

ESDSR05AP

Description

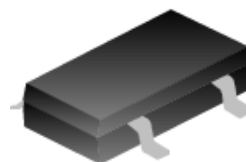
The ESDSR05AP consists of four, low capacitance steering diodes and a low voltage TVS diode that provide protection against ESD and lightning surge events. Each channel or I/O pin can safely absorb up to 4A ($t_p=8/20\mu s$) and repetitive ESD strikes above the maximum level (Level 4) specified in the IEC 61000-4-2 international standard without performance degradation. The low capacitance of the steering diode allows the designer to protect high speed data applications .

Features

- Protection for 2 Lines
- Low capacitance
- Low clamping voltage
- Operating voltage: 5V
- Package: SOT-23
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 15kV$
 - Contact discharge: $\pm 15kV$

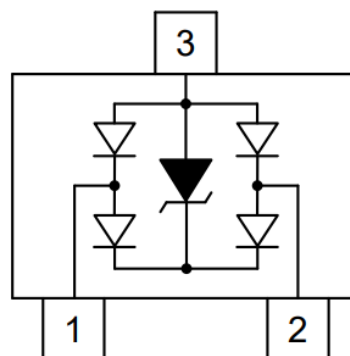
Applications

- USB 2.0
- 10/100/1000 Ethernet
- HDMI
- VGA
- DVI



SOT-23

Functional Diagram



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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PP}	60	Watts
Peak Current ($t_p=8/20 \mu s$)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 15	KV
ESD per IEC 61000-4-2 (Contact)		± 15	KV
Lead Soldering Temperature	TL	260 (10 sec)	$^{\circ}C$
Operating Temperature Range	T_J	-55 to +125	$^{\circ}C$
Storage Temperature Range	T_{STJ}	-55 to +150	$^{\circ}C$

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
V_{RWM}	Reverse Working Peak Voltage	-			5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1mA$	6.5		8.0	V
I_R	Reverse Current	$V_{RWM} = 5V$			1	μA
V_C	Clamping Voltage	$I_{PP}=1A, t_P = 8/20\mu s$			11	V
V_C	Clamping Voltage	$I_{PP}=4A, t_P = 8/20\mu s$			15	V
C_{J1}	PIN1 TO PIN2	$V_R = 0V, f = 1MHz$		0.3	0.35	pF
C_{J2}	PIN1 OR PIN2 TO PIN3	$V_R = 0V, f = 1MHz$		0.6	0.75	pF

Characteristics Curves

Figure 1- . Pulse Waveforms

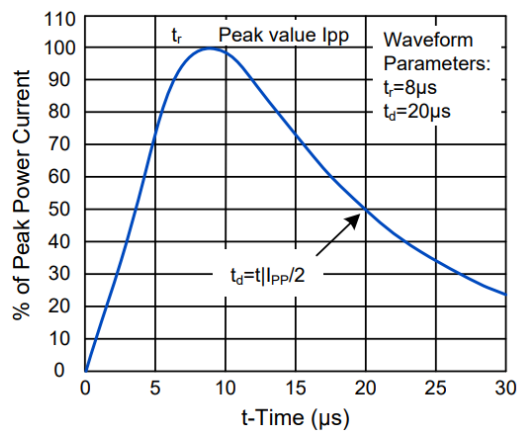


Figure 2-Pulse Derating Curve

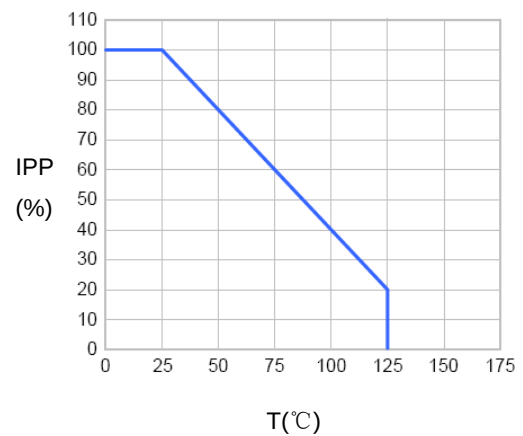


Figure3- Typical variation of C_{in} VS. V_{in}

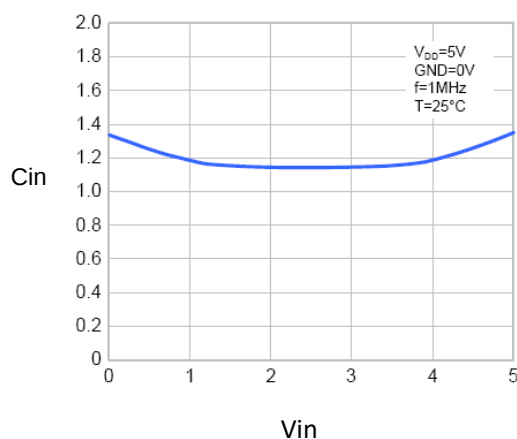
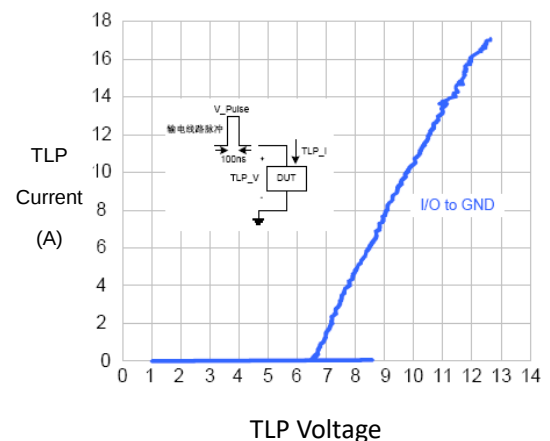
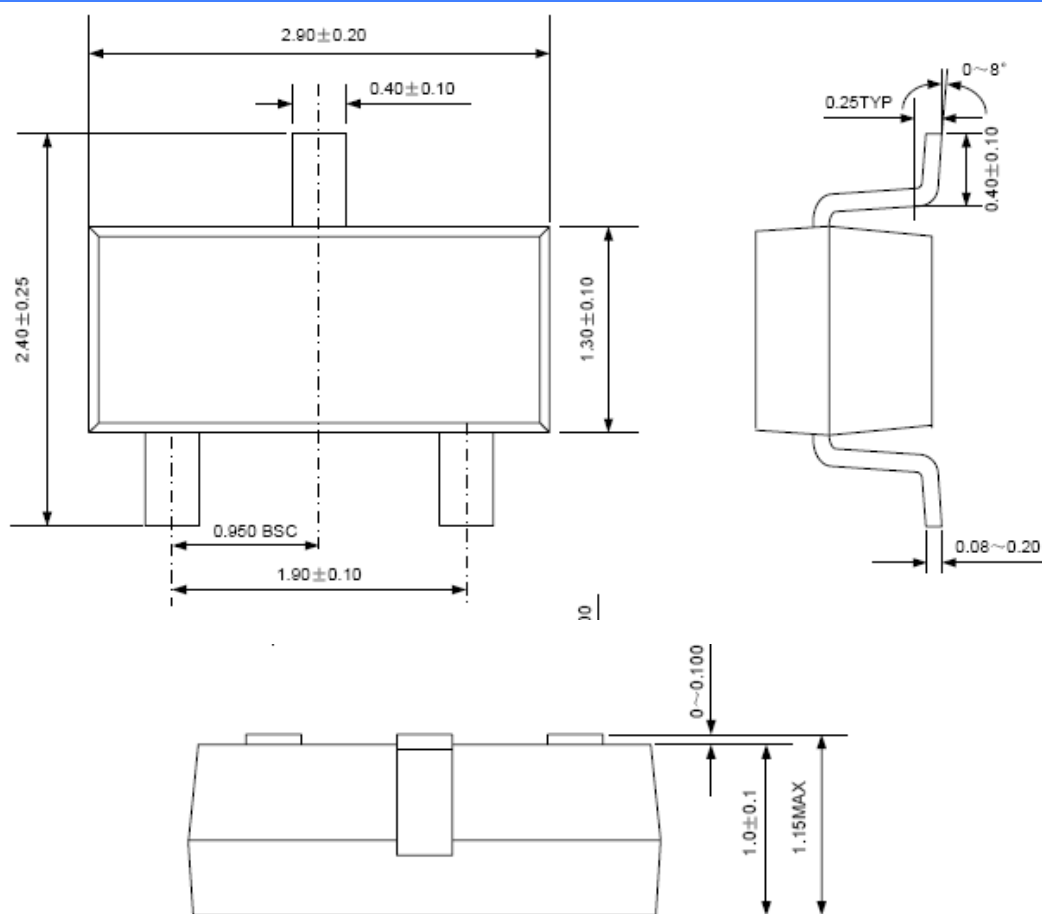


Figure4- Transmission Line pulsing(TLP)



PACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOT-23



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.