

ESD PROTECTION DEVICE

STAND-OFF VOLTAGE – 5.0 Volts
POWER DISSIPATION – 250 WATTS

GENERAL DESCRIPTION

Ultra low capacitance bidirectional ElectroStatic Discharge (ESD) protection diodes in small Surface-Mounted Device (SMD) plastic packages designed to protect one data line from the damage caused by ESD.

FEATURES

- Protects one power or I/O line
- Max. peak pulse power : P_{pp} = 250W at t_p = 8/20 us.
- Ultra Low Capacitance : 2.0pF Typical
- Low clamping voltage
- IEC 61000-4-2, > ±25KV (air) ; > ±25KV (contact)
- IEC 61000-4-2, level 4 (ESD), > ±15KV (air) ; > ±8KV (contact)

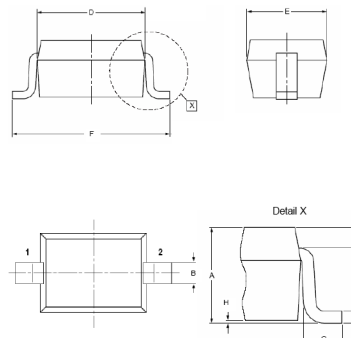
APPLICATION

- Ethernet - 10/100/1000 Base T
- Audio Phone jack
- Handheld - Wireless Systems
- USB Interface

MECHANICAL DATA

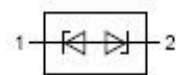
- Case Material: "Green" molding compound UL flammability classification 94V-0 (No Br,Sb, Cl)
- Terminals: Lead Free Plating (Matte Tin Finish), solderable per J-STD-002 and JESD22-B/02.
- Moisture Sensitivity: Leve 1 per J-STD-020C
- Component in accordance to RoHs 2011/65/EU

SOD-323



SOD-323		
DIM.	MIN.	MAX.
A	0.80	1.10
B	0.25	0.40
C	0.10	0.25
D	1.60	1.80
E	1.15	1.35
F	2.30	2.70
G	0.15	0.45
H	----	0.05
I	0.15	0.25

All Dimensions in millimeter



PIN ASSIGNMENT	
1	Cathode
2	Cathode

Pin diagram

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

Rating	Symbol	Value	Unit
Peak Pulse Power (t _p = 8/20us)	P _{pk}	250	W
Peak Pulse Current (t _p = 8/20us)	I _{pp}	17	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}		---	---	5.0	V
Breakdown voltage	V _{BR}	I _R = 1 mA	6.0	---	8.0	V
Reverse leakage current	I _{RM}	V _{DRM} = 5V	---	---	5	uA
Clamping Voltage	V _C	I _{PP} = 1A, t _p = 8/20μs	---	---	9.8	V
Clamping Voltage	V _C	I _{PP} = 17A, t _p = 8/20μs	---	---	15	V
Junction capacitance	C _J	V _R = 0V, f = 1MHz	---	2.0	3.5	pF

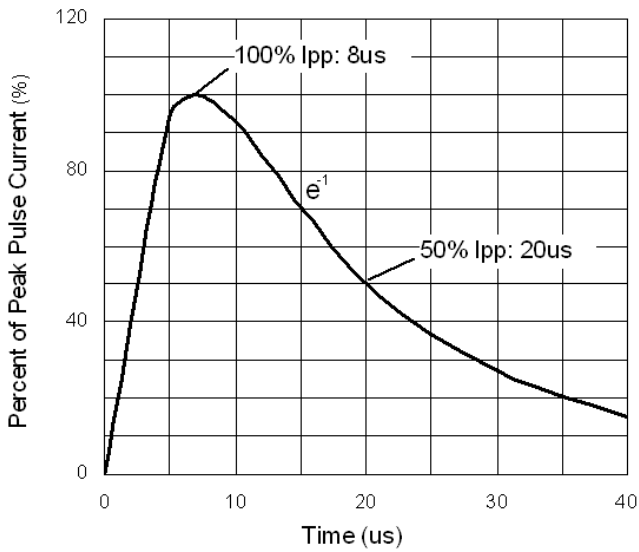


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

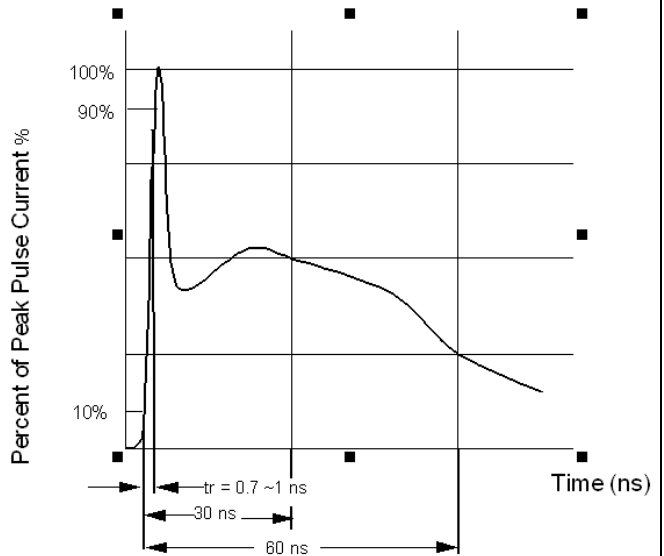


Figure 2. ESD pulse waveform according to IEC 61000-4-2

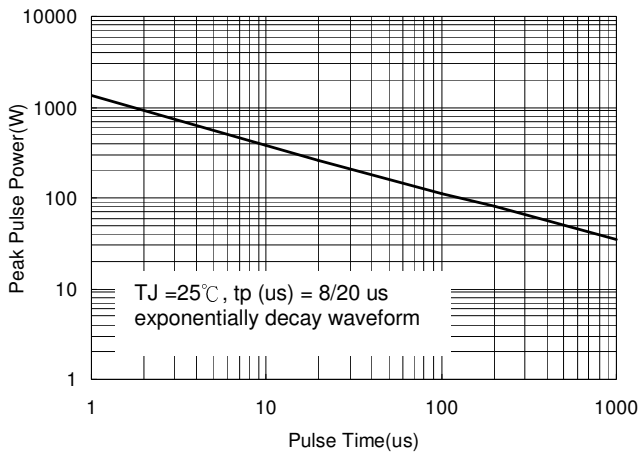


Figure 3. Power Dissipation versus Pulse Time

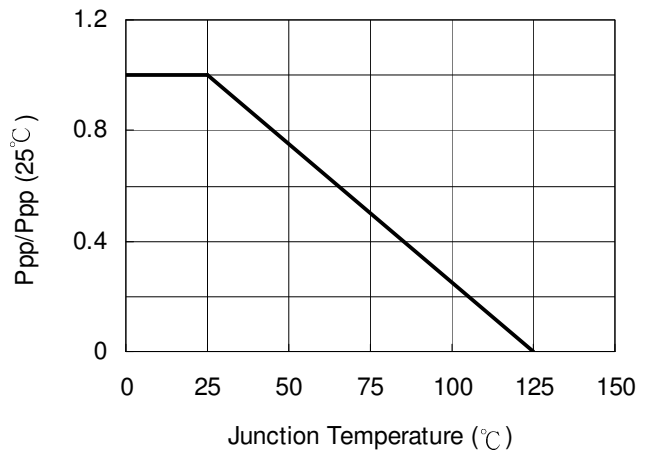


Figure 4. Peak pulse power versus TJ

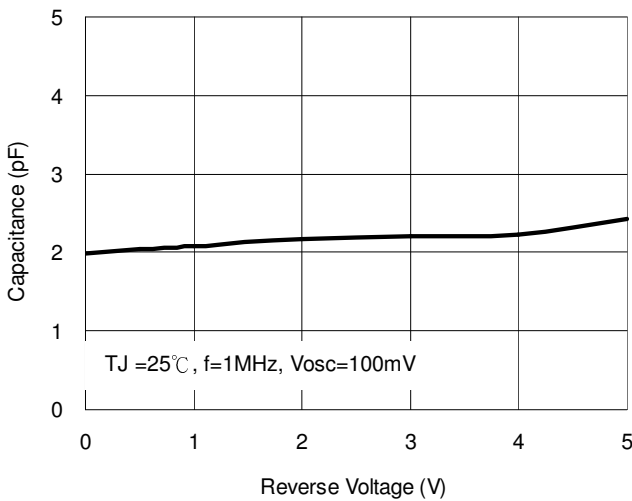


Figure 5. Typical Junction Capacitance

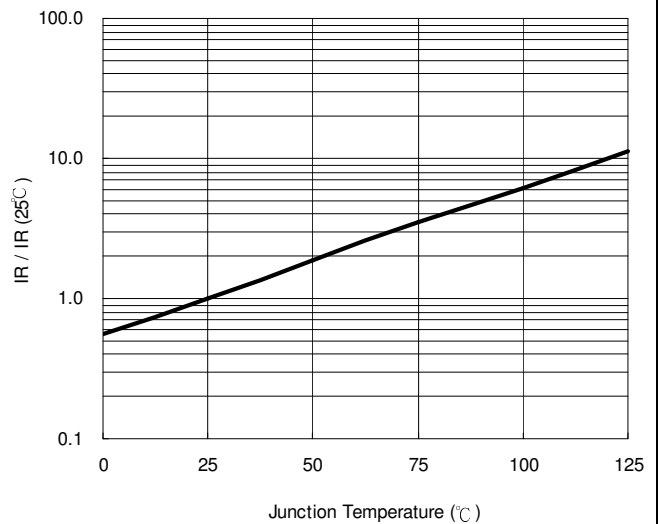


Figure 6. Reverse Leakage Current versus TJ

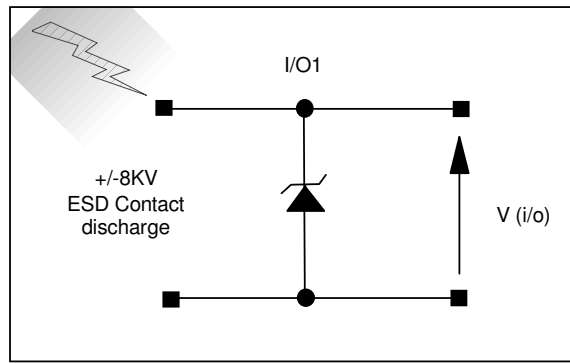


Figure 7. ESD Test Configuration

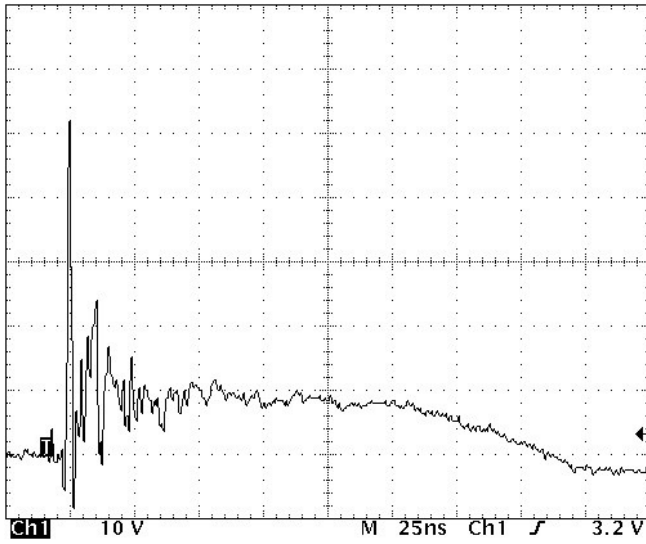


Figure 8. Clamped +8 kV ESD voltage waveform

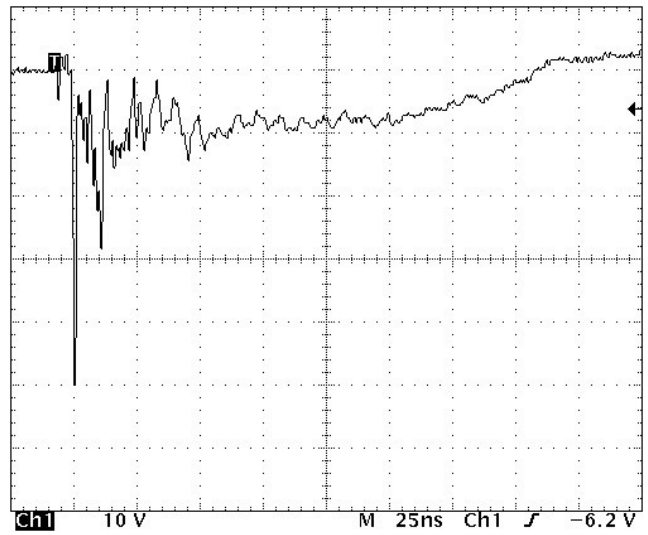


Figure 9. Clamped -8 kV ESD voltage waveform

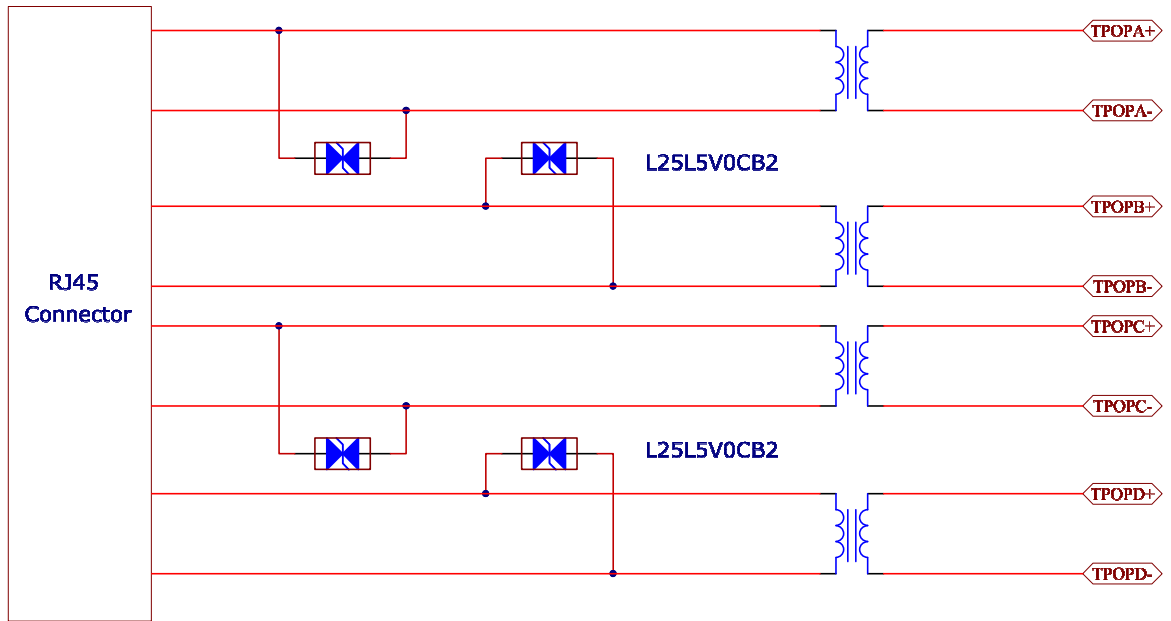


Figure 10. RJ45 10/100 Interface ESD and Lightning Protection (Line to Line)

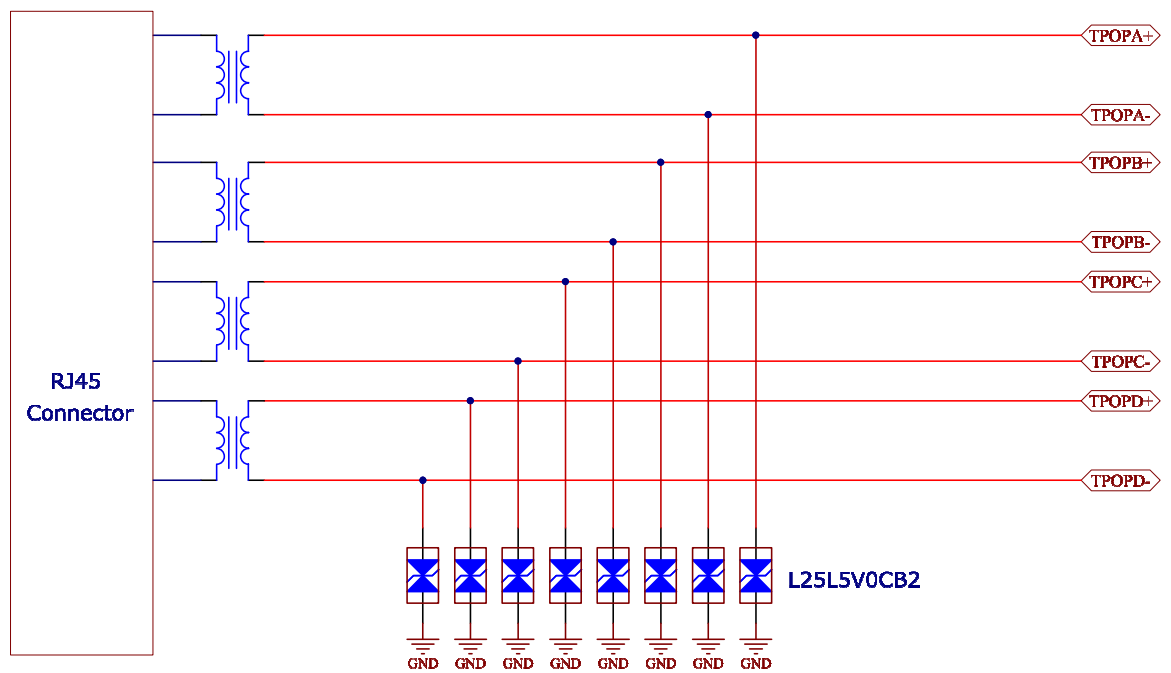


Figure 11. RJ45 10/100 Interface ESD and Lightning Protection (Line to GND)

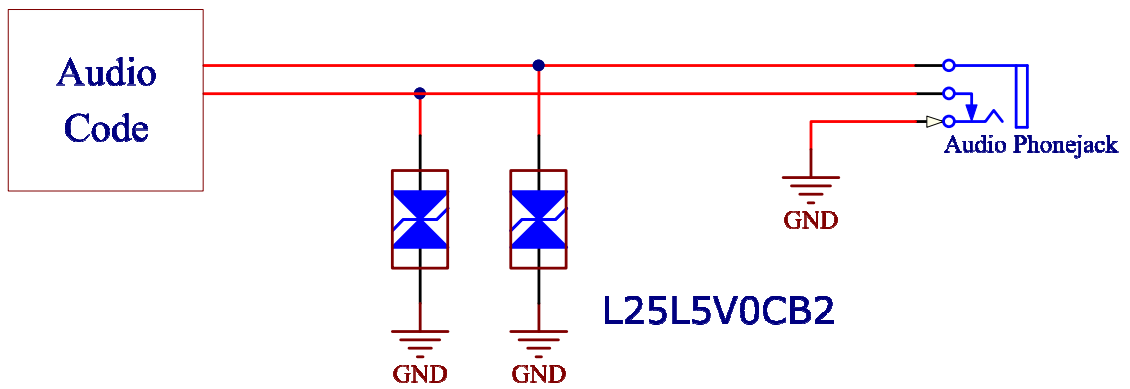


Figure 12. Audio Phone jack ESD protect solution

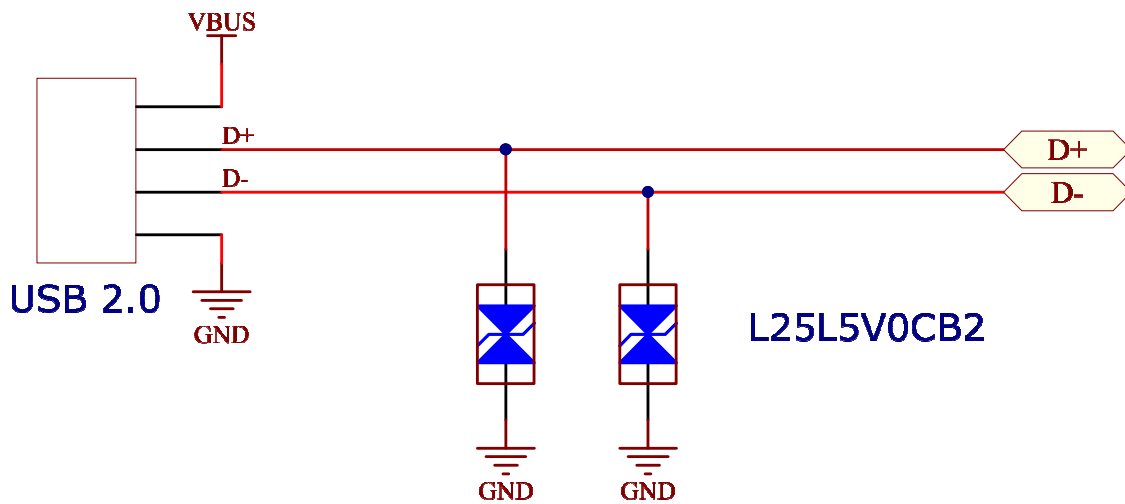
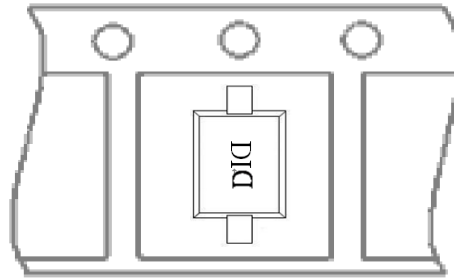


Figure 13. USB 2.0 ESD protect solution

Marking & Orientation

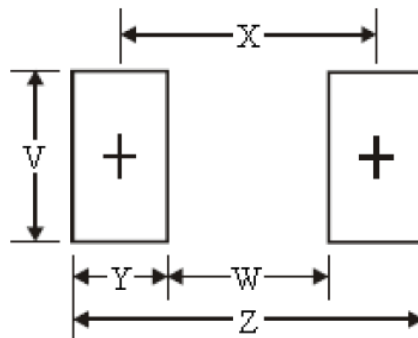


Note: Marking is none direction

Packaging Information

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L25L5V0CB2	3000	7	45000	90K/180K

SOD-323 Soldering Pad Layout



Dim.	Millimeters	Inches
Z	3.05	0.120
X	2.15	0.084
W	1.25	0.049
Y	0.90	0.035
V	0.70	0.027

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