

ESDSRVLC05-4

Description

The ESDSRVLC05-4 has ultra low capacitance rail-to-rail diodes with an additional zener diode fabricated in a proprietary silicon avalanche technology to protect each I/O pin providing a high level of protection for electronic equipment that may experience destructive electrostatic discharges (ESD). These robust diodes can safely absorb repetitive ESD strikes at the maximum level (level 4) specified in the IEC 61000-4-2 international standard without performance degradation. Their very low loading capacitance also makes them ideal for protecting high speed signal pins such as HDMI,DVI,USB2.0, and IEEE 1394.

Features

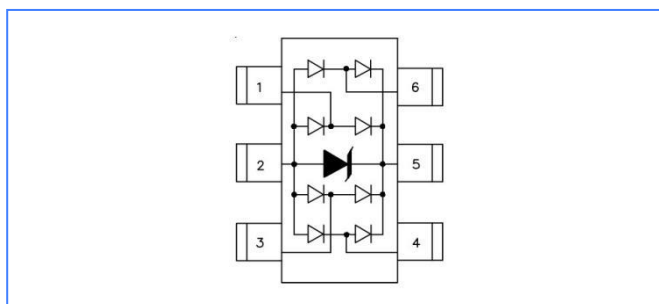
- Case :JEDEC SOT-23-6L package
- Low clamping voltage
- Small packaging options saves board space
- Low capacitance :0.9 pF typical
- Protection for 4 Lines
- Compatible with IEC 61000-4-2(ESD) :Air 18KV , Contact 13KV
- Compatible with IEC 61000-4-5(Surge):5.5A ,8/20 uS - level 2 (line-GND)&Level 3 (Line-Line)

Applications

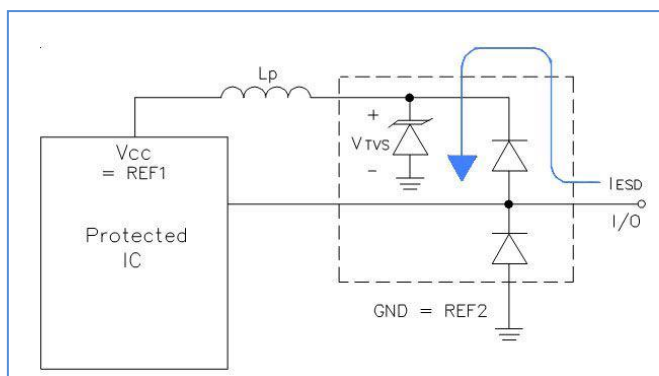
- USB Power and Data Line Protection
- 10/100/1000 Ethernet
- Video Graphics Cards
- SIM Ports
- ATM Interfaces
- Montors and Flat Panel Displays
- Digital Video Interface(DVI)
- IEEE 1394 Fire wire Ports



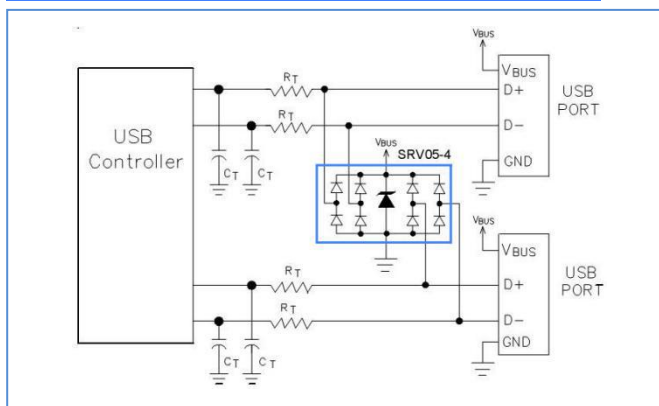
Functional Diagram



Rail-to-Rail Protection



Dual USB Port Protection



**Absolute Maximum Ratings**($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Current ($t_p = 8/20 \mu\text{s}$)	P_{PK}	150	W
Peak Current ($t_p = 8/20 \mu\text{s}$)	I_{PP}	5.5	A
IEC61000-4-2 (Contact)	V_{ESD}	± 13	KV
IEC61000-4-2 (Air)	V_{ESD}	± 18	KV
Lead Soldering Temperature	T_L	260 (10 sec)	$^{\circ}\text{C}$
Operating Temperature	T_J	-50 to 125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-50 to 150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}	Any I/O pin to ground			5	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1\text{mA}$ Any I/O pin to ground	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}$, $T = 25^{\circ}\text{C}$ Any I/O pin to ground			1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$ Any I/O pin to ground		8.5	12	V
Junction Capacitance	C_{J1}	$V_R = 0\text{V}$, $f = 1\text{MHz}$ Between I/O pins		0.35	0.45	pF
	C_{J2}	$V_R = 0\text{V}$, $f = 1\text{MHz}$ Any I/O pin to ground			0.9	pF

Characteristics Curves

Fig1. Non-Repetitive Peak Pulse Power vs. Pulse time

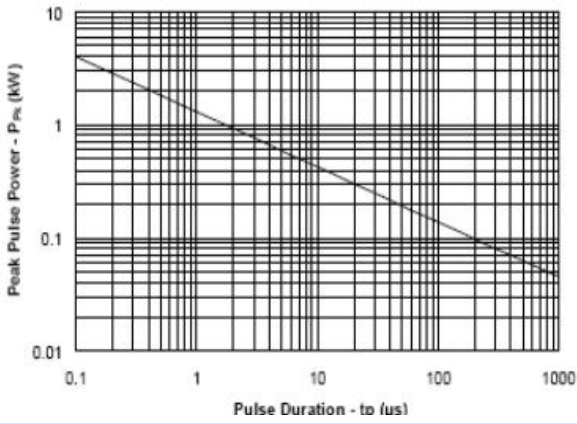


Fig2. Power Derating Curve

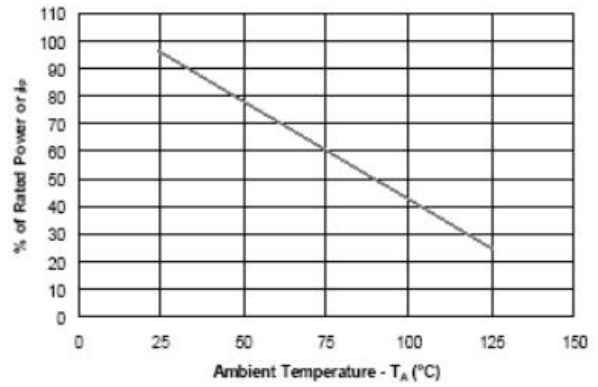


Fig3. Forward Voltage vs. Forward Current

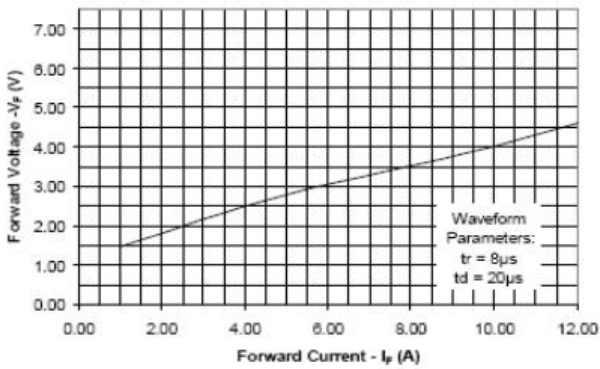


Fig4. Pulse Waveform

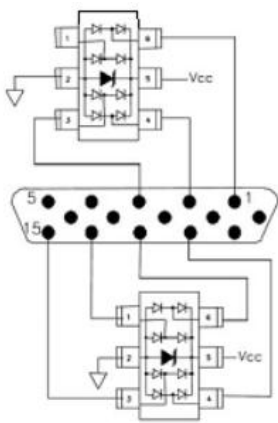
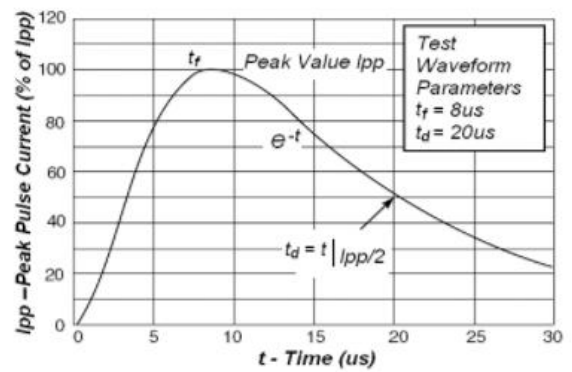


Fig5. Video Interface Protection

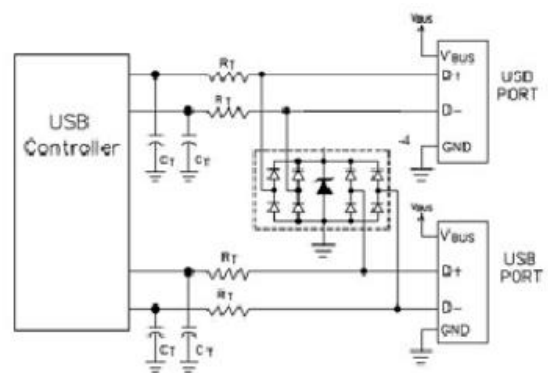


Fig6. Dual USB Port Protection

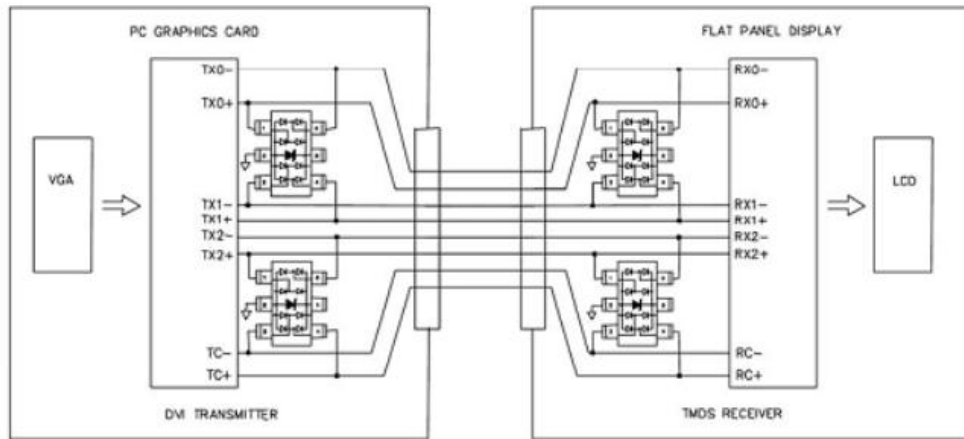
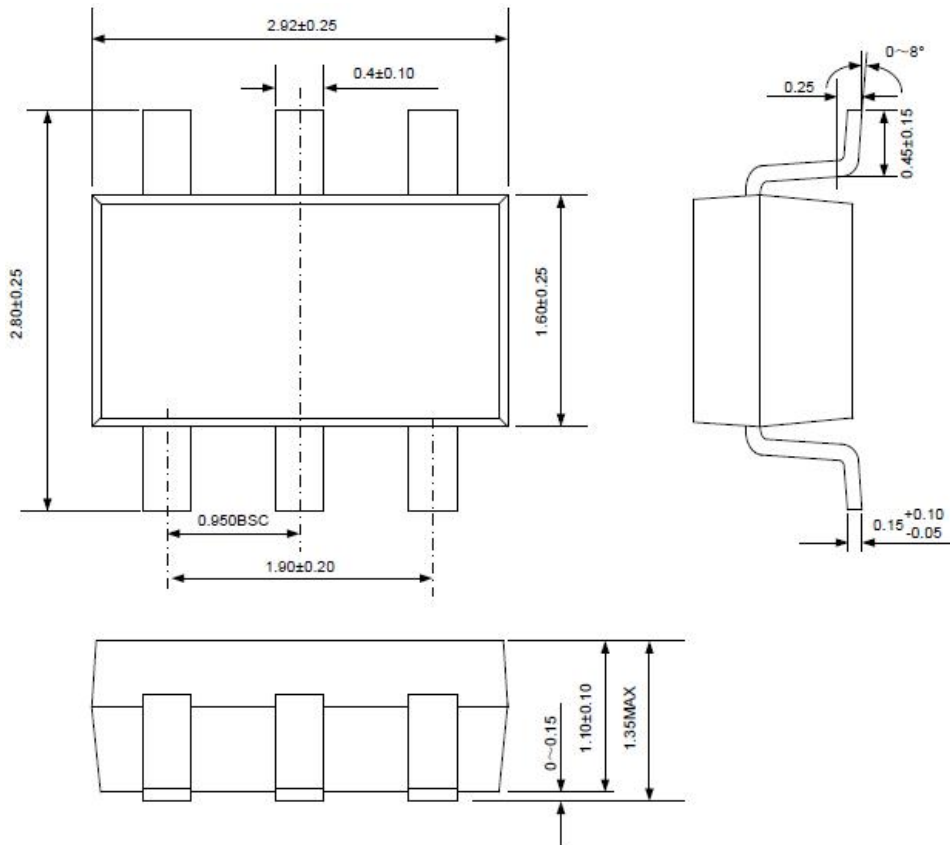


Fig7.Digital Video Interface (DVI) Protection

PACKAGE OUTLINE DIMENSIONS in millimeters:SOT23-6L



Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

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