

ESD PROTECTION DEVICE

STAND-OFF VOLTAGE – 3.3 Volts
POWER DISSIPATION – 90 WATTS

GENERAL DESCRIPTION

L09ESD3V3CP2 is designed to replace multilayer varistors (MLVs) in portable applications where low operating voltage is vital. They offer superior electrical characteristics such as lower clamping voltage and no device degradation when compared to MLVs. They are designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD), lightning, electrical fast transients (EFT), and cable discharge events (CDE).

FEATURES

- Protects one power or I/O line
- Max. peak pulse power : P_{pp} = 90W at t_p = 8/20 us.
- Low clamping voltage
- IEC 61000-4-2, level 4 (ESD), > ±15KV (air) ; > ±8KV (contact)

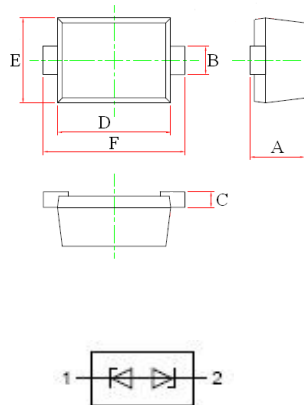
APPLICATION

- Cellular Handsets & Accessories
- Notebooks & Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- MP3 Players

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-923



SOD-923		
DIM.	MIN.	MAX.
A	0.36	0.41
B	0.18	0.26
C	0.08	0.14
D	0.76	0.84
E	0.56	0.64
F	0.92	1.08

All Dimensions in millimeter

PIN ASSIGNMENT	
1	Cathode
2	Cathode

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

Rating	Symbol	Value	Unit
Peak Pulse Power (t _p = 8/20us)	P _{pk}	90	W
Peak Pulse Current (t _p = 8/20us)	I _{pp}	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}		---	---	3.3	V
Punch Through Voltage	V _{PT}	I _{SB} = 2uA	3.5	---	---	V
Snap-Back Voltage	V _{SB}	I _{SB} = 50 mA	2.8	---	---	V
Reverse leakage current	I _{RM}	V _{DRM} = 3.3V	---	0.05	0.5	uA
Clamping Voltage	V _C	I _{pp} = 1A, t _p = 8/20μs	---	6.0	8.0	V
Clamping Voltage	V _C	I _{pp} = 5 A, t _p = 8/20μs	---	8.5	18	V
Junction capacitance	C _J	V _R = 0V, f = 1MHz	---	11	15	pF

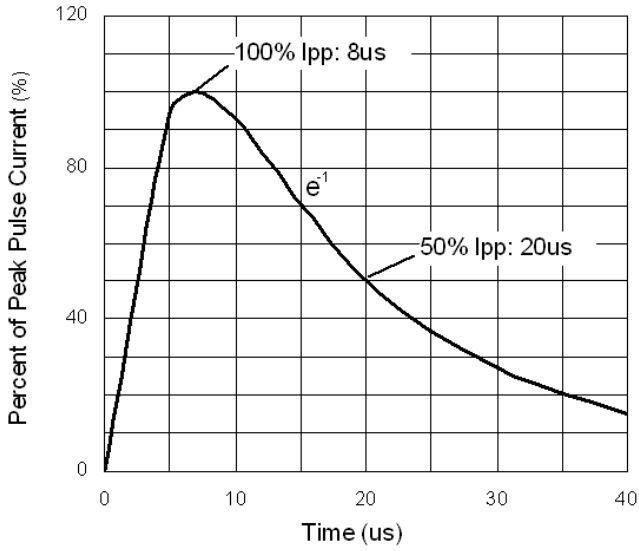


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

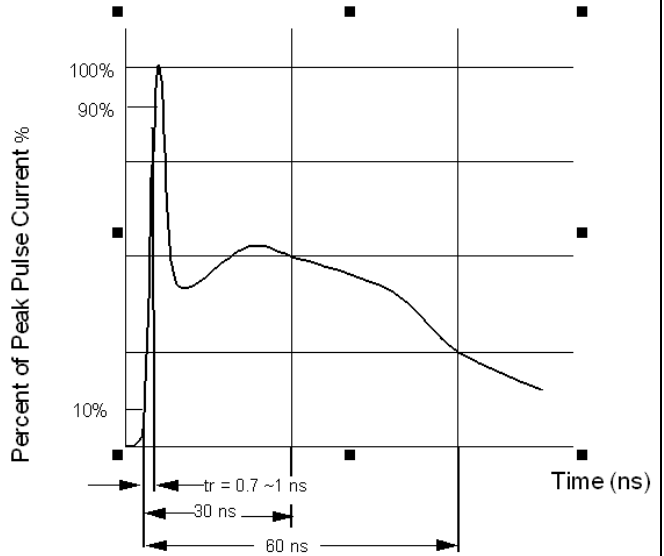


Figure 2. ESD pulse waveform according to IEC 61000-4-2

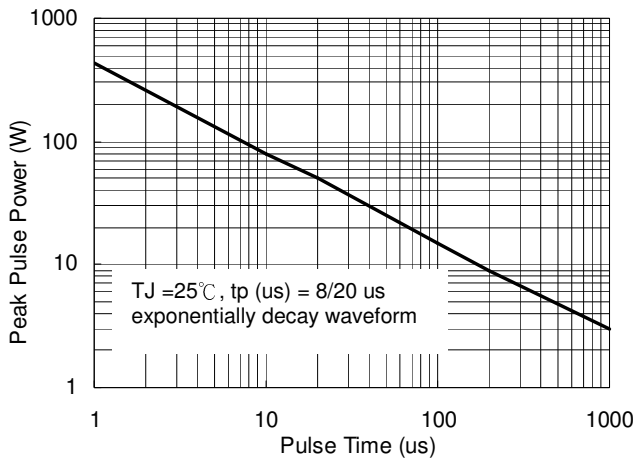


Figure 3. Power Dissipation versus Pulse Time

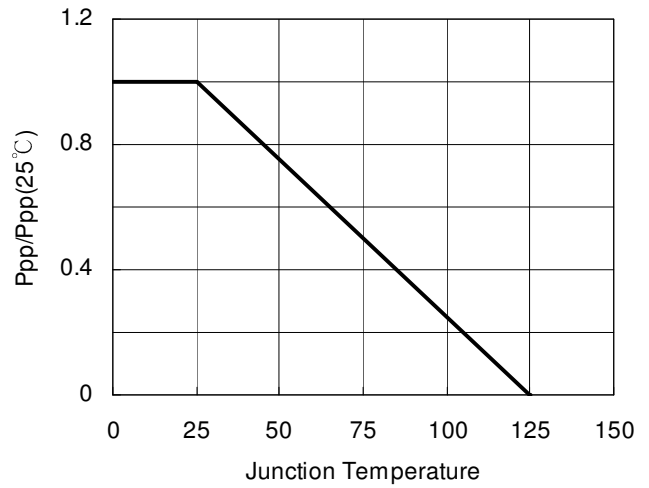


Figure 4. Peak pulse power versus TJ

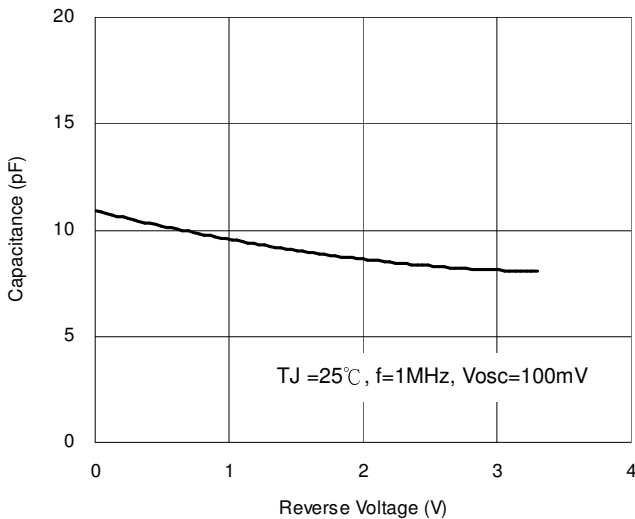


Figure 5. Typical Junction Capacitance

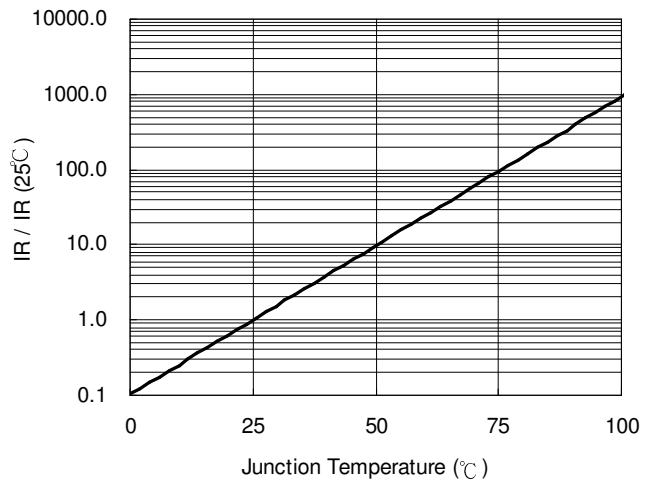


Figure 6. Reverse Leakage Current versus TJ

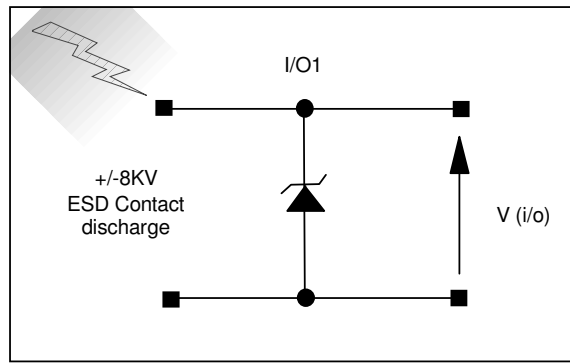


Figure 7. ESD Test Configuration

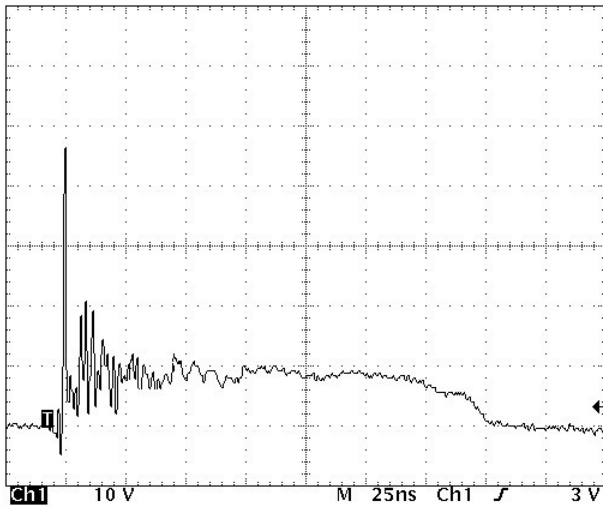


Figure 8. Clamped +8 kV ESD voltage waveform

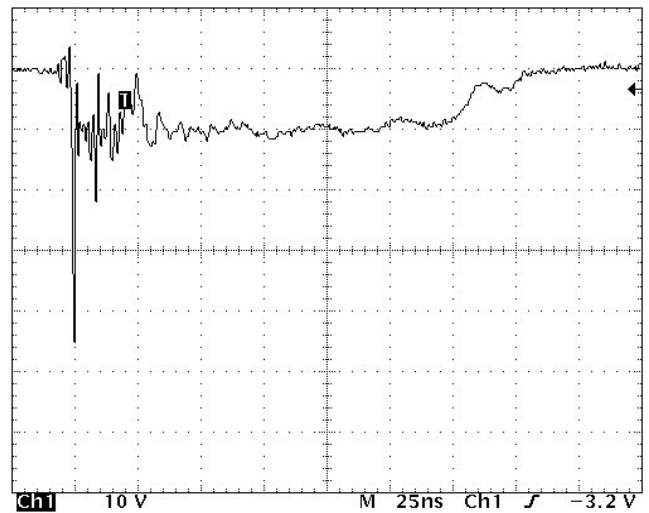
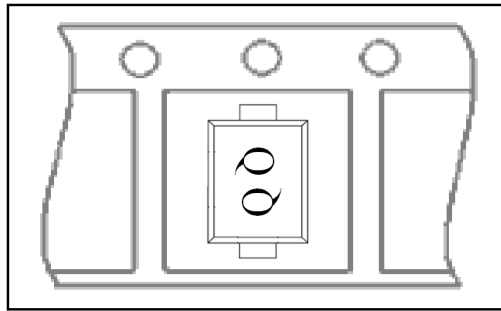


Figure 9. Clamped -8 kV ESD voltage waveform

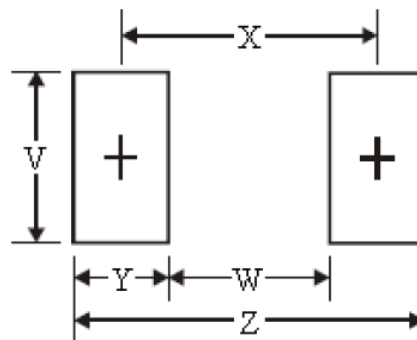
Marking & Orientation



Packaging Information

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L09ESD3V3CP2	8000	7	120K	240K

SOD-923 Soldering Pad Layout



Dim.	Millimeters	Inches
Z	1.20	0.047
X	0.90	0.035
W	0.60	0.023
Y	0.30	0.011
V	0.40	0.015

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