LITE-ON SEMICONDUCTOR

L06ESDL5V0H4-2

ESD PROTECTION DEVICE

STAND-OFF VOLTAGE – **5.0** Volts
POWER DISSIPATION – **60** WATTS

GENERAL DESCRIPTION

The L06ESDL5V0H4-2 has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltages caused by ESD (electrostatic discharge), EFT (electrical fast transients), and lightning.

FEATURES

- Protects two I/O lines
- Max. peak pulse power : Ppp = 60W at tp = 8/20 us.
- Low Capacitance : 0.8pF Typical
- Low clamping voltage
- IEC 61000-4-2, level 4 (ESD), > ±15KV (air) ; > ±8KV (contact).

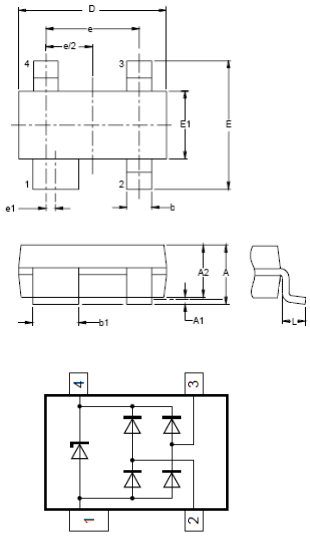
APPLICATION

- USB Power & Data Line Protection
- Ethernet 10BaseT
- Video Line Protection
- T1/E1 secondary IC Side Protection
- Portable Electronics
- WAN/LAN Equipment

MECHANICAL DATA

- Case Material: "Green" molding compound UL flammability classification 94V-0 (No Br.Sb, Cl)
- Terminals: Lead Free Plating (Matte Tin Finish), solderable per J-STD-002 and JESD22-B/02.
- Moisture Sensitivity: Leve 1 per J-STD-020C
- Component in accordance to RoHs 2002/95/EC

SOT-143



SOT-143		
DIM.	MIN.	MAX.
A	0.80	1.22
A1	0.013	0.15
A2	0.75	1.07
b	0.30	0.51
b1	0.76	0.94
D	2.80	3.04
E	2.10	2.64
E1	1.20	1.4
e	1.92 BSC	
e1	0.20 BSC	
L	0.40	0.60
All Dimensions in millimeter		

PIN ASSIGNMENT	
1	Ground
2 , 3	Input Lines
4	VCC

MAXIMUM RATINGS (Tj= 25℃ unless otherwise noticed)

Rating	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20us)	P_{pk}	60 (Max)	W
Peak Pulse Current (tp = 8/20us)	Ipp	2.5	A
Operating Junction Temperature Range	T_J	-55 to + 125	℃
Storage Temperature Range	Tstg	-55 to + 150	℃
Soldering Temperature, t max = 10s	T_L	260	℃

ELECTRICAL CHARACTERISTICS (Tj= 25℃ unless otherwise noticed)

Parameter	Symbol	Conditions	Mln	Typ	Max	Unit
Reverse standoff voltage	V_{RWM}		---	---	5	V
Breakdown voltage	VBR	IR = 1 mA	6.0	---	9.0	V
Reverse leakage current	IRM	V_{DRM} =5V	---	----	1.0	uA
Clamping Voltage	V_C	I_{PP} = 1A, tp = 8/20μs	---	---	14	V
		I_{PP} =2.5A, tp = 8/20μs	---	---	24	
Junction Capacitance	C_J	Between I/O pins V_R = 0V, f = 1MHz	---	0.4	0.5	pF
		Any I/O pin to Ground V_R = 0V, f = 1MHz	---	0.8	1	

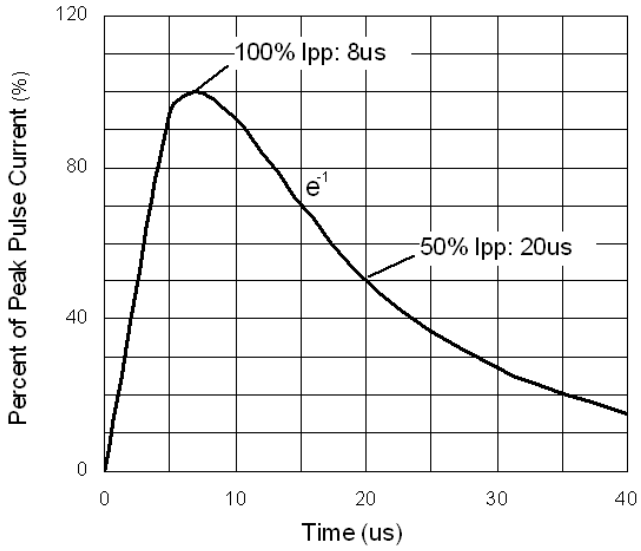


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

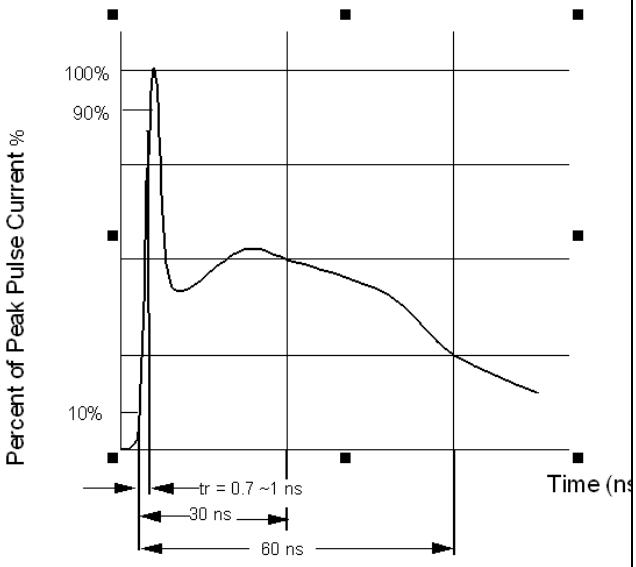


Figure 2. ESD pulse waveform according to IEC 61000-4-2

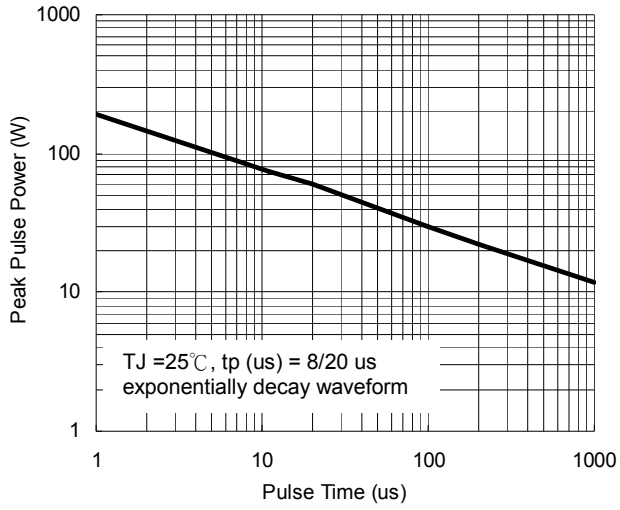


Figure 3. Power Dissipation versus Pulse Time

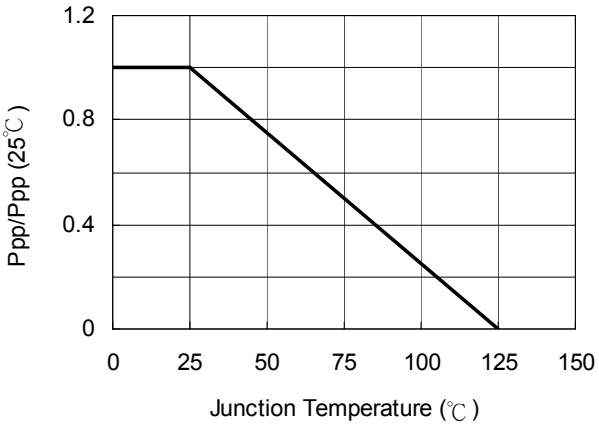


Figure 4. Peak pulse power versus TJ

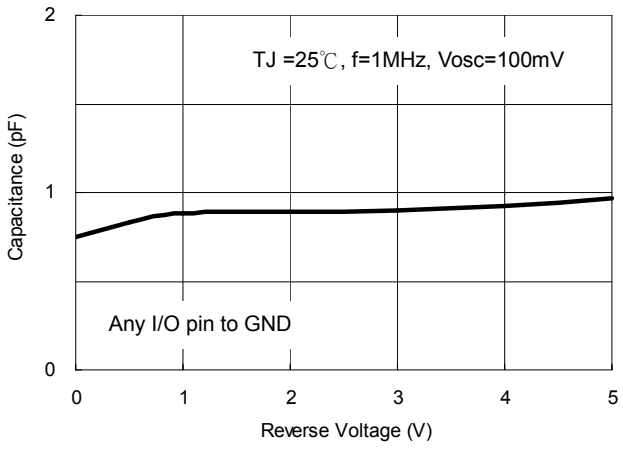


Figure 5. Capactiance versus Reverse Voltage

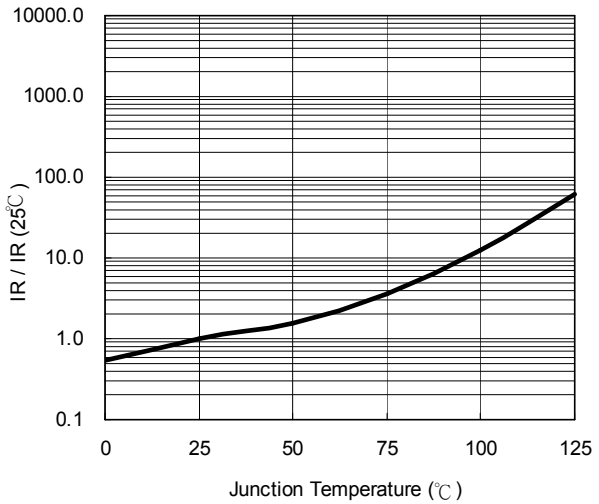


Figure 6. Reverse Leakage Current versus TJ

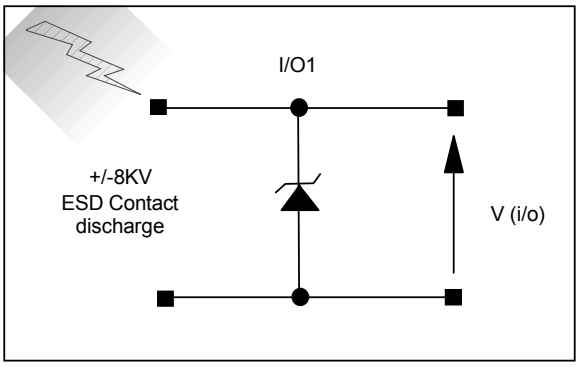


Figure 7. ESD Test Configuration

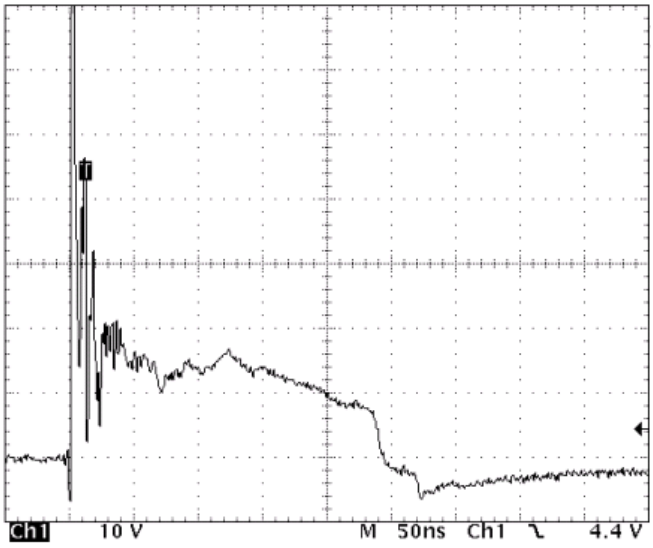


Figure 8. Clamped +8 kV ESD voltage waveform

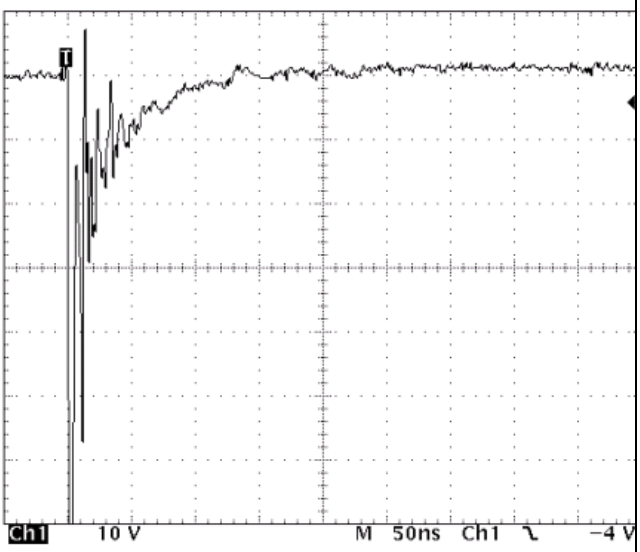


Figure 9. Clamped -8 kV ESD voltage waveform

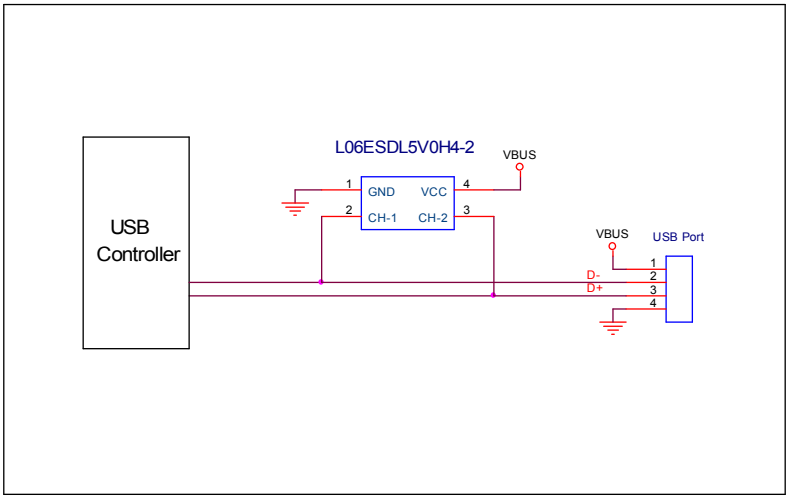


Figure 10. USB Power & Data Line ESD Protection

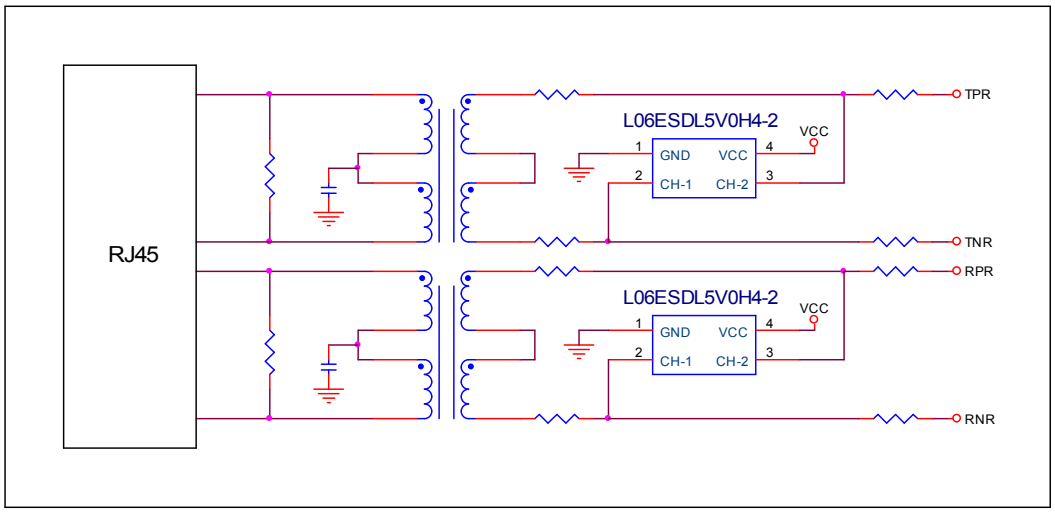


Figure 11. Ethernet/WAN/LAN/T1/E1 RJ45 Connectors ESD Protection

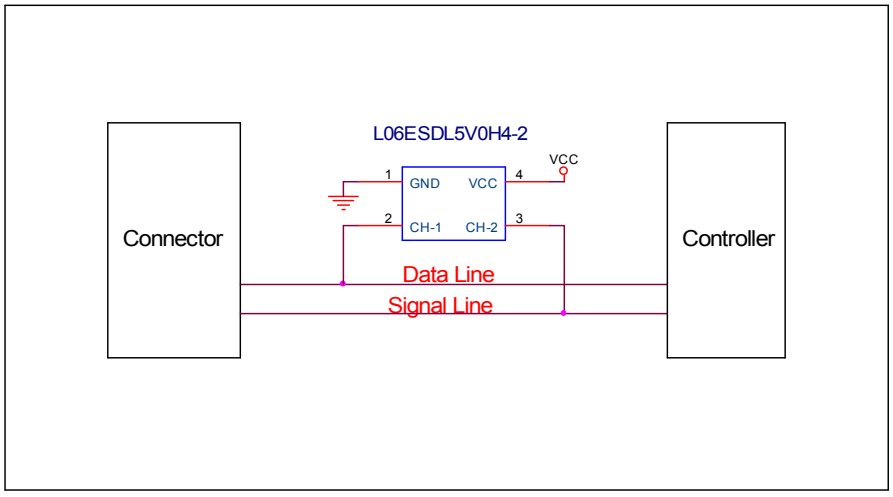
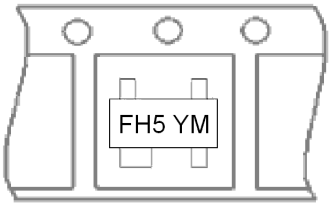


Figure 12. Portable Device Data & Signal Line ESD Protection

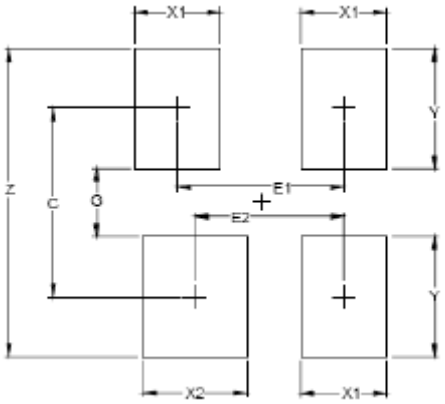
Marking & Orientation



Packaging Information

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L06ESDL5V0H4-2	3000	7	45000	180K

SOT-143 Soldering Pad Layout



Dim.	Millimeters	Inches
C	(2.20)	(0.086)
E1	1.92	0.075
E2	1.72	0.067
G	0.80	0.031
X1	1.00	0.039
X2	1.20	0.047
Y	1.40	0.055
Z	3.60	0.141

Important Notice and Disclaimer

LSC reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

LSC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does LSC assume any liability for application assistance or customer product design. LSC does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of LSC.

LSC products are not authorized for use as critical components in life support devices or systems without express written approval of LSC.