

Features

- Low operating voltage: 5V
- Ultra low capacitance: 0.6pF (Typ)
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 20\text{kV}$
Contact discharge: $\pm 18\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- -IEC61000-4-5(Lightning):2A(8/20 μs)
- These are Pb-Free Devices
- Response Time is Typically < 1 ns

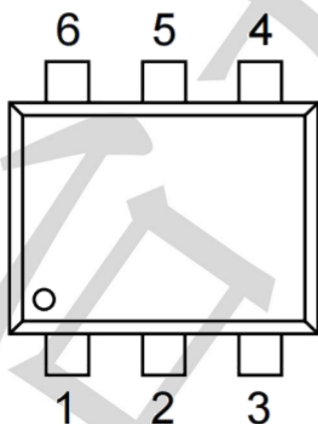
Mechanical Characteristics

- Package: SOT563
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- - IEC 61000-4-2 (ESD) immunity test

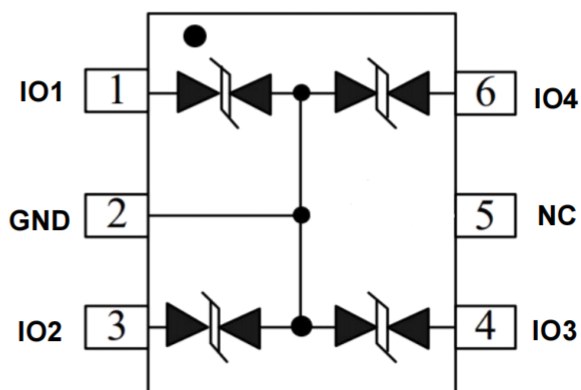
Applications

- Computers and peripherals
- Portable electronics
- Audio and video equipment
- Cellular handsets and accessories
- PIC Express and Serial SATA Ports
- High-speed data lines
- GPS
- Communication systems

Dimensions and Pin Configuration



SOT563



Circuit and Pin Schematic

TPD4E1B06DRLR-TP

4-channel ultra-low leakage ESD protection device

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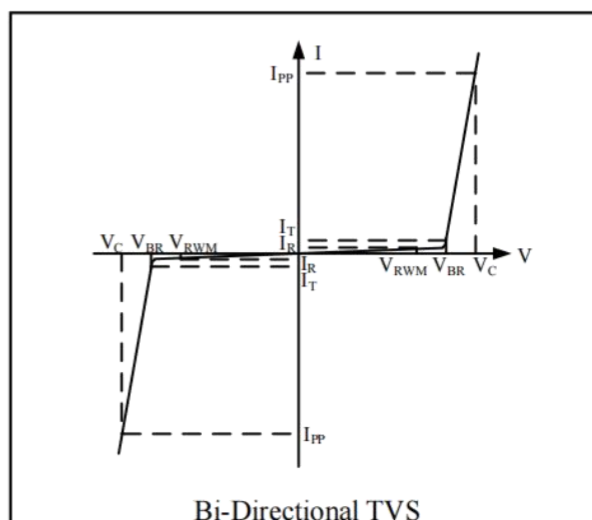
Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	30	W
Peak Pulse Current (8/20μs)	Ipp	2	A
ESD per IEC 61000-4-2 (Air)	VESD	±20	KV
ESD per IEC 61000-4-2 (Contact)		±18	
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	5	V	Any I/O pin to ground
Breakdown Voltage	VBR	6.5	--	9	V	IT= 1mA,Any I/O pin to ground
Reverse Leakage Current	IR	--	--	0.08	uA	VRWM=5V,Any I/O pin to ground
Clamping Voltage	VC	--	--	9	V	Ipp=1A(8x 20us pulse)
Clamping Voltage	VC	--	--	15	V	Ipp=2A(8x 20us pulse)
Junction Capacitance	Cvo-GND	--	0.6	0.9	pF	VR=0V,f=1MHz, Any I/O to GND
	Ci/o- I/o	--	0.3	0.45	pF	VR=0V,f=1MHz, between I/O pins

Symbol	Parameter
VRWM	Nominal Reverse Working Voltage
IR	Reverse Leakage Current @ VRWM
VBR	Reverse Breakdown Voltage @ IT
IT	Test Current for Reverse Breakdown
VC	Clamping Voltage @ Ipp
Ipp	Maximum Peak Pulse Current
CESD	Parasitic Capacitance
VR	Reverse Voltage
f	Small Signal Frequency



Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

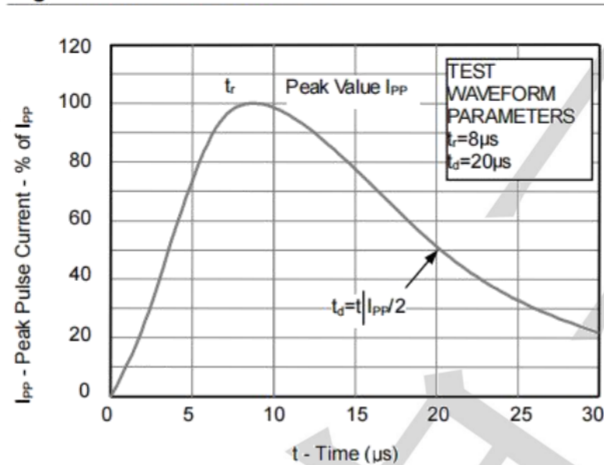


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

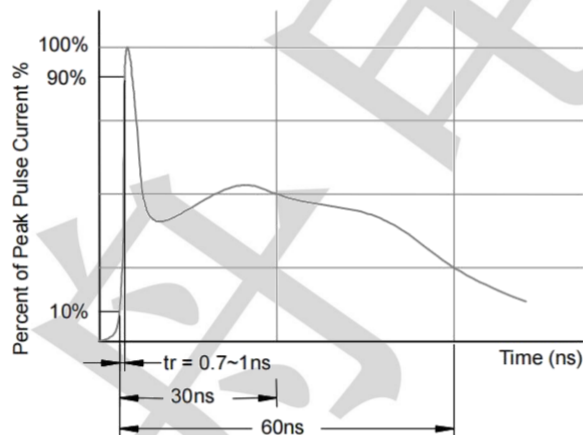
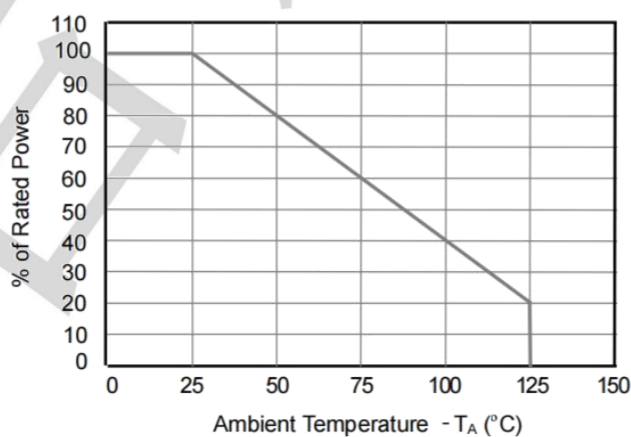
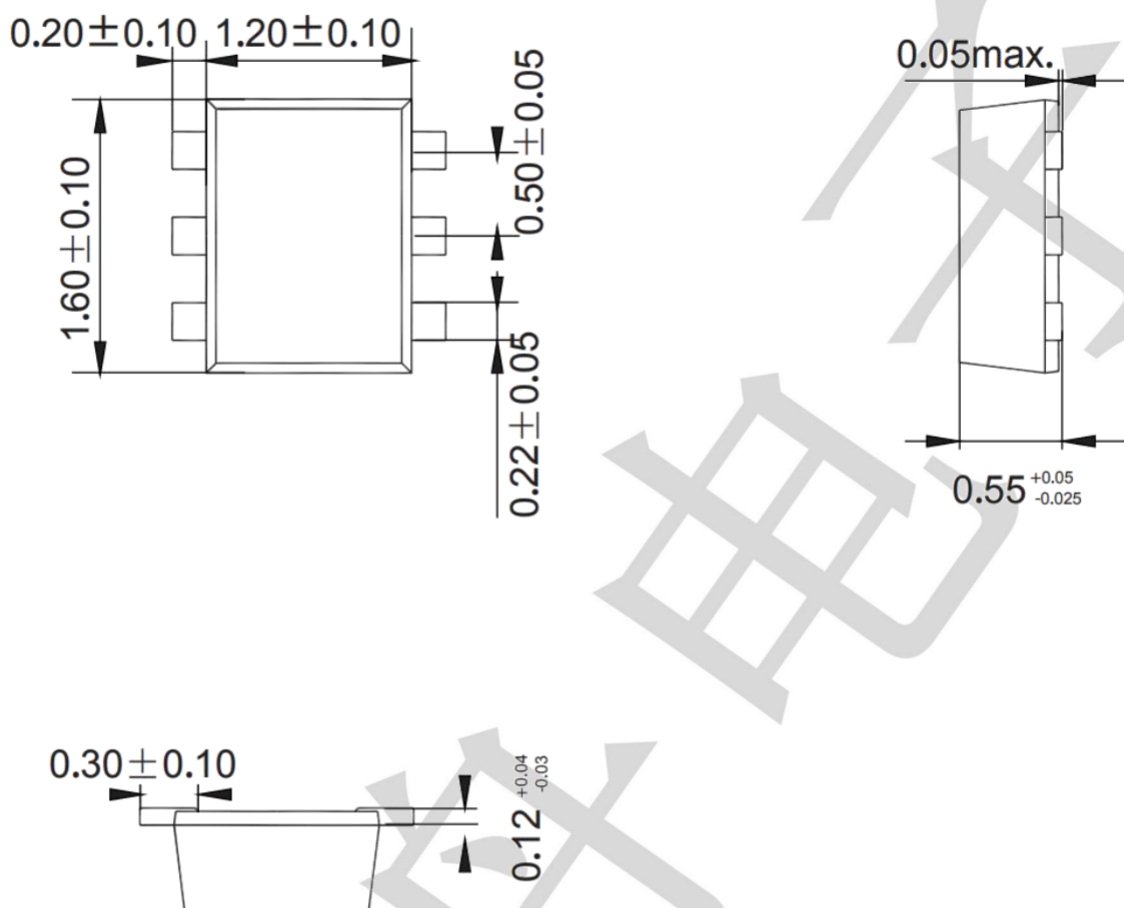


Fig3. Power Derating Curve



Package Outline Dimensions (unit: mm)

SOT563



Mounting Pad Layout (unit: mm)

