

**ESD PROTECTION DEVICE**

STAND-OFF VOLTAGE – **5.0 Volts**  
POWER DISSIPATION – **350 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<sub>pp</sub> = 350W at t<sub>p</sub> = 8/20 us.
- Ultra Low Capacitance : 1.6pF Typical
- Low clamping voltage
- IEC 61000-4-2, level 4 ( ESD ), > ±15KV ( air ) ; > ±8KV ( contact )

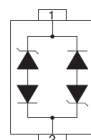
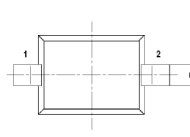
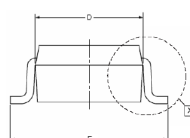
**APPLICATION**

- Ethernet - 10/100/1000 Base T
- Cellular Phones
- Handheld - Wireless Systems
- Personal Digital Assistant (PDA)
- 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 2002/95/E

**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

**MAXIMUM RATINGS (T<sub>j</sub>= 25°C unless otherwise noticed)**

Rating	Symbol	Value	Unit
Peak Pulse Power (t <sub>p</sub> = 8/20us)	P <sub>pk</sub>	350	W
Peak Pulse Current (t <sub>p</sub> = 8/20us)	I <sub>pp</sub>	17	A
Operating Junction Temperature Range	T <sub>J</sub>	-55 to + 125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to + 150	°C
Soldering Temperature, t max = 10s	T <sub>L</sub>	260	°C

**ELECTRICAL CHARACTERISTICS (T<sub>j</sub>= 25°C unless otherwise noticed)**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse standoff voltage	V <sub>RWM</sub>		---	---	5.0	V
Breakdown voltage	V <sub>BR</sub>	I <sub>R</sub> = 1 mA	6.0	---	8.0	V
Reverse leakage current	I <sub>RM</sub>	V <sub>DRM</sub> = 5V	---	---	5	uA
Clamping Voltage	V <sub>C</sub>	I <sub>pp</sub> = 1A, t <sub>p</sub> = 8/20μs	---	---	9.8	V
Clamping Voltage	V <sub>C</sub>	I <sub>pp</sub> = 17A, t <sub>p</sub> = 8/20μs	---	---	21	V
Junction capacitance	C <sub>J</sub>	V <sub>R</sub> = 0V, f = 1MHz	---	1.6	3.5	pF

REV. 4, Sep-2012, KSIR28

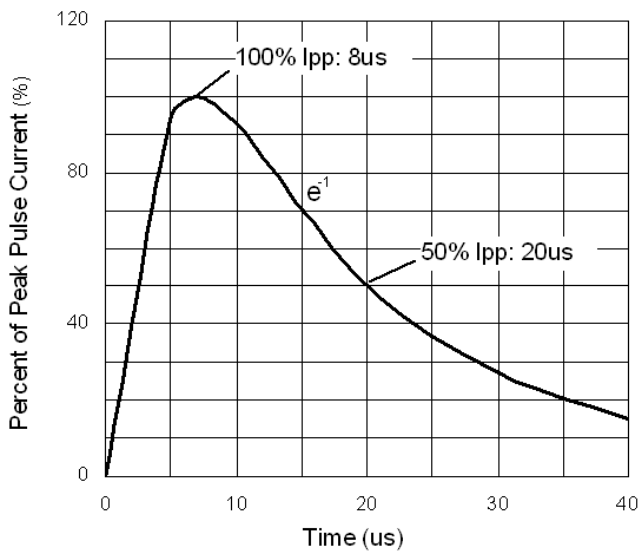


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

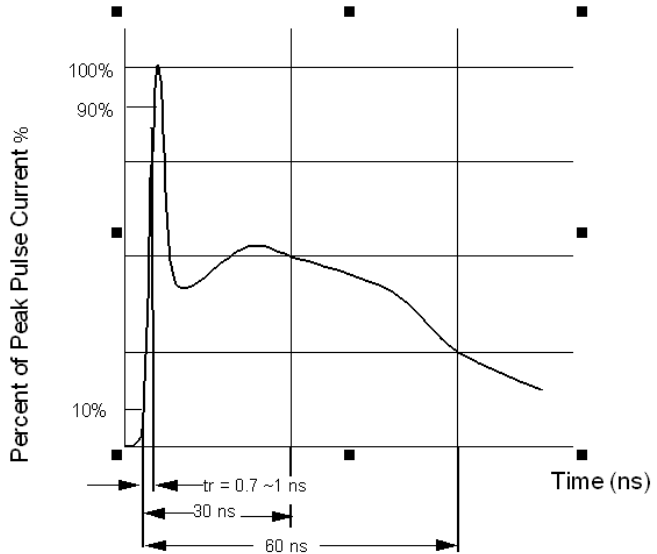


Figure 2. ESD pulse waveform according to IEC 61000-4-2

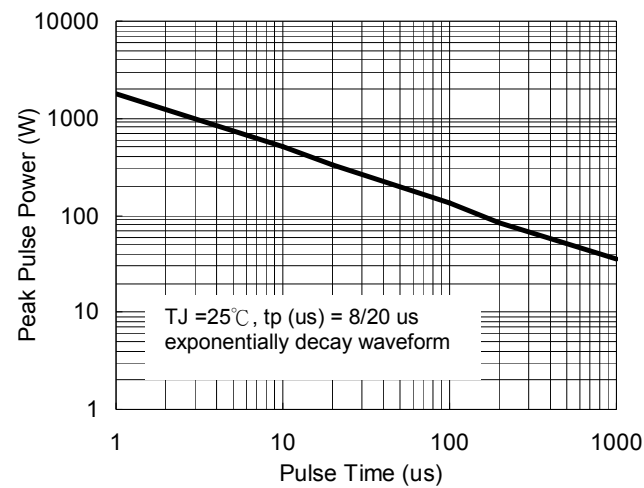


Figure 3. Power Dissipation versus Pulse Time

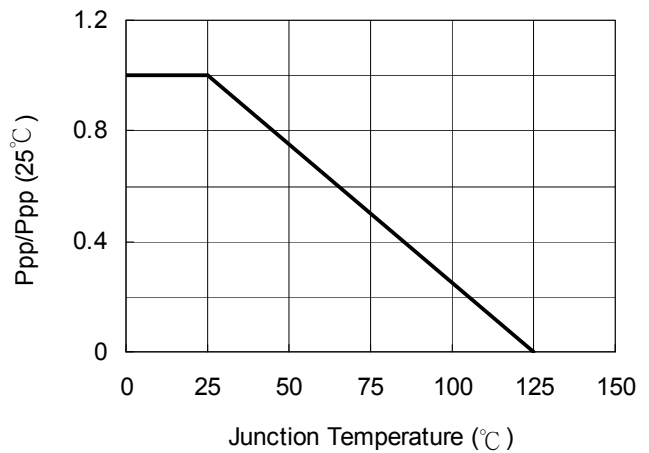


Figure 4. Peak pulse power versus  $T_J$

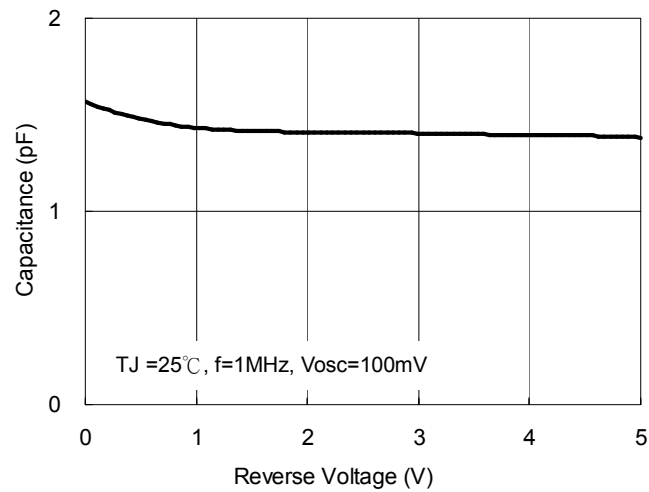


Figure 5. Typical Junction Capacitance

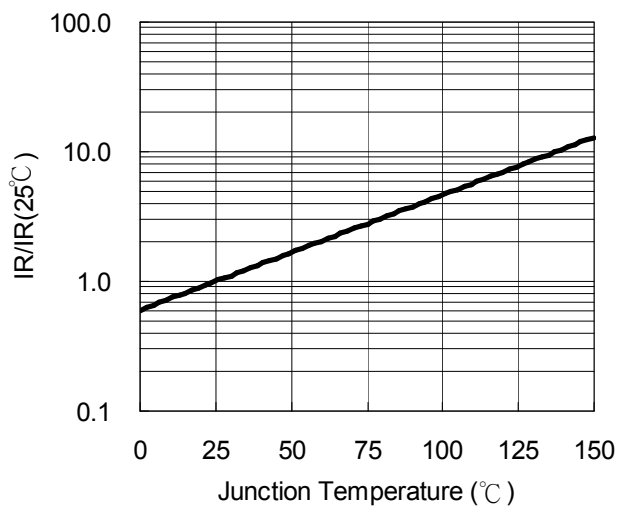


Figure 6. Reverse Leakage Current versus  $T_J$

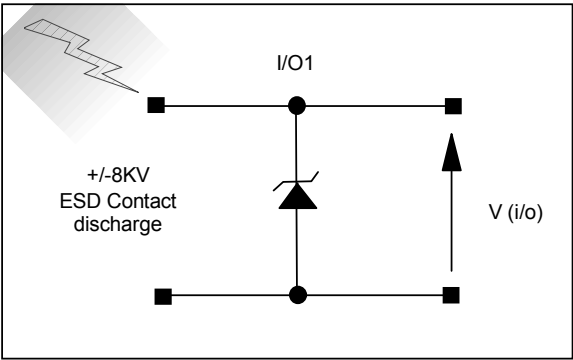


Figure 7. ESD Test Configuration

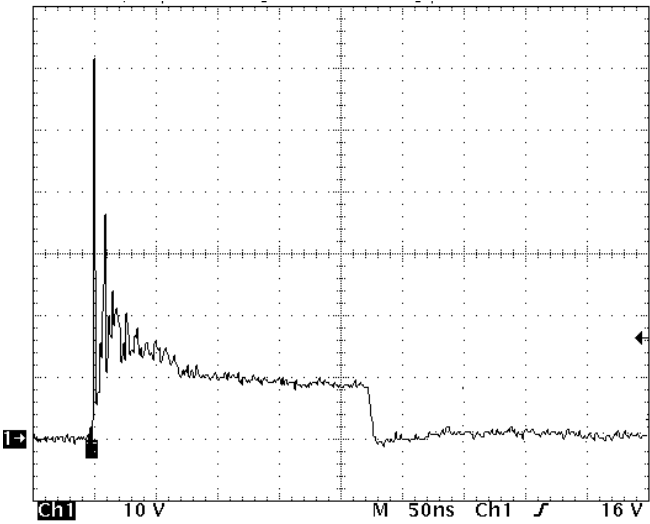


Figure 8. Clamped +8 kV ESD voltage waveform

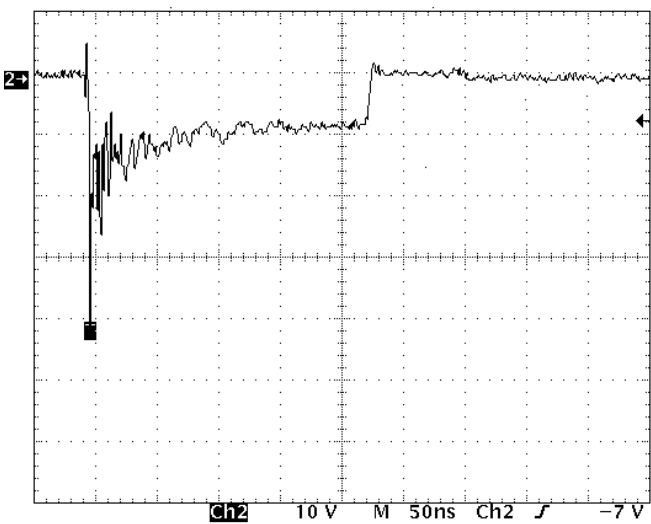
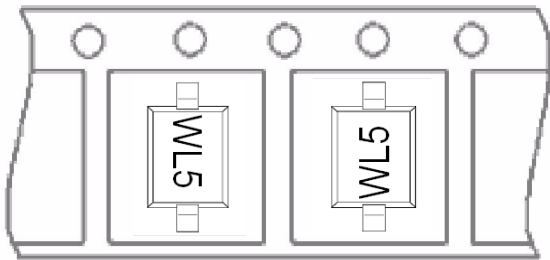


Figure 9. Clamped -8 kV ESD voltage waveform

Marking & Orientation

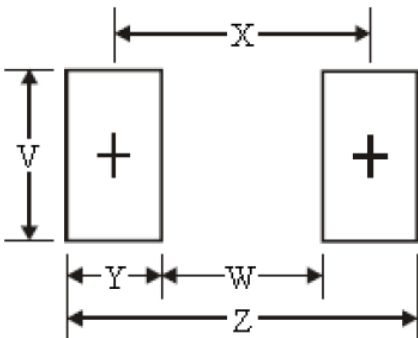


Note: Marking is none direction

Packaging Information

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L35ESDL5V0CB2	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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