TL-SR05

SOT-143 2-Line ESD Protection Diode Array

General description

The SR05 are monolithic application specific devices dedicated to ESD protection of high speed interfaces, such as USB 2.0, Ethernet links and video lines.The very low line capacitance secures a high level of signal integrity without compromising in protecting sensitive chips against the most stringently characterized ESD strikes.

Features and benefits

- ESD Protect for 2 high-speed I/O channels
- Provide ESD protechtion for each channel to
  IEC 61000-4-2(ESD)±30kV(air),±30kV(contact)
  Low Working Voltage: 5.0V
- Low Capacitance: 0.8pF (I/O-GND)
- Low Clamping Voltage
- Response time is typically < 1 ns
- Array of surge rated diodes with internal equivalent TVS diodes
- Small package saves board space
- RoHS compliant

SOT-143

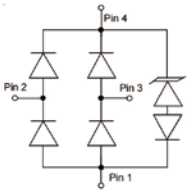
Application information

- Video Graphics Cards
- USB2.0 Power and Data lines protechtion
- 10/100/1000 Ethernet
- Notebooks and PC Computers
- IEEE 1394 Firewire Ports
- Portable electronics
- SIM ports

Ordering information

Device	Package	Reel Size	Qty(PCS)
SR05	SOT-143	7 Inch	3000

Ordering information

Marking	Naming rule	Graphic symbol
R05	SR05 产品名称 product name	

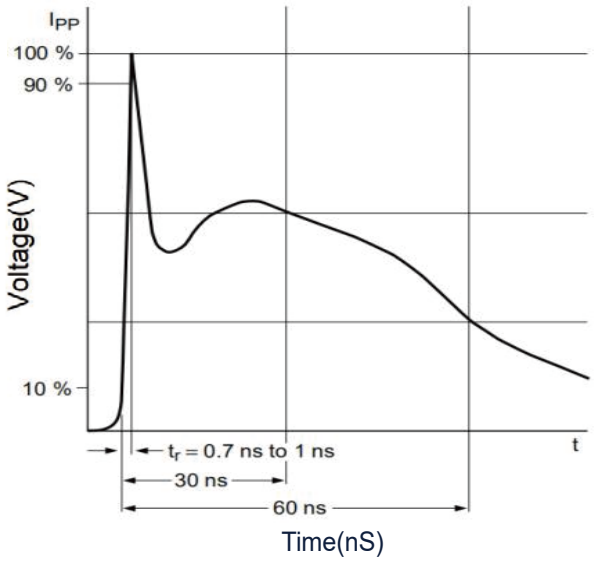
Maximum Ratings (T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20μs)	P_{PPM}	100	W
Peak Pulse Current(tp = 8/20μs)	I_{PPM}	6	A
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Temperature Range	T_{OP}	-40 to +125	°C
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	30	kV

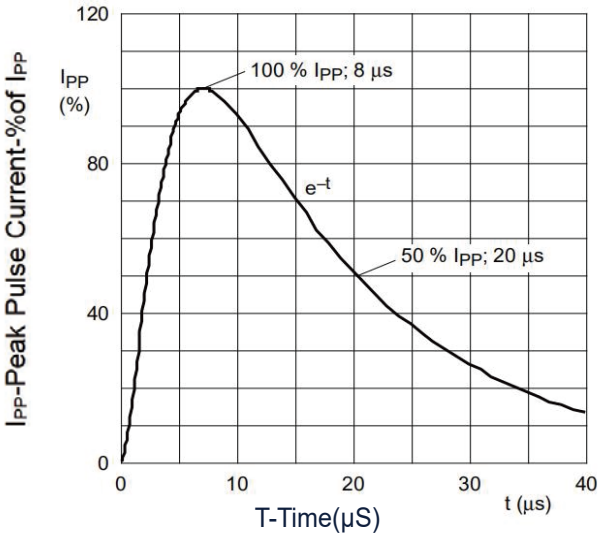
Electrical Characteristics (T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	6.4	--	7.8	V	I_T=1mA
Leakage Current ILeak	I_R	--	--	100	nA	V_{RWM}=5V
Clamping Voltage (I/O to I/O)	V_C	--	--	14.0	V	I_{PP}=6A,Tp=8/20μs
Clamping Voltage (VDD to GND)	V_C	--	--	14.0	V	I_{PP}=9A,Tp=8/20μs
Junction Capacitance	C_J	--	0.4	0.45	pF	V_R=0V, f=1MHz I/O to I/O
Junction Capacitance	C_J	--	0.8	0.9	pF	V_R=0V, f=1MHz I/O to GND

Typical Characteristics

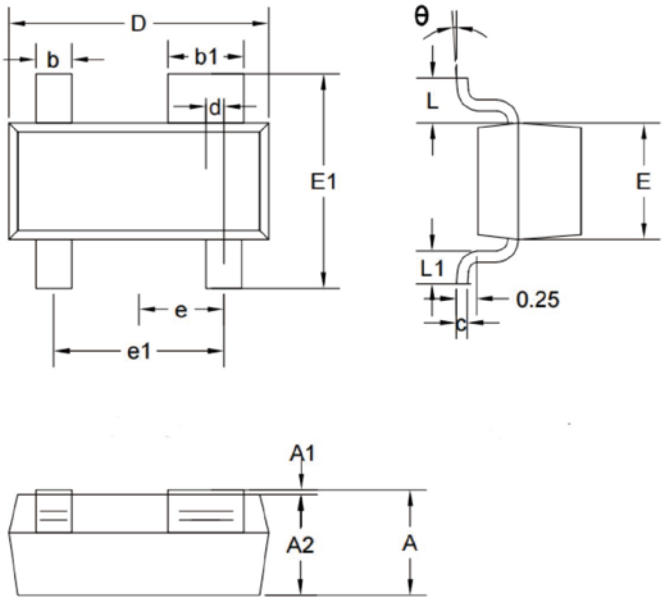


IEC61000−4−2 Pulse Waveform



IEC61000−4−5 8X20µs Pulse Waveform

SOT-143 Package Outline Dimensions



Symbol	Dimensions In Millimet		
	Min	Typ	Max
A	0.950	1.125	1.300
A1	0.000	0.050	0.100
A2	0.900	1.050	1.200
b	0.300	0.400	0.500
b1	0.750	0.850	0.950
c	0.080	0.115	0.150
D	2.800	2.900	3.000
d	0.2TYP		
E	1.200	1.300	1.400
E1	2.250	2.400	2.550
e	0.950TYP		
e1	1.800	1.900	2.000
L	0.550TYP		
L1	0.300	0.400	0.500
e	0°	4°	8°