LITE-ON SEMICONDUCTOR

L05L5V0C6-4C

ESD PROTECTION DEVICE

STAND-OFF VOLTAGE - **5.0** Volts
POWER DISSIPATION - **50** WATTS

GENERAL DESCRIPTION

The L05L5V0C6-4C is ultra low capacitance TVS arrays 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

- Protects up to four high-speed I/O lines & one power line
- Low capacitance: 0.7pF typical (I/O to Gnd)
- Low clamping voltage
- IEC 61000-4-2 (ESD), > ±30KV (air) ; > ±27KV (contact)

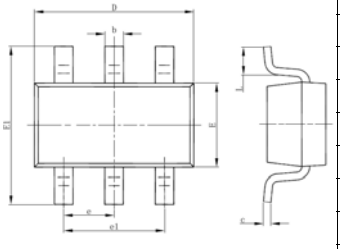
APPLICATION

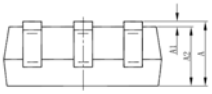
- USB2.0 Power and Data lines protection
- Digital Visual Interface (DVI)
- Notebook and PC Computers
- Video Graphics Cards
- SIM ports

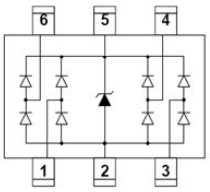
MECHANICAL DATA

- 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

SOT23-6L







4 lines Protection

SOT23-6L		
DIM.	MIN.	MAX.
A	0.90	1.45
A1	0.00	0.15
A2	0.90	1.30
b	0.30	0.50
c	0.08	0.22
D	2.45	3.00
E	1.50	1.75
E1	2.80 typ.	
e	0.95 typ.	
e1	1.90 typ.	
L	0.30	0.60
All Dimensions in millimeter		

PIN ASSIGNMENT	
1, 3, 4, 6	I/O Lines
5	V_{CC}
2	Ground

MAXIMUM RATINGS (Tj= 25℃ unless otherwise noticed)

Rating	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20us)	Ppk	50	W
Peak Pulse Current (tp = 8/20us)	Ipp	5.5	A
Operating Junction Temperature Range	TJ	-55 to + 125	℃
Storage Temperature Range	Tstg	-55 to + 150	℃
Soldering Temperature, t max = 10s	TL	260	℃

ELECTRICAL CHARACTERISTICS (Tj= 25℃ unless otherwise noticed)

Parameter	Symbol	Conditions	Mln	Typ	Max	Unit
Reverse standoff voltage	V_{RWM}	Any pin to ground	---	---	5.0	V
Breakdown voltage	VBR	IR = 1 mA	6.0	---	9.0	V
Reverse leakage current	IRM	V_{DRM} = 5V	---	---	1	uA
Clamping Voltage	V_C	I_{PP} = 5A, tp = 8/20μs, Any I/O pin to ground	---	8.5	10	V
Junction capacitance	C_J	V_R = 0, f = 1MHz, Between I/O pins	---	0.36	0.5	pF
		V_R = 0V, f = 1MHz, Any I/O pin to ground	---	0.7	1.0	

RATING AND CHARACTERISTIC CURVES
L05L5V0C6-4C

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

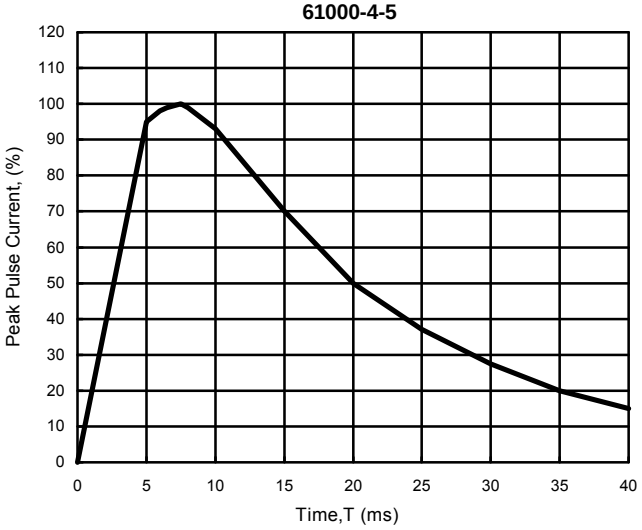


FIG.2- ESD pulse waveform according to IEC 61000-4-2

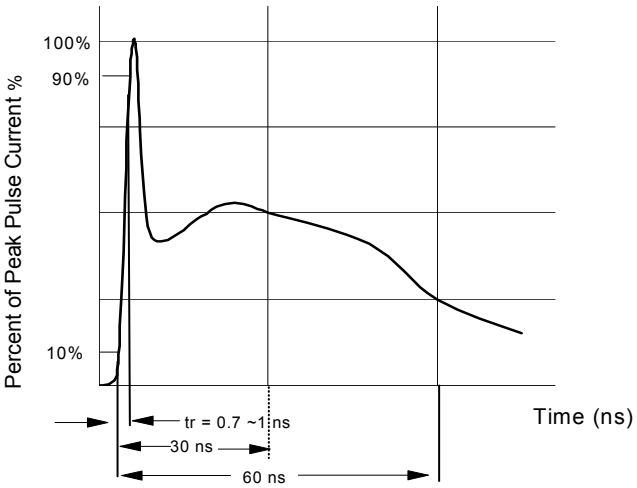


FIG.3- power dissipation versus pulse time

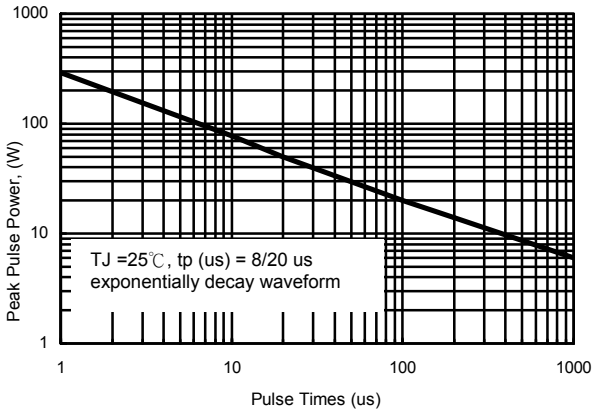


FIG.4- peak pulse power versus Tj

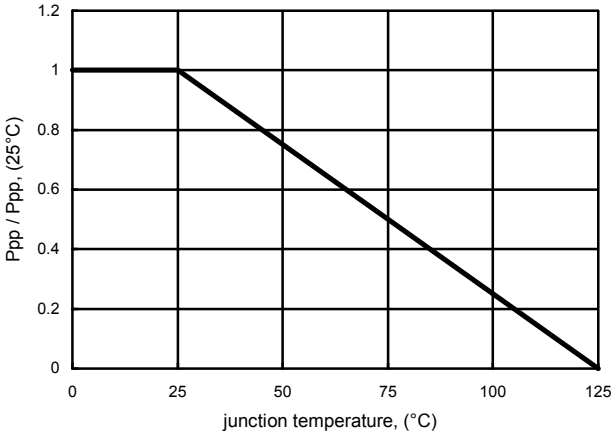


FIG.5- typical junction capacitance

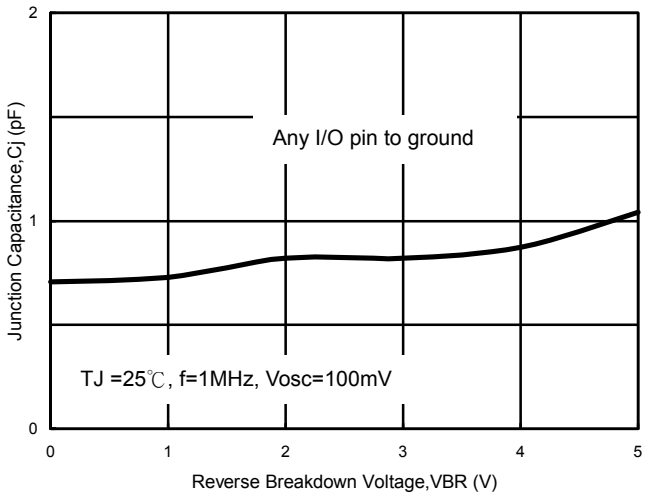
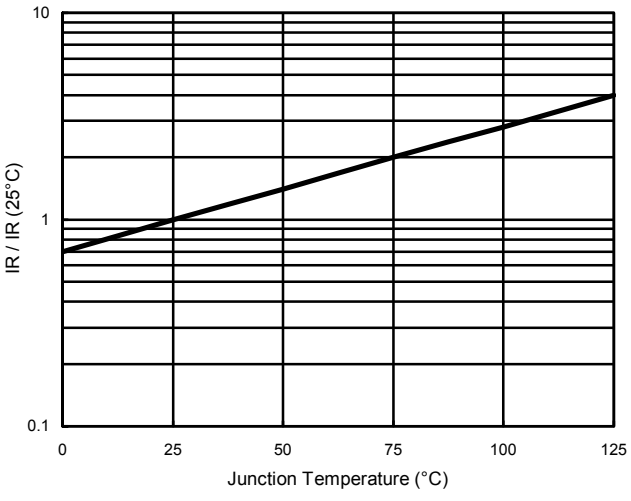


FIG.6- reverse leakage current versus Tj



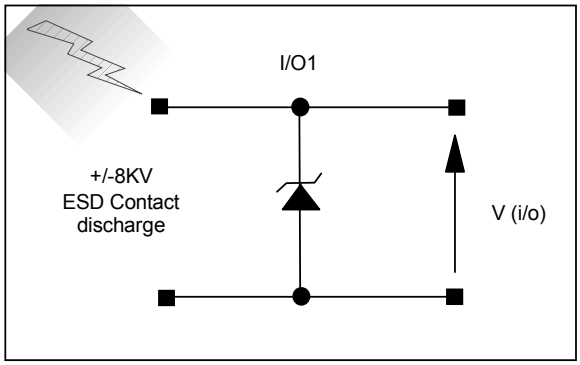


FIG.7- ESD Test Configuration

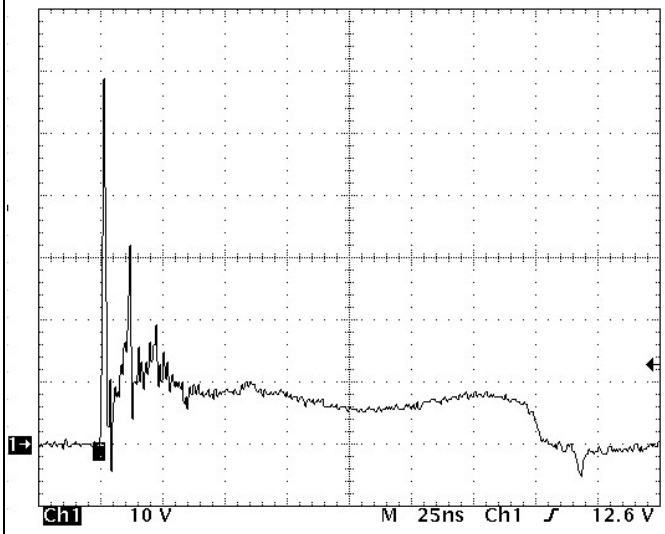


FIG.8- Clamped +8 kV ESD voltage waveform

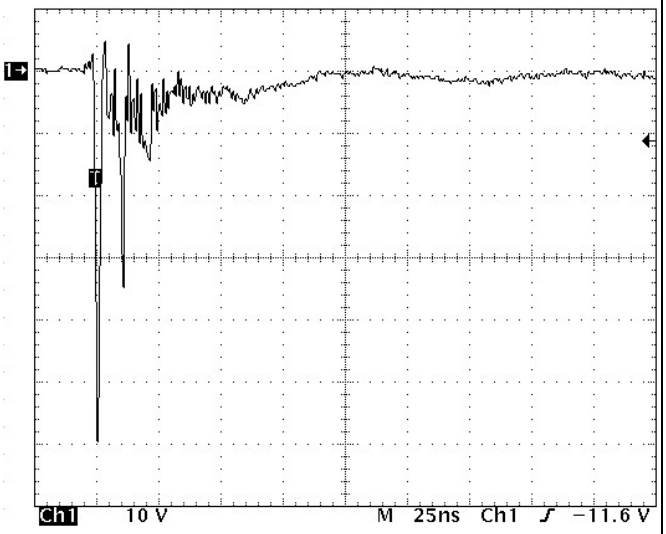
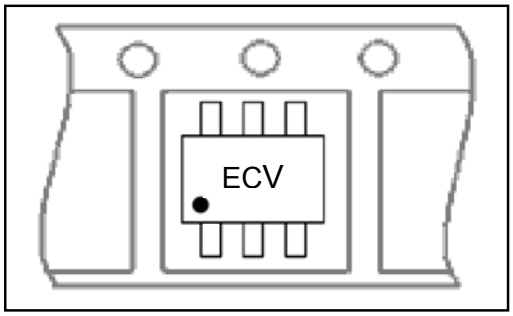


FIG.9- Clamped -8 kV ESD voltage waveform

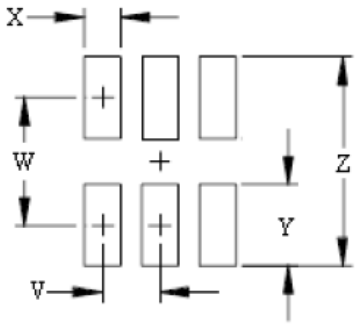
Marking & Orientation



Packaging Information

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L05L5V0C6-4C	3000	7	45000	90K/180K

SOT23-6L Soldering Pad Layout



Dim.	Millimeters	Inches
Z	3.60	0.141
X	0.80	0.031
W	2.60	0.102
Y	1.00	0.039
V	0.95	0.037

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