

**BIDIRECTIONAL
ESD PROTECTION DIODE**

STAND-OFF VOLTAGE - **5.0** Volts
POWER DISSIPATION - **30** WATTS

GENERAL DESCRIPTION

- The L03ESDL5V0CG3-2 is designed to protect sensitive electronics from damage or latch up due to ESD, lightning, and other voltage induced transient events. The device will protect two line operating at 5.0 volts.

FEATURES

- Bi-directional ESD Protection of two line.
- Max. peak pulse power : Ppp = 30W at tp = 8/20 us
- IEC 61000-4-2, level 4 (ESD), > 15KV (air); > 8KV (contact).
- IEC 61000-4-5, Ipp = 2A at tp = 8/20 us.

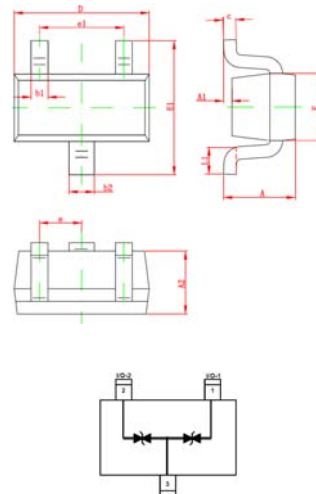
APPLICATION

- Computers and peripherals
- Communication system
- Audio & video equipment
- Portable Instrumentation

MECHANICAL DATA

- Case Material: "Green" molding compound UL flammability classification 94V-0 (No Br.Sb, Cl)
- Terminals: Lead Free Plating (Matte Tin Finish)
- Component in accordance to RoHs 2011/65/EU

SOT-523



SOT-523		
DIM.	MIN.	MAX.
A	0.70	0.90
A1	0.00	0.10
A2	0.60	0.80
b1	0.15	0.30
b2	0.15	0.33
c	0.10	0.20
D	1.50	1.70
E	0.75	0.85
E1	1.45	1.75
e	0.5 Typ	
e1	0.90	1.10
L1	0.20	0.44

All Dimensions in millimeter

PIN ASSIGNMENT	
1, 2	Input Lines
3	Ground

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

Rating	Symbol	Value	Unit
Peak pulse Power (8/20us Waveform)	PPPM	30	W
Peak Pulse Current (8/20us Waveform)	I _{PP}	2	A
Operating Junction Temperature Range	T _J	-55 to + 105	°C
Storage Temperature Range	T _{stg}	-55 to + 150	°C
Soldering Temperature, t max = 10s	T _L	260	°C

ELECTRICAL CHARACTERISTICS (Tj= 25°C unless otherwise noticed)

Parameter	Symbol	Conditions	Min	Max	Unit
Reverse standoff voltage	V _{DRM}	---	---	5.0	V
Reverse leakage current	I _{RM}	V _{DRM} = 5 V	---	100	nA
Breakdown voltage	V _{BR}	I _R = 1 mA	5.5	9.5	V
Junction capacitance(Each I/O pin and ground)	C _J	V _R = 0 V , f = 1MHz	---	3.5	pF
Clamping voltage	V _{CL}	I _{PP} = 1 A (8/20us)	---	12	V
Clamping voltage	V _{CL}	I _{PP} = 2 A (8/20us)	---	15	V

REV.1, Mar-2017, KSIR61

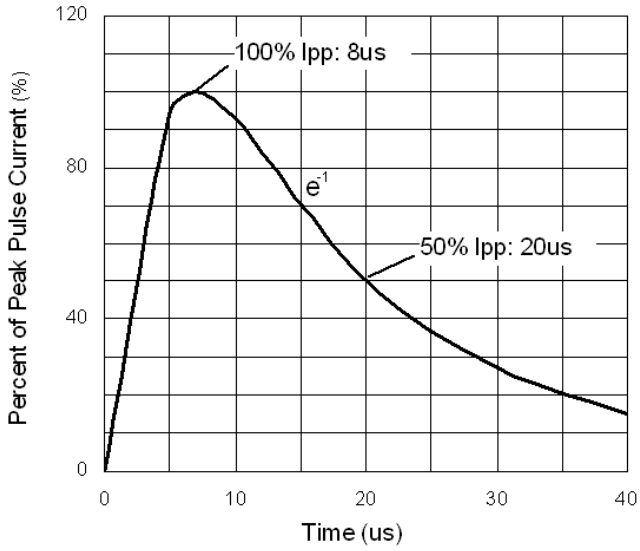


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

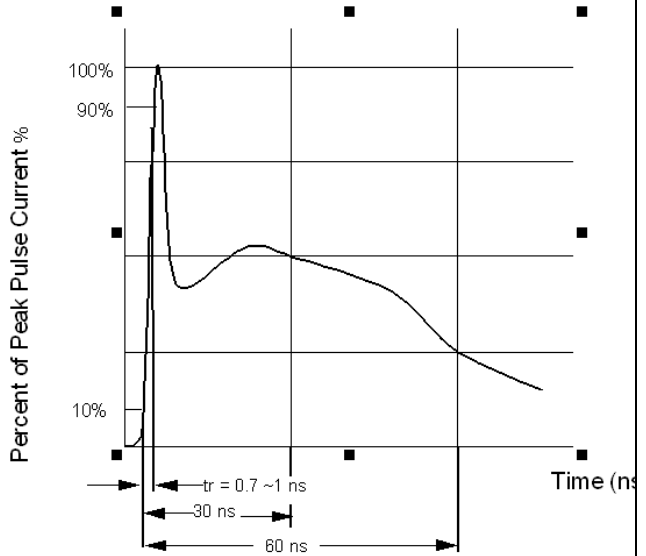


Figure 2. ESD pulse waveform according to IEC 61000-4-2

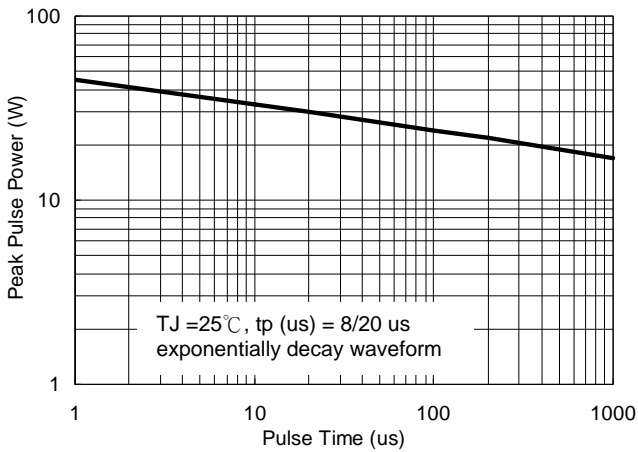


Figure 3. Power Dissipation versus Pulse Time

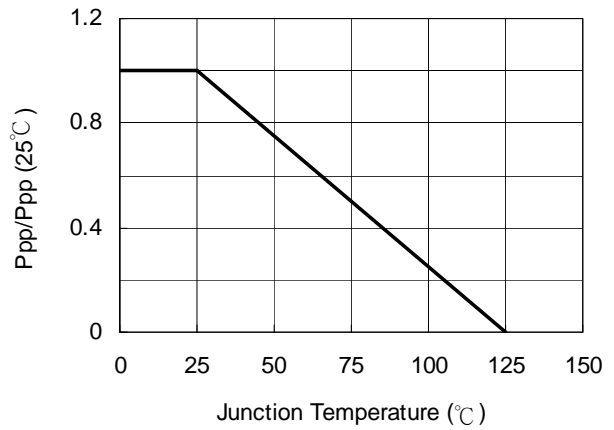


Figure 4. Peak pulse power versus TJ

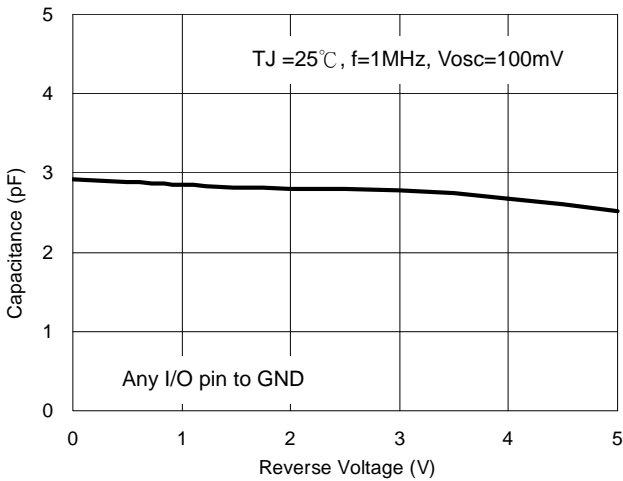


Figure 5. Capacitance versus Reverse Voltage

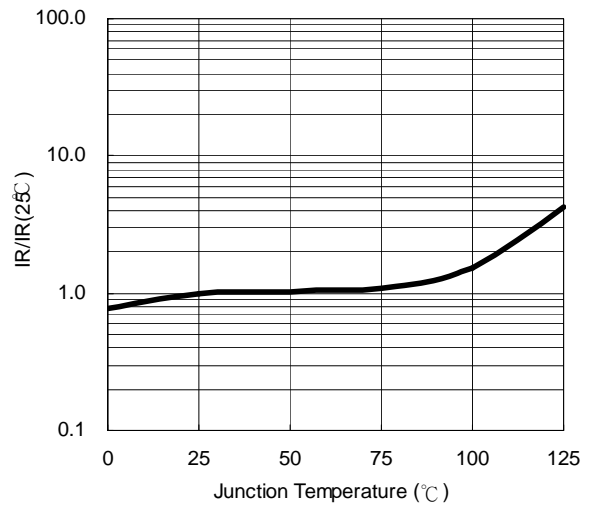


Figure 6. Reverse Leakage Current versus TJ

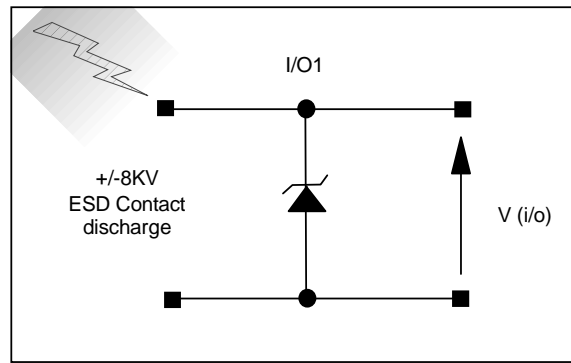


Figure 7. ESD Test Configuration

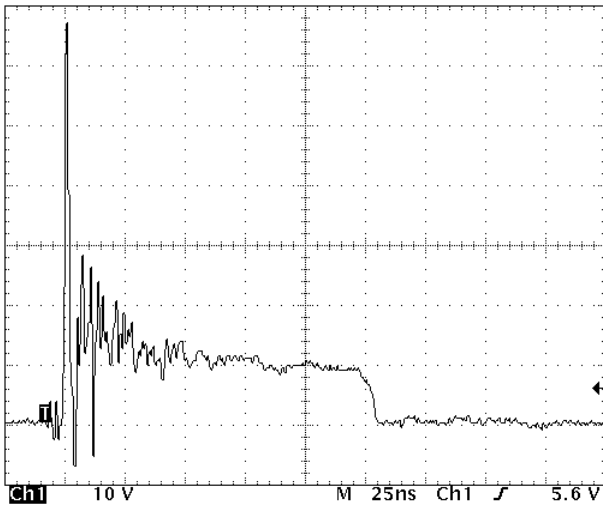


Figure 8. Clamped +8 kV ESD voltage waveform

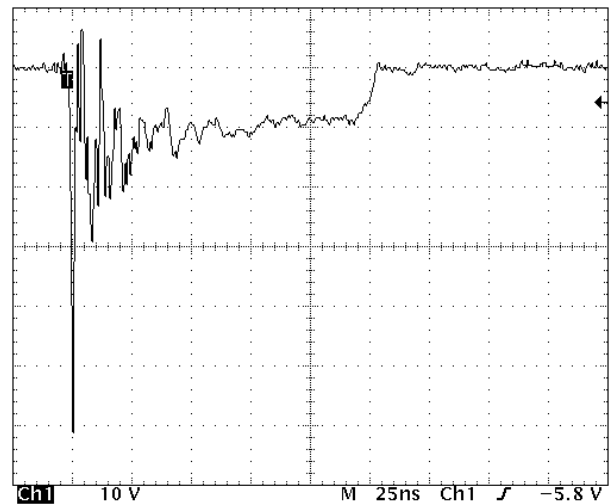


Figure 9. Clamped -8 kV ESD voltage waveform

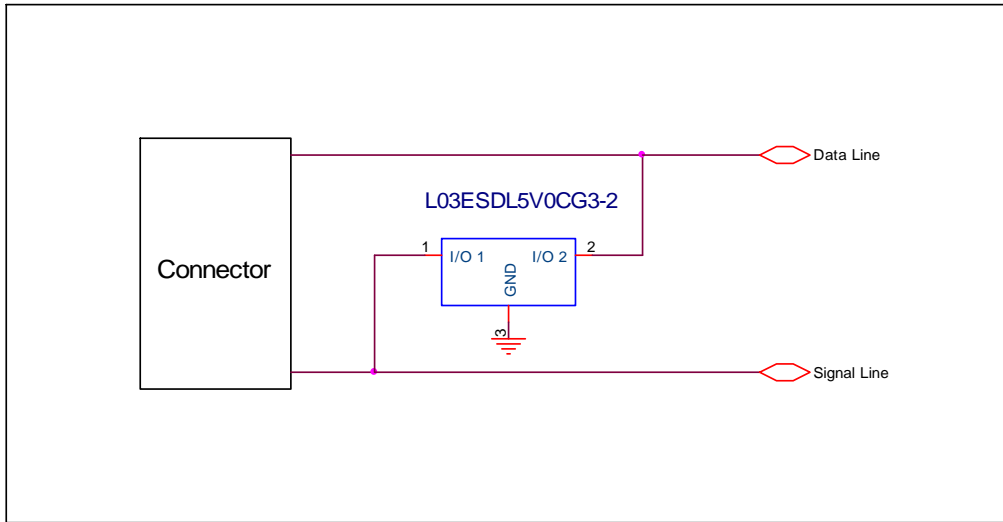


Figure 10. Computers, Peripherals, and Communication System ESD Protection

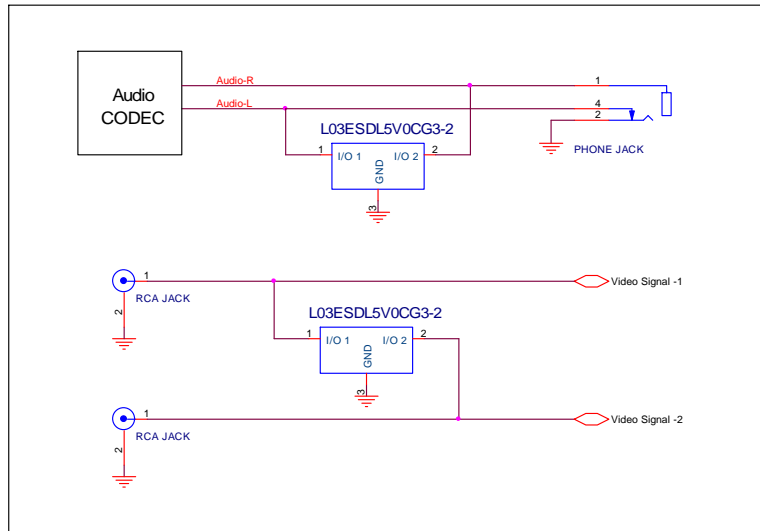


Figure 11. Audio and Video Equipment ESD Protection

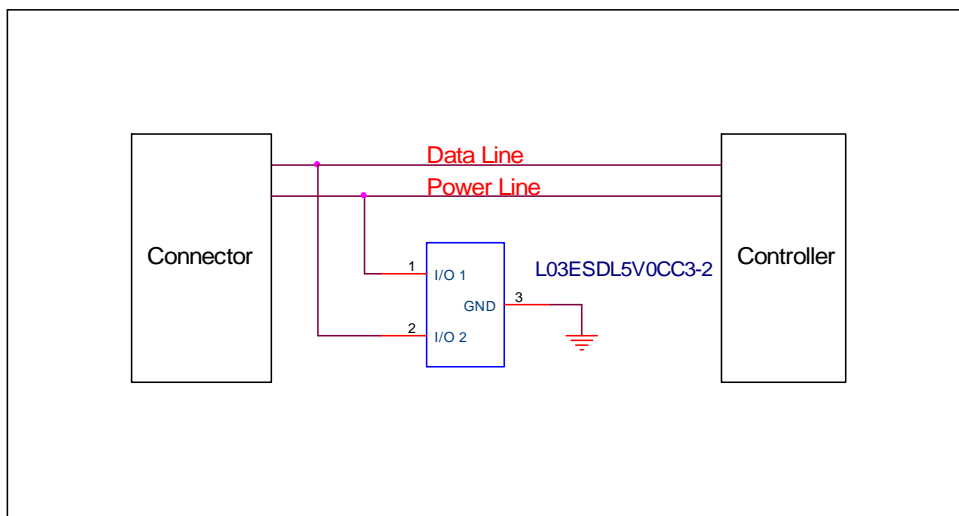
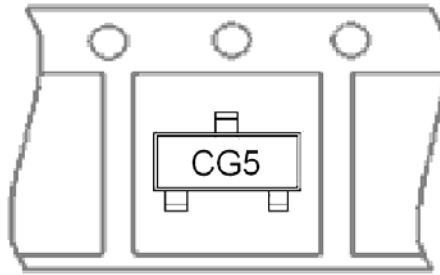


Figure 12. Portable Instrumentation ESD Protection

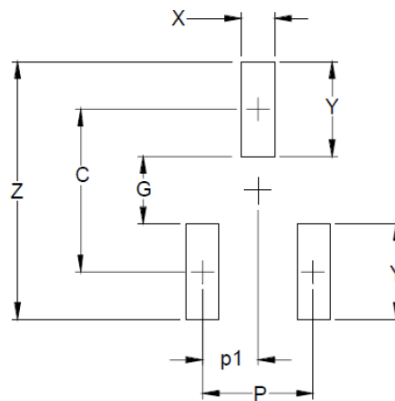
Marking & Orientation



Packaging Information

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L03ESDL5V0CG3-2	3000	7	45000	180K

SOT-523 Soldering Pad Layout



Dim.	Millimeters	Inches
C	(1.40)	(0.055)
P	1.00	0.39
p1	0.50	0.20
G	0.60	0.24
X	0.40	0.16
Y	0.80	0.31
Z	2.20	0.87

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