

**ESD PROTECTION DEVICE**

STAND-OFF VOLTAGE - **5.0** Volts  
POWER DISSIPATION - **130** WATTS

**GENERAL DESCRIPTION**

The L13L5V0C6-4C 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: 1.5pF typical (I/O to Gnd)
- Low clamping voltage
- IEC 61000-4-2 ( ESD ), > ±28KV ( air ) ; > ±21KV ( contact )

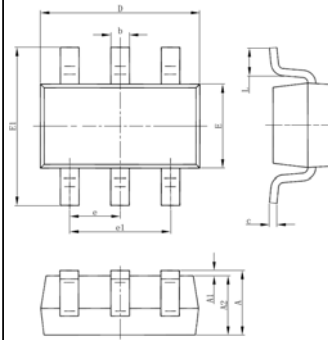
**APPLICATION**

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

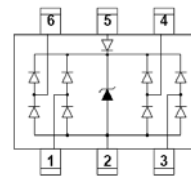
**MECHANICAL DATA**

- 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**



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		



4 lines Protection

PIN ASSIGNMENT	
1, 3, 4, 6	I/O Lines
5	V <sub>CC</sub>
2	Ground

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

Rating	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20us)	P <sub>pk</sub>	130	W
Peak Pulse Current (tp = 8/20us)	I <sub>pp</sub>	5.5	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>	Any pin to ground	---	---	5.0	V
Breakdown voltage	V <sub>BR</sub>	I <sub>R</sub> = 1 mA	6.0	---	9.0	V
Reverse leakage current	I <sub>RM</sub>	V <sub>DRM</sub> = 5V	---	---	1	uA
Clamping Voltage	V <sub>C</sub>	I <sub>pp</sub> = 1A, tp = 8/20μs, Any I/O pin to ground	---	---	10	V
		I <sub>pp</sub> = 5A, tp = 8/20μs, Any I/O pin to ground	---	---	26	
Junction capacitance	C <sub>J</sub>	V <sub>R</sub> = 2.5V, f = 1MHz, Any I/O pin to ground	---	0.9	1.7	pF

REV. 0, Jul-2017, KSIR99

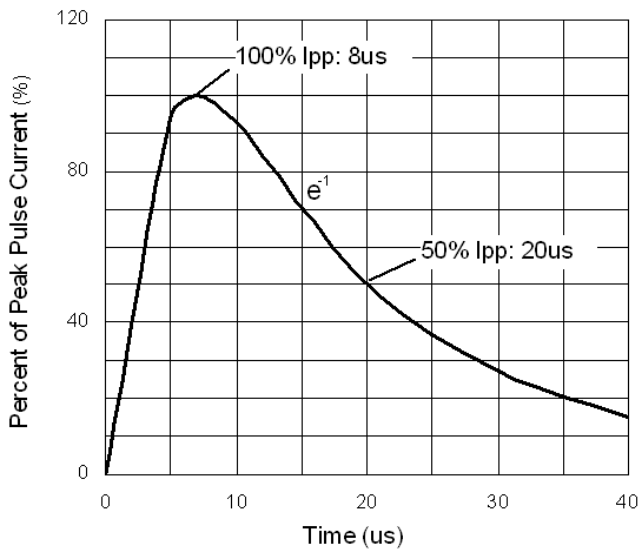


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

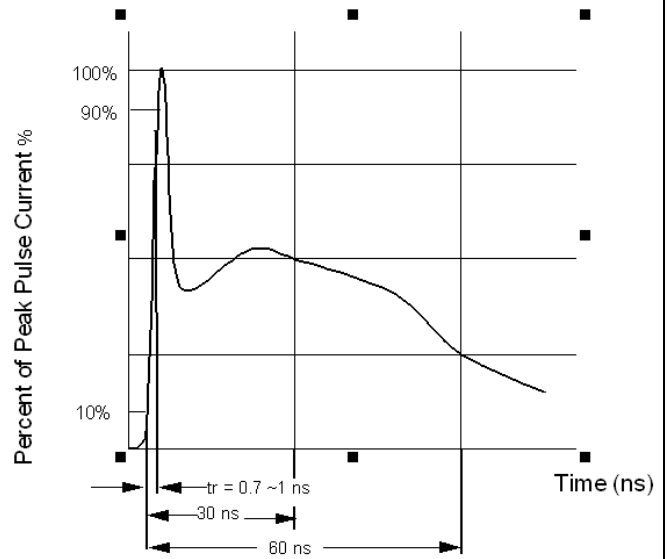


Figure 2. ESD pulse waveform according to IEC 61000-4-2

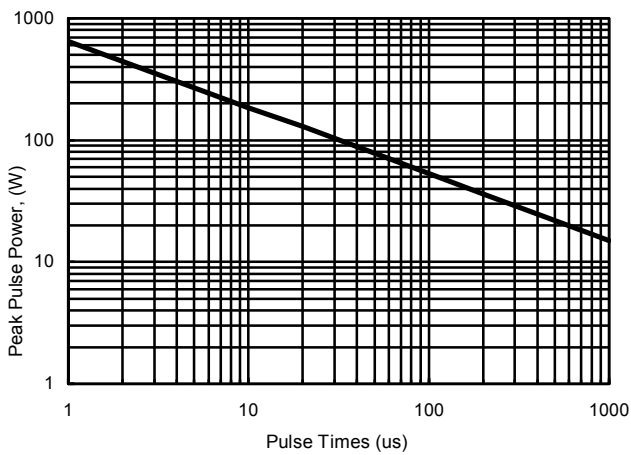


Figure 3. Power Dissipation versus Pulse Time

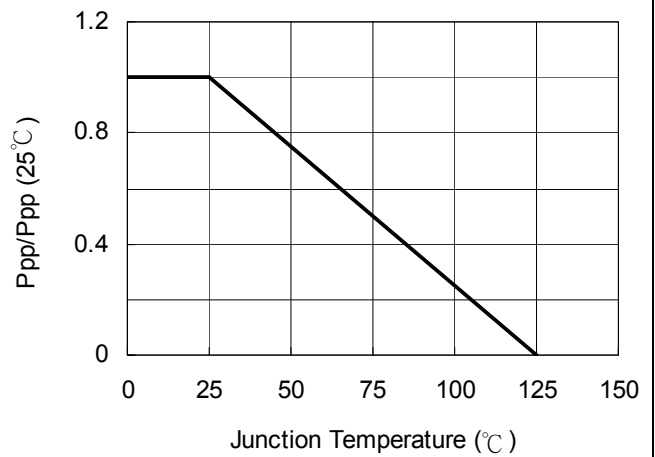


Figure 4. Peak pulse power versus TJ

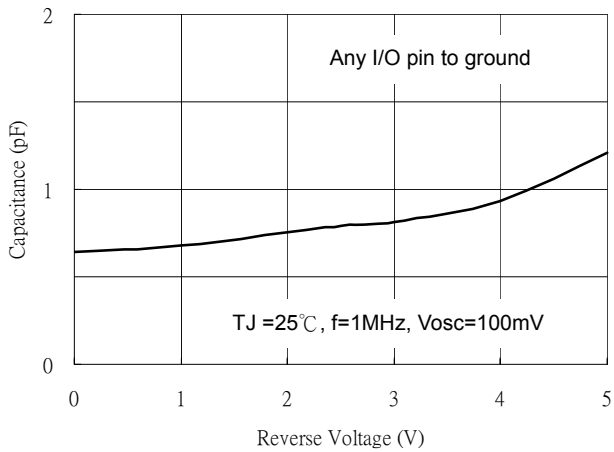


Figure 5. Typical Junction Capacitance

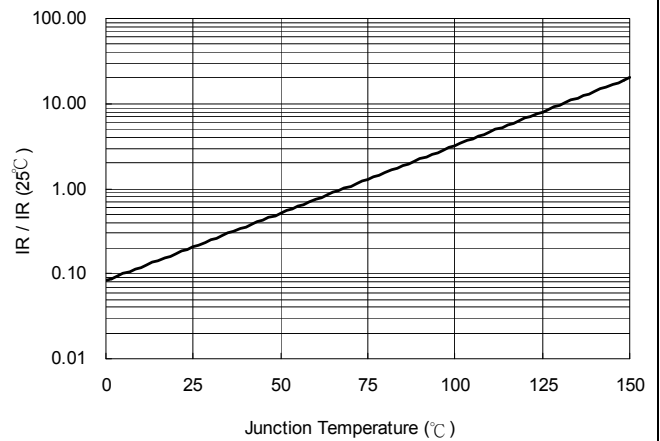


Figure 6. Reverse Leakage Current versus TJ

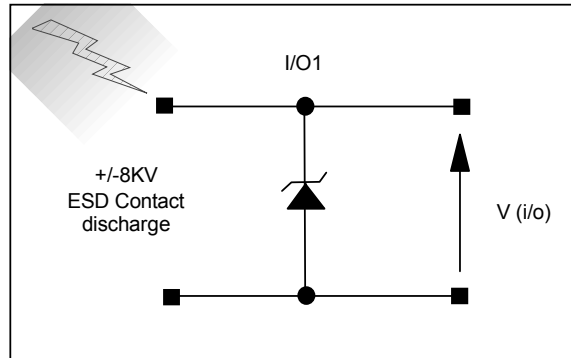


Figure 7. ESD Test Configuration

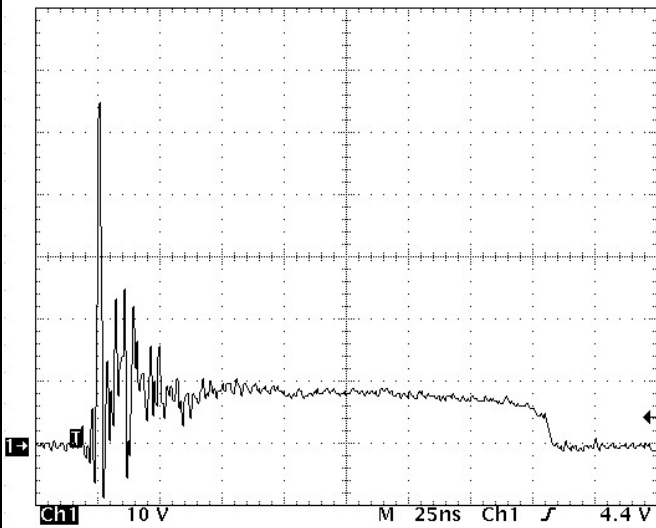


Figure 8. Clamped +8 kV ESD voltage waveform

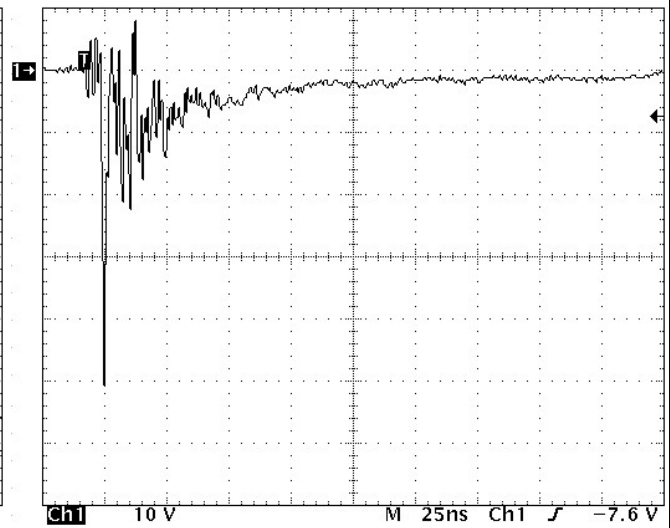
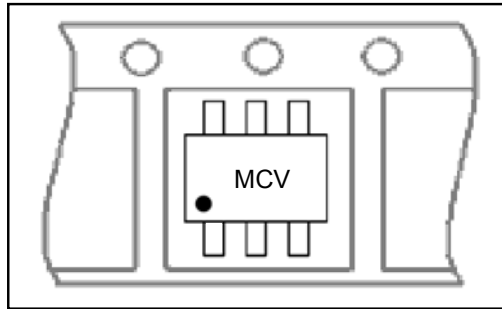


Figure 9. Clamped -8 kV ESD voltage waveform

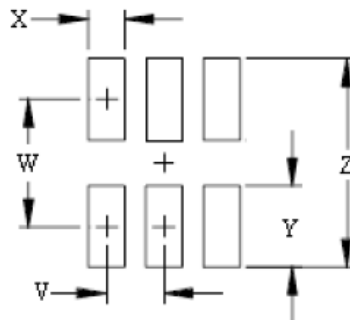
**Marking & Orientation**



**Packaging Information**

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L13L5V0C6-4C	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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