

ESD PROTECTION DEVICE

STAND-OFF VOLTAGE – 5.0 Volts
POWER DISSIPATION – 70 WATTS

GENERAL DESCRIPTION

The L07ESDL5V0C3-2X is a low capacitance Electrostatic Discharge (ESD) protection diode in a SOT-23 (TO-236AB) small SMD plastic package designed to protect one high speed data line from the damage caused by ESD and other transients..

FEATURES

- Protects two I/O lines (Data lines)
- Max. peak pulse power : P_{pp} = 70W at t_p = 8/20 us.
- Low clamping voltage
- High speed data line
- IEC 61000-4-2, level 4 (ESD), > ±15KV (air) ; > ±8KV (contact).
- Ultra Small SMD Plastic package

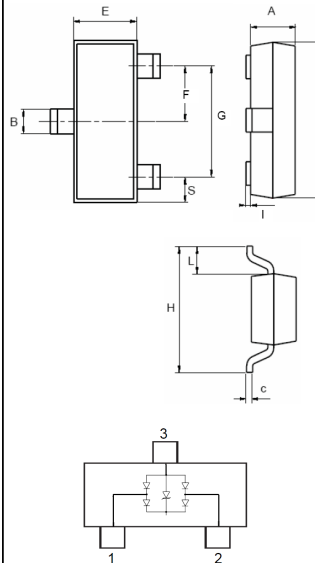
APPLICATION

- Computers and peripherals
- Communication system
- 10/100/1000 Ethernet
- Local Area Network (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: Level 1 per J-STD-020C
- Component in accordance to RoHs 2011/65/EU

SOT-23



SOT-23		
DIM.	MIN.	MAX.
A	0.89	1.05
B	0.30	0.51
C	0.085	0.18
D	2.75	3.04
E	1.20	1.60
F	0.85	1.05
G	1.70	2.10
H	2.10	2.75
I	0.0	0.1
L	0.60 typ.	
S	0.35	0.65

All Dimensions in millimeter

PIN ASSIGNMENT	
1, 2	Input Lines
3	Ground

Pin Configuration

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

Rating	Symbol	Value	Unit
Peak Pulse Power (t _p = 8/20us)	P _{pk}	70 (Max)	W
Peak Pulse Current (t _p = 8/20us)	I _{pp}	4.5	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}		---	---	5	V
Breakdown voltage	V _{BR}	I _R = 1 mA	6.0	---	---	V
Reverse leakage current	I _{RM}	V _{DRM} =5V	---	----	1.0	uA
Clamping Voltage	V _C	I _{PP} = 1A, t _p = 8/20μs	---	---	14	V
		I _{PP} =4.5A, t _p = 8/20μs	---	---	16	
Junction Capacitance	C _J	Any I/O pin to Ground V _R = 0V, f = 1MHz	---	---	1.0	pF

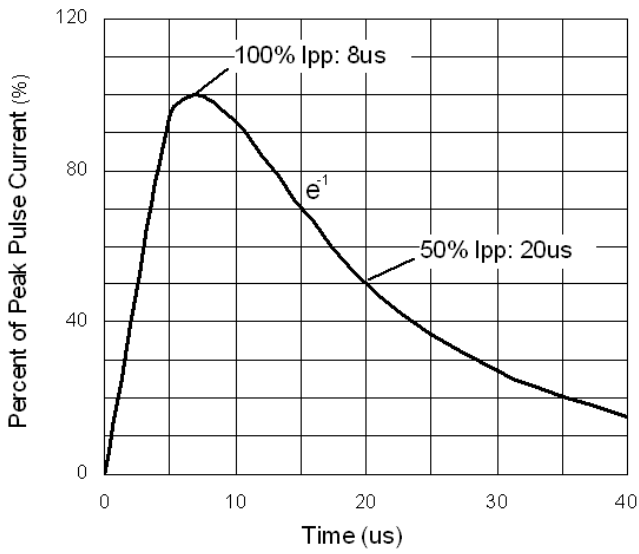


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

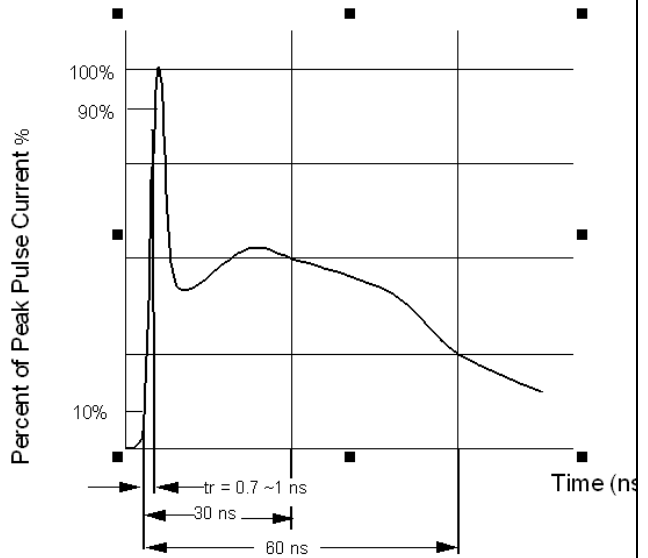


Figure 2. ESD pulse waveform according to IEC 61000-4-2

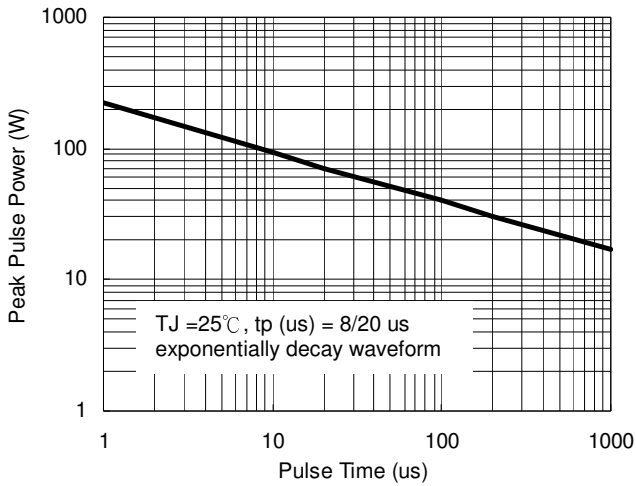


Figure 3. Power Dissipation versus Pulse Time

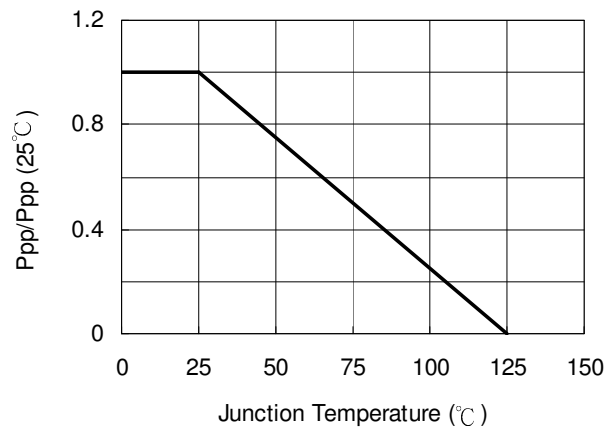


Figure 4. Peak pulse power versus TJ

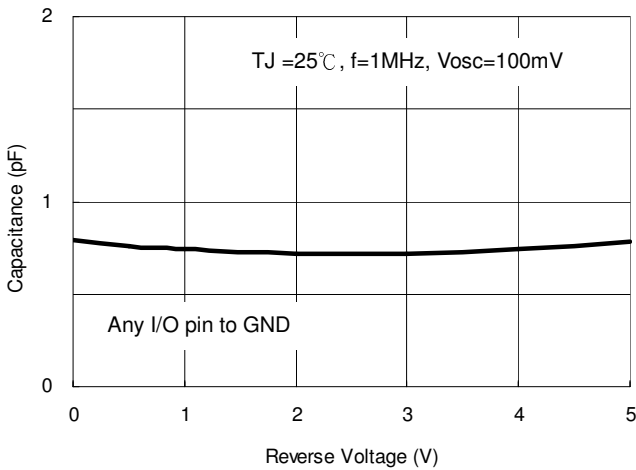


Figure 5. Capacitance versus Reverse Voltage

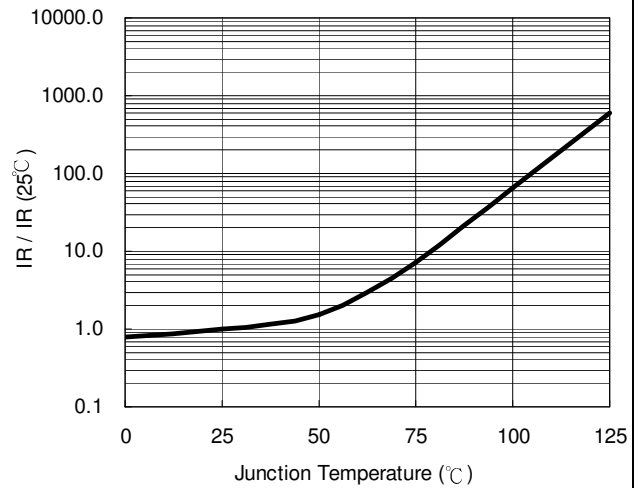


Figure 6. Reverse Leakage Current versus TJ

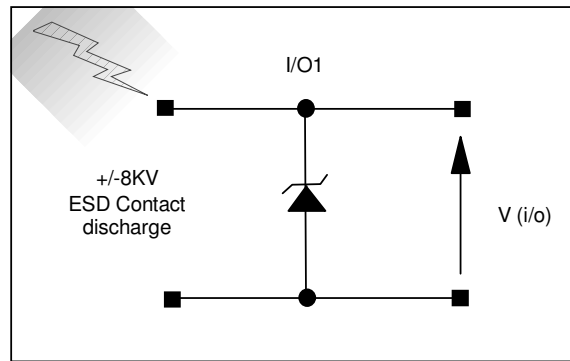


Figure 7. ESD Test Configuration

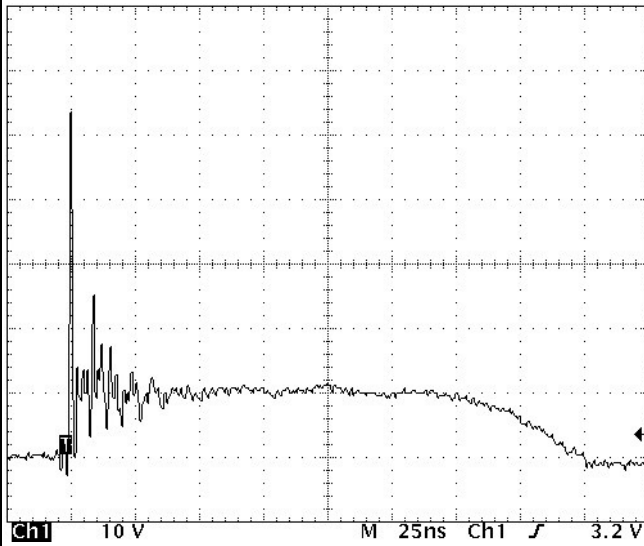


Figure 8. Clamped +8 kV ESD voltage waveform

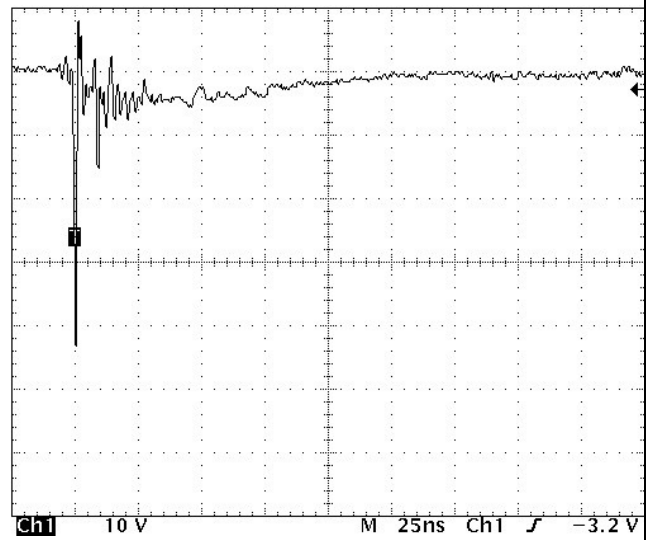


Figure 9. Clamped -8 kV ESD voltage waveform

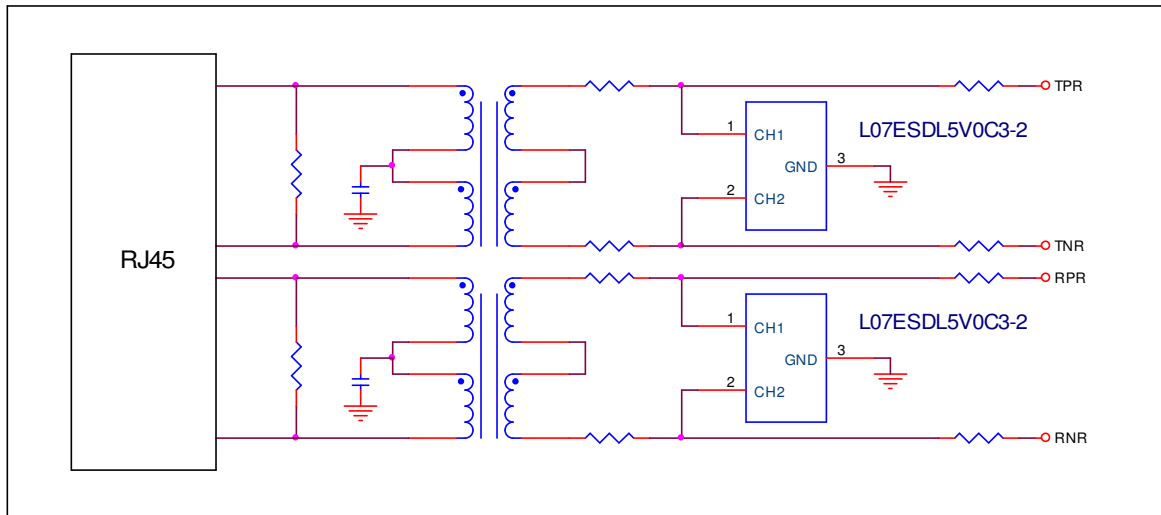


Figure 10. 10/100/1000 Ethernet/LAN RJ45 Connectors ESD Protection

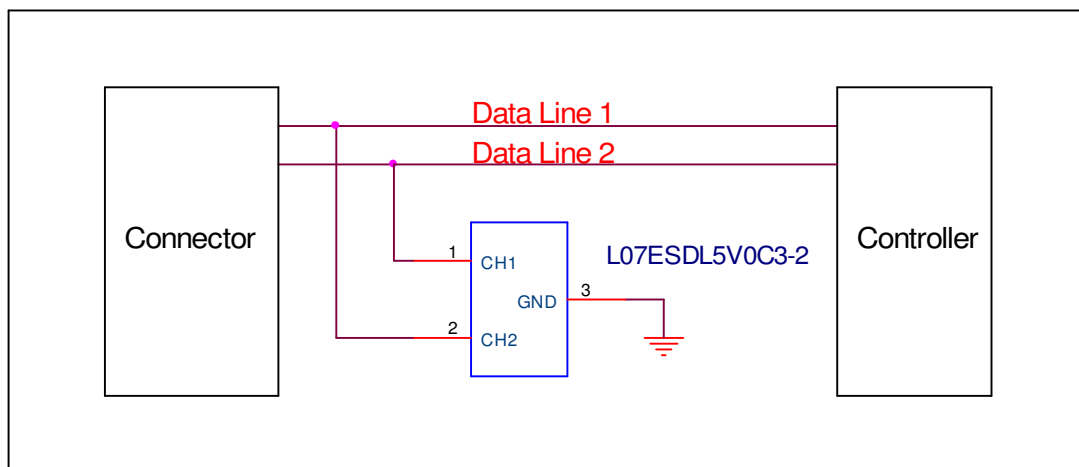
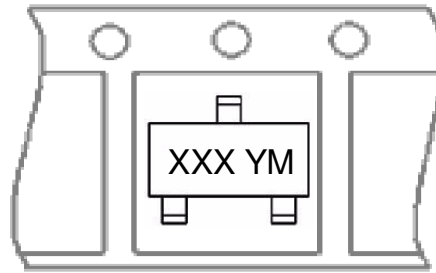


Figure 11. Computer & Communication System ESD Protection

Marking & Orientation

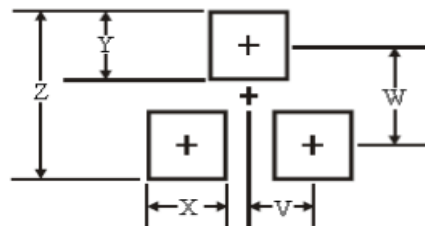


DEVICE	Wire	Marking	Packing
L07ESDL5V0C3-2	Au	GC5	Taping / Reel
L07ESDL5V0C3-2C	Cu	GCV	Taping / Reel

Packaging Information

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L07ESDL5V0C3-2 L07ESDL5V0C3-2C	3000	7	45000	180K

SOT-23 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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