



Steering Structure ESD Protection Array

Features

- Meet IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- Meet IEC61000-4-4 (EFT) rating. 40A (5/50ns)
- Meet IEC61000-4-5 (Lightning) rating. 12A (8/20 μs)
- Protects two I/O line and power line
- Working Voltage : 5V
- Pb free version, RoHS compliant, and Halogen free

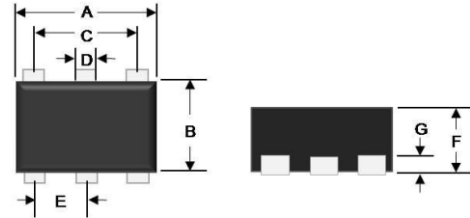
Mechanical Data

- Case : SOT-563 small outline plastic package
- Terminal : Matte tin plated, lead free, solderable per M-STD-202, Method 202 Guaranteed
- High temperature soldering guaranteed : 260 $^{\circ}\text{C}/10\text{s}$
- Molding Compound Flammability Rating : UL-94V-O
- Weight : 3 mg (approximately)

Applications

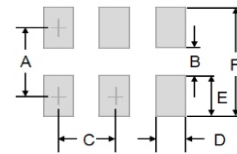
- Video Graphics Cards, USB Power and Data Line Protection
- 10/100/1000 Ethernet Ports
- Monitors and Flat Panel Displays
- High-Definition Multimedia Interface (HDMI)

Outline Drawing SOT-563



Dimension	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.50	1.70	0.059	0.066
B	1.10	1.30	0.043	0.051
C	1.00 Typ		0.04 Typ	
D	0.17	0.27	0.007	0.010
E	0.50 Typ		0.02 Typ	
F	0.50	0.60	0.021	0.023
G	0.08	0.18	0.003	0.007

Suggested Pad Layout



Dim	A	B	C	D	E	F
Inch	0.053	0.035	0.020	0.012	0.017	0.065
mm	1.350	0.900	0.500	0.300	0.450	1.800

Ordering Information

Package	Part No.	Packing	Marking	Configuration
SOT563	RESDH65V0P	4K/7" Reel	2A	

Maximum Ratings and Electrical Characteristics

(Rating at 25 $^{\circ}\text{C}$ ambient temperature unless otherwise specified)

Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20 μs waveform)	P _{PP}	50	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 20	KV
ESD per IEC 61000-4-2 (Contact)		± 15	
Junction and Storage Temperature Range	T _J , T _{STG}	-55 ~ 150	$^{\circ}\text{C}$



Steering Structure ESD Protection Array

Electrical Characteristics

Parameter		Symbol	Min	Max	Unit
Reverse Stand-Off Voltage		V_{RWM}	-	5	V
Reverse Breakdown Voltage	$I_R = 1mA$	$V_{(BR)}$	6	-	V
Reverse Leakage Current	$V_R = 5V$	I_R	-	1	μA
Clamping Voltage	$I_{PP} = 1A$	V_C	-	14	V
	$I_{PP} = 3A$		-	16	
Junction Capacitance	$V_R=0V$ $F=1MHz$	C_J	0.9 (Typ.)		pF

Rating and Characteristic Curves

Fig 1 Non-Repetitive Peak Pulse Power vs. Pulse Time

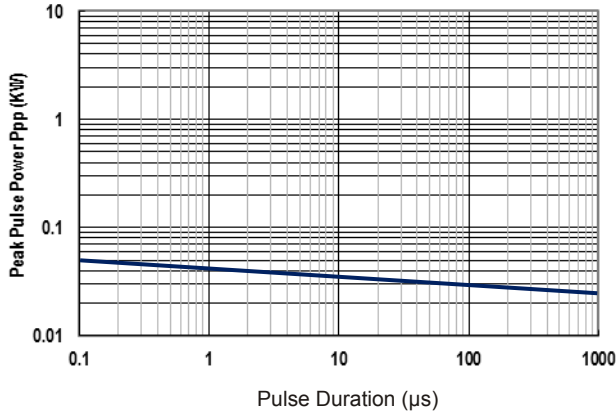


Fig 2 Clamping Voltage vs. Peak Pulse Current

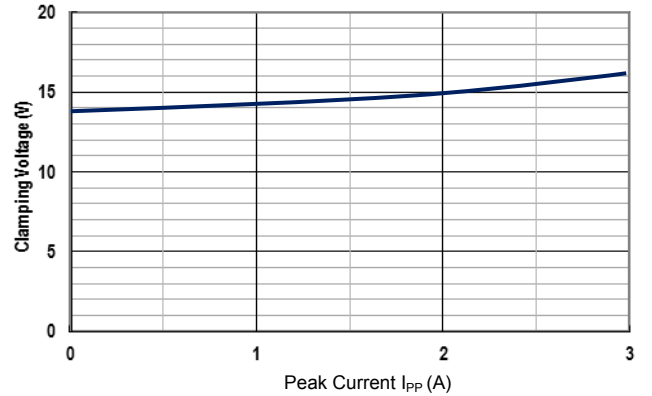


Fig 3 Admissible Power Dissipation Curve

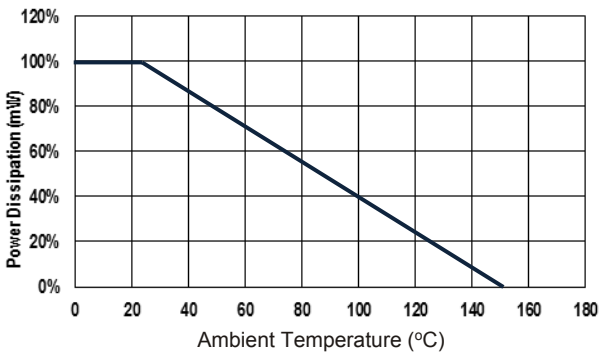


Fig 4 Typical Junction Capacitance

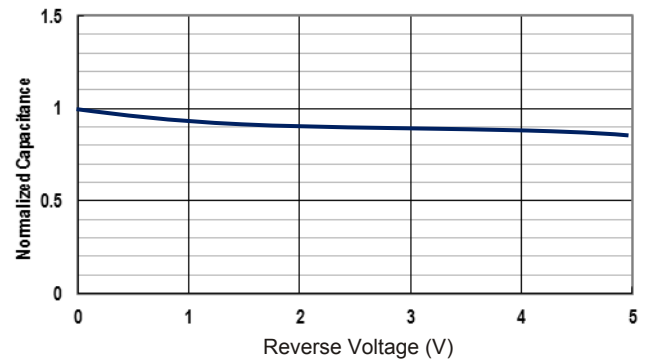
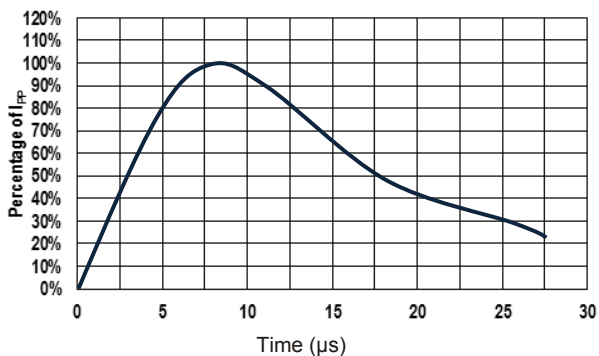


Fig 5 Pulse Waveform





Steering Structure ESD Protection Array

Applications Information

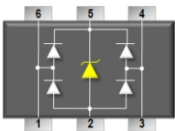
Designed to protect data lines by clamping them to a fixed reference

Data lines are connected at pins 1 & 6 and pins 3 & 4

Pins 5 and 2 can be connected to ground or Vcc based on application and location of those connections

The connection to ground should be made directly to a ground plane.

The path length should be kept as short as possible to minimize parasitic inductance.



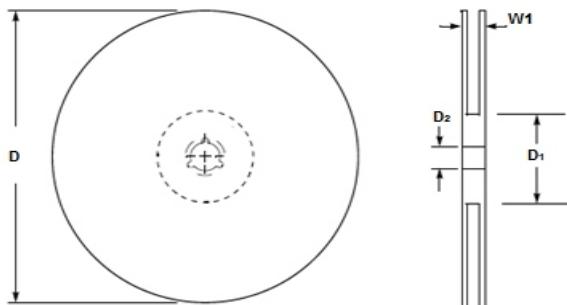
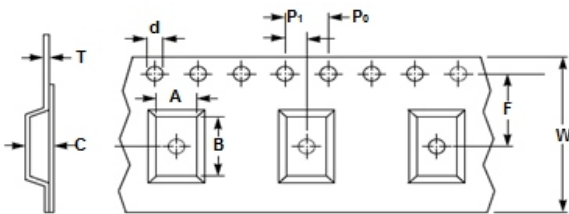
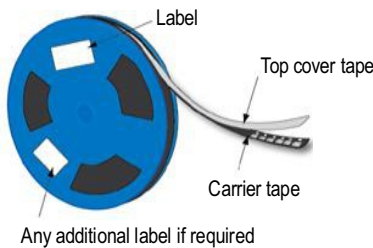
Circuit Board Layout Recommendations

Designed for ease of PCB layout by allowing the traces run straight through the device

The RESDH65V0P may also be used to protect both upstream and downstream USB ports on monitors, computers, peripherals or portable systems.

Each device will protect up to one USB port

Tape & Reel specification



Item	Symbol	Dimension (mm)
Carrier width	A	1.75 ± 0.10
Carrier length	B	1.75 ± 0.10
Carrier depth	C	0.67 ± 0.10
Sprocket hole	d	1.5 ± 0.1
Reel outside diameter	D	178 ± 1
Reel inner diameter	D1	54.4 ± 0.40
Feed hole width	D2	13.0 ± 0.20
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.05
Punch hole pitch	P	4.00 ± 0.10
Sprocket hole pitch	P0	4.00 ± 0.10
Embossment center	P1	2.00 ± 0.05
Overall tape thickness	T	0.23 ± 0.013
Tape width	W	8.10 ± 0.20
Reel width	W1	12.3 ± 0.20