Transient Voltage Suppressors for ESD Protection

DESCRIPTION

The SLSRV05-4 provides a typical line to line capacitance of 0.3pF and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for USB 2.0 applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing devices.

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).

APPLICATIONS

- ✧High Definition Multi-Media Interface (HDMI)
- ✧Digital Visual Interface (DVI)
- ✧USB 1.1/2.0/3.0/OTG
- ✧IEEE 1394 Firewire Ports
- ✧Notebooks & Handhelds
- ✧Projection TV & Monitors
- ✧Set-top box
- ✧Flat Panel Displays
- ✧PCI Express

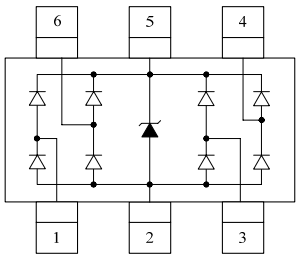
FEATURES

- ✧Protects four I/O lines and one Vcc line
- ✧Low capacitance
- ✧Working voltages : 5V
- ✧Low leakage current
- ✧Low capacitance (<1.0pF) for high-speed interfaces
- ✧No insertion loss to 3.0GHz
- ✧Response Time is < 1 ns
- ✧Meets MSL 1 Requirements
- ✧Solid-state silicon avalanche technology
- ✧ROHS compliant

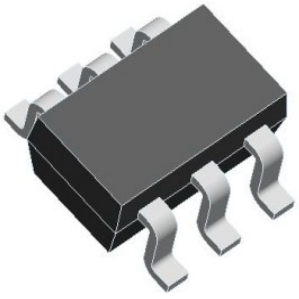
MACHANICAL DATA

- ✧SOT-23-6L package
- ✧Flammability Rating: UL 94V-0
- ✧Terminal: Matte tin plated.
- ✧Packaging: Tape and Reel
- ✧High temperature soldering guaranted:260℃/10s
- ✧Reel size: 7 inch

PIN CONFIGURATION



PACKAGE OUTLINE



ABSOLUTE MAXIMUM RATING

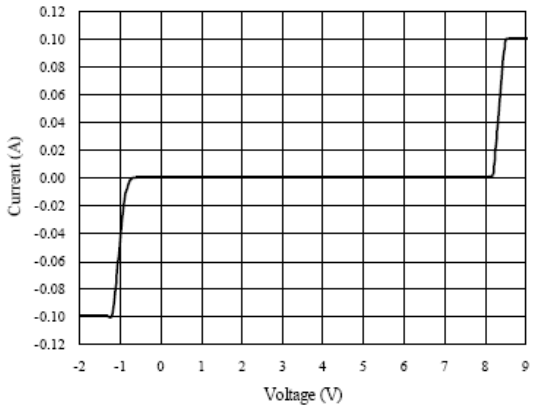
Symbol	Parameter	Value	Units
I_{PP}	Peak Pulse Current (8/20μs)	2	A
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±27 ±16	kV
T_{OPT}	Operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C)

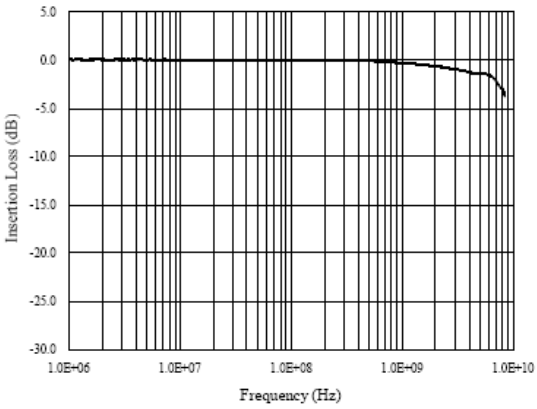
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA Any I/O pin to GND	6.0		10.0	V
I_R	Reverse Leakage Current	V_{RWM} = 5V Any I/O pin to GND			1	μA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20μs Any I/O pin to GND			12	V
C_{J1}	Junction Capacitance 1	V_R = 0V, f = 1MHz Between I/O pins		0.30	0.40	pF
C_{J2}	Junction Capacitance 2	V_R = 0V, f = 1MHz Any I/O pin to GND		0.60	0.80	pF

ELECTRICAL CHARACTERISTICS CURVE

Voltage Sweeping of I/O to GND

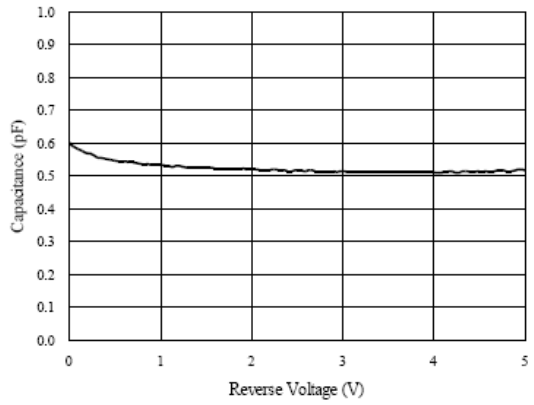


Insertion Loss S21 of I/O to GND

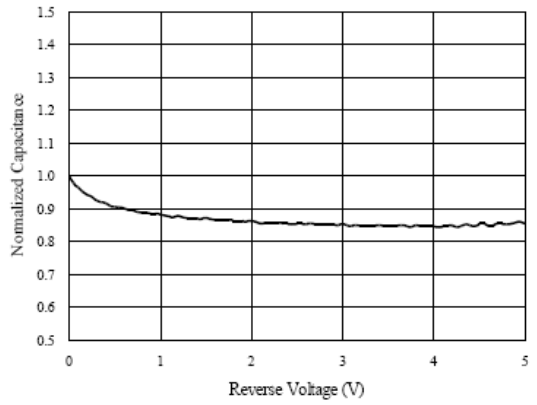


Capacitance *vs.* Voltage of I/O to GND (f = 1MHz)

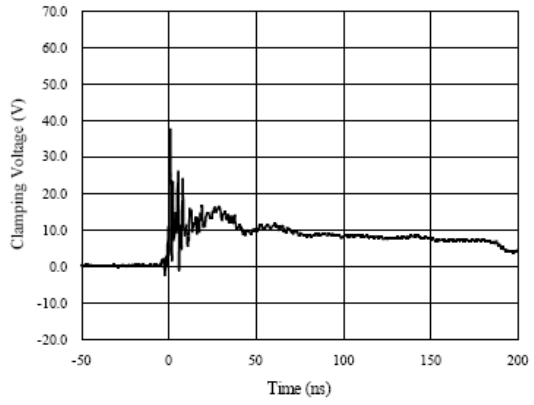
Capacitance *vs.* Reverse Voltage



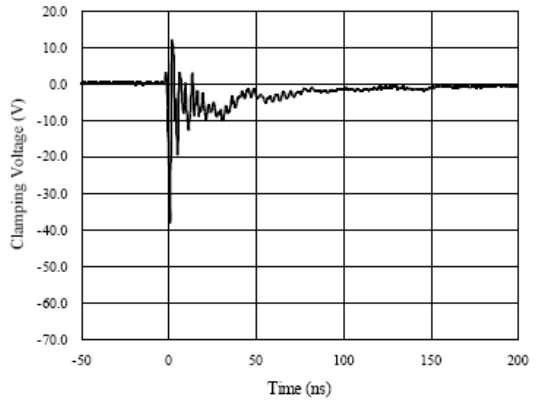
Normalized Capacitance *vs.* Reverse Voltage



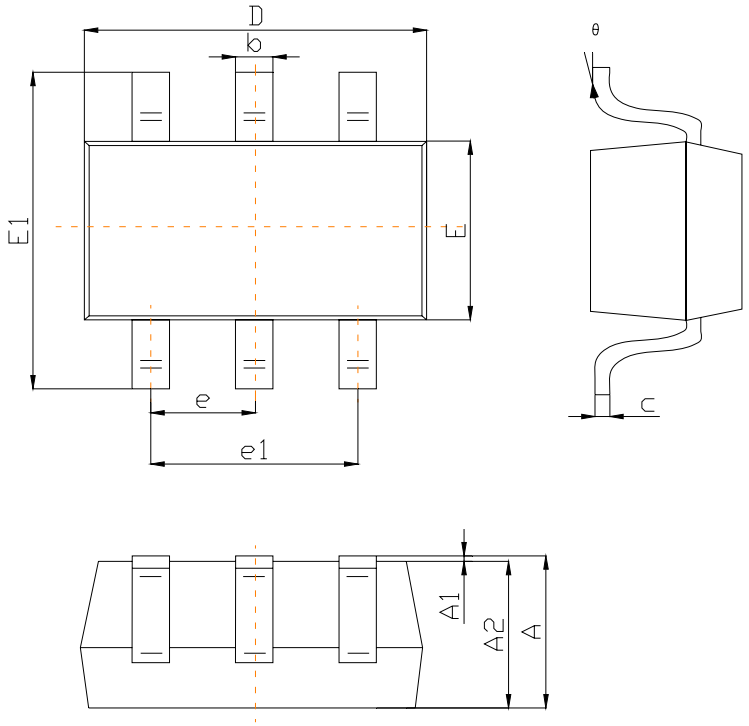
ESD Clamping of I/O to GND (+8kV Contact per IEC 61000-4-2)



ESD Clamping of I/O to GND (-8kV Contact per IEC 61000-4-2)



SOT-23-6L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100		0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0,950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
	0°	8°	0°	8°