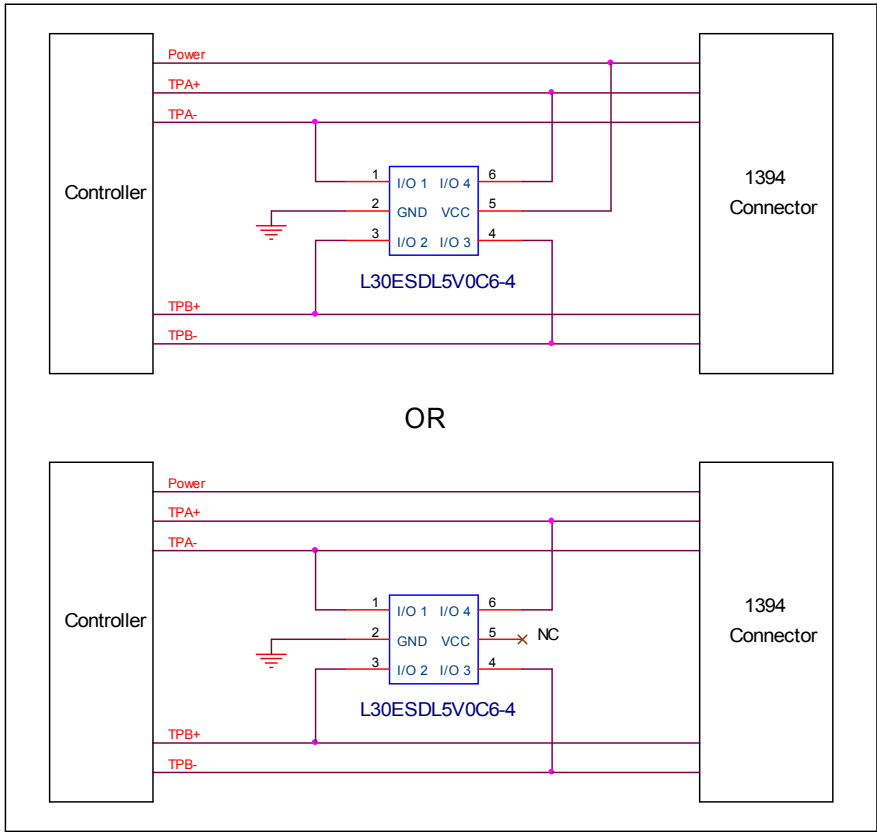
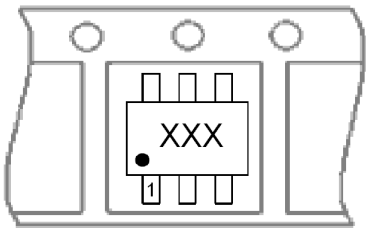


Figure 15. IEEE1394 Interface ESD Protection

Marking & Orientation

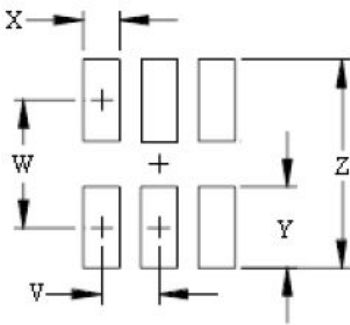


DEVICE	Wire	Marking	Packing
L30ESDL5V0C6-4	Au	VC5	Taping / Reel

Packaging Information

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L30ESDL5V0C6-4	3000	7	45000	90K/180K

SOT23-6L Soldering Pad Layout



Dim.	Millimeters	Inches
Z	3.60	0.141
X	0.80	0.031
W	2.60	0.102
Y	1.00	0.039
V	0.95	0.037

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