LITE-ON SEMICONDUCTOR

L05L5V0D6-4C

ESD PROTECTION DIODE

STAND-OFF VOLTAGE – 5.0 Volts
POWER DISSIPATION - 50 Watts

GENERAL DESCRIPTION

The L05L5V0D6-4C is ultra low capacitance ESD designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

FEATURES

- ESD Protect for 4 high-speed I/O channels
- Low leakage current and clamping voltage
- Low capacitance: 1.1pF typical
- Low clamping voltage
- IEC 61000-4-2, level 4 (ESD), > ±15KV (air) ; > ±8KV (contact)
- Qualified to AEC-Q101 Rev_C

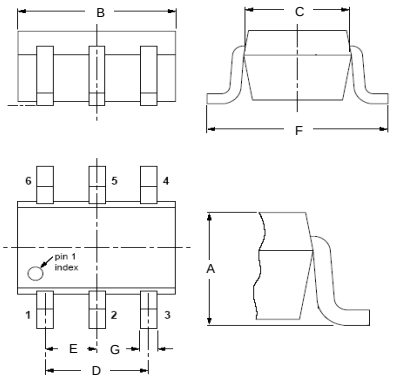
APPLICATION

- I/O ports and Buses of Mobile Devices
- USB2.0 Power and Data lines protection
- Notebook and PC Computers
- Monitors and Flat Panel Displays
- IEEE 1394 Firewire Ports
- Video Graphics Cards
- MIS Ports

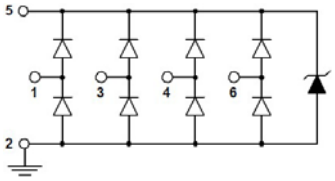
MECHANICAL DATA

- 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-363



SOT-363		
DIM.	MIN.	MAX.
A	0.80	1.10
B	1.80	2.20
C	1.15	1.40
D	1.30(Typ)	
E	0.65(Typ)	
F	2.00	2.45
G	0.15	0.35
All Dimensions in millimeter		



4 lines Protection

PIN ASSIGNMENT	
1,3,4,6	I/O Lines
5	Vcc
2	Ground

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power (8/20us waveform)	P_{PP}	50	W
Peak pulse current (8/20us waveform)	I_{PP}	6.5	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

PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX	UNIT
Reverse standoff voltage	Any pin to ground	V_{DRM}	--	--	5	V
Breakdown voltage	I_t = 1mA	V_{BR}	6	--	--	V
Reverse leakage current	V_{DRM} = 5V	I_{RM}	--	--	5	uA
Junction capacitance	V_R = 0~2.5V, f = 1MHz, Any pin to ground	C_J	--	1.1	1.6	pF
Clamping voltage	I_{PP} = 5A (8/20 us) , Any pin to ground	V_C	--	--	10	V

RATING AND CHARACTERISTIC CURVES
L05L5V0D6-4C

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

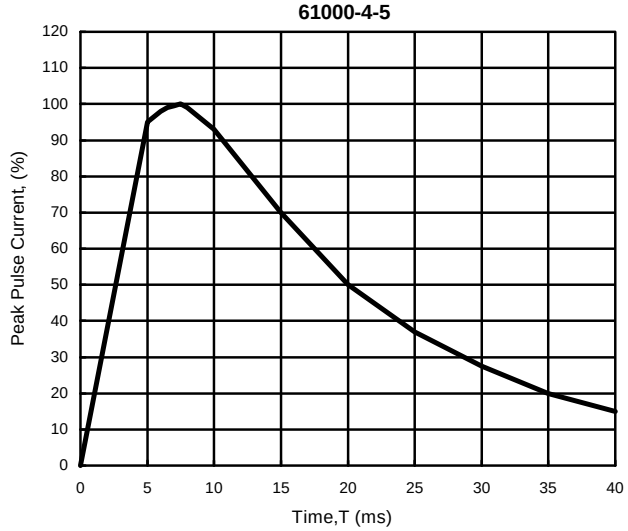


FIG .2- ESD pulse waveform according to IEC 61000-4-2

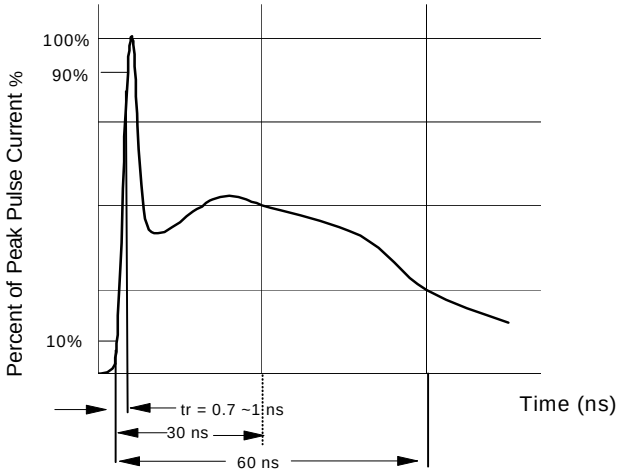


FIG.3- power dissipation versus pulse time

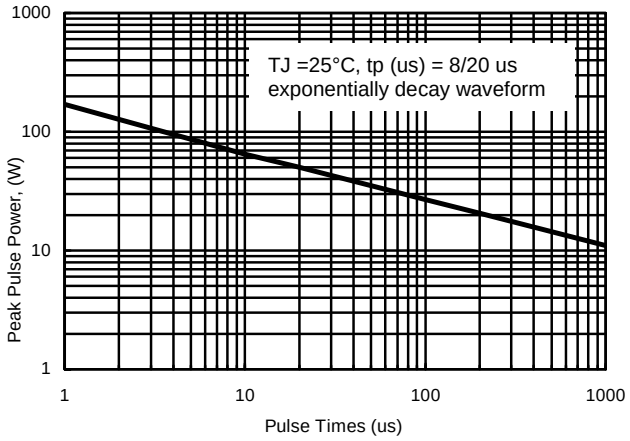


FIG.4- peak pulse power versus Tj

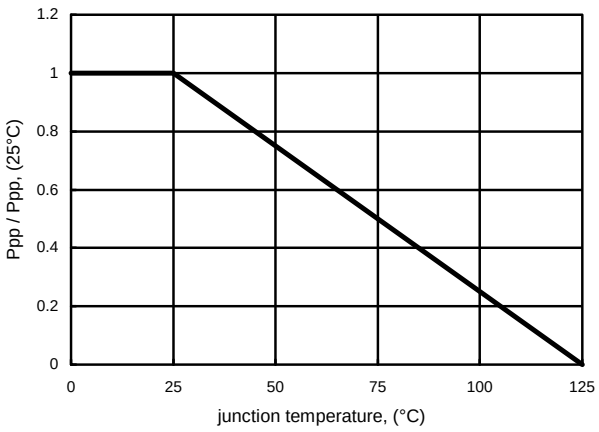


FIG.5- typical junction capacitance

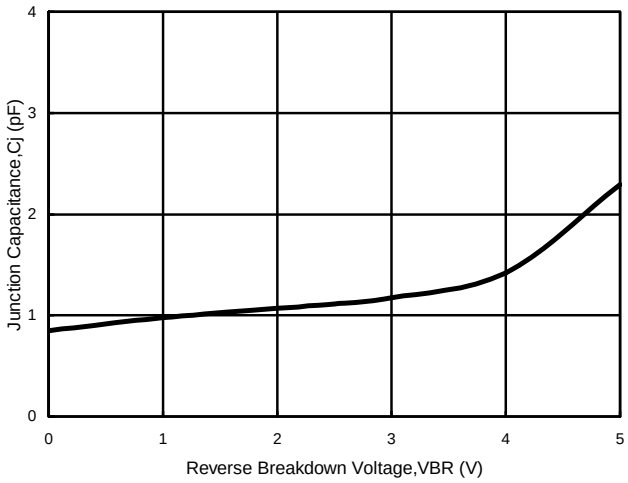
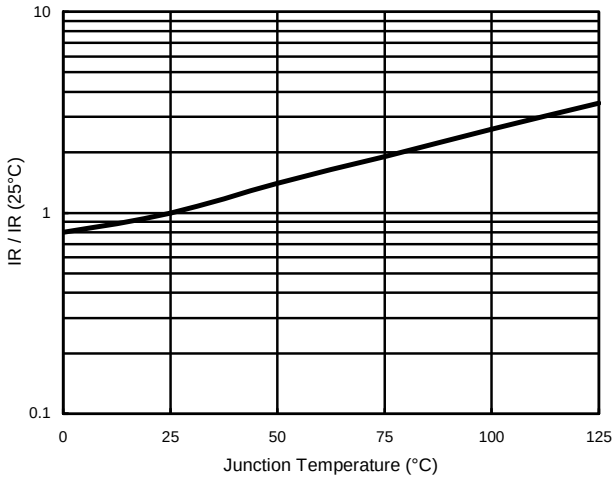


FIG.6- reverse leakage current versus Tj



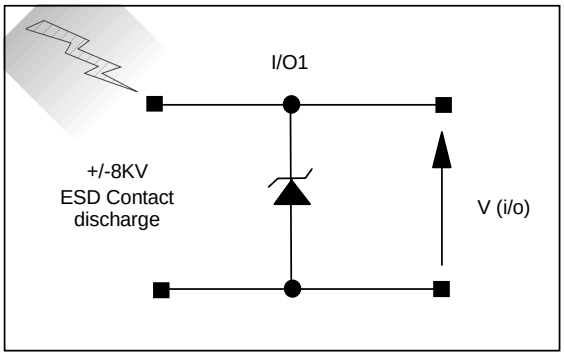


Figure 7. ESD Test Configuration

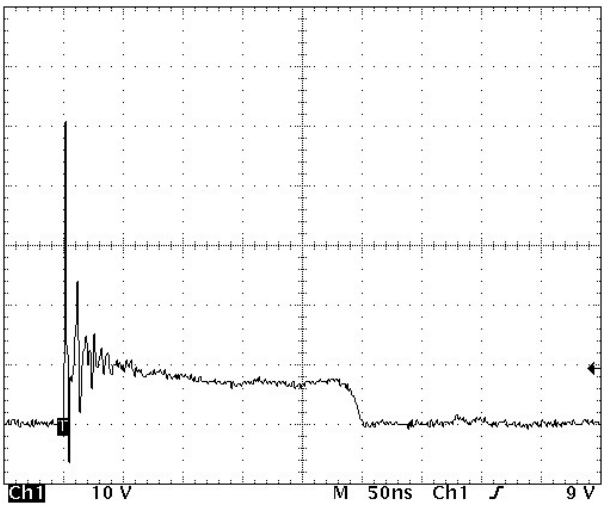


Figure 8. Clamped +8 kV ESD voltage waveform

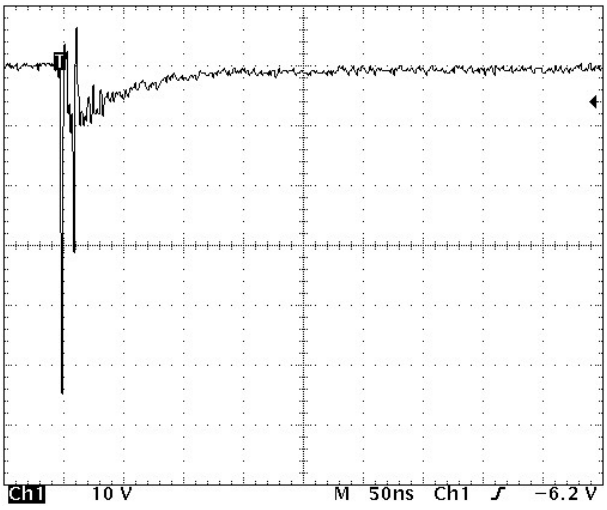
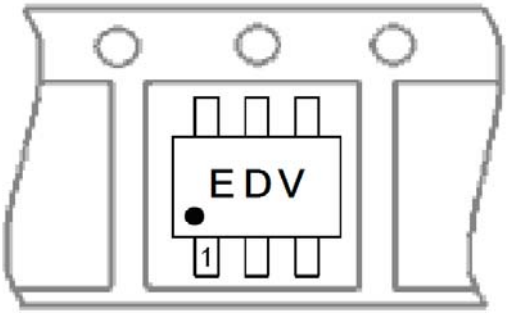


Figure 9. Clamped -8 kV ESD voltage waveform

MARKING AND PACKAGING INFORMATION
L05L5V0D6-4C

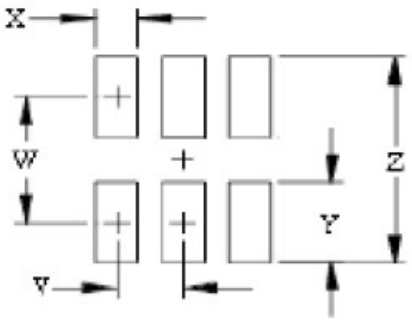
Marking and Orientation :



Packaging Information :

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L05L5V0D6-4C	3000	7	45K	90K/180K

SOT-363 Soldering Pad Layout :



Dim.	Millimeters
Z	2.70
X	0.40
W	1.85
Y	0.85
Z	0.65

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