

Features

- Low operating voltage: 5V
- Ultra low capacitance: 0.5pF typical (I/O to GND)
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 20\text{kV}$
Contact discharge: $\pm 15\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- -IEC61000-4-5(Lightning):3A(8/20 μs)
- These are Pb-Free Devices
- Response Time is Typically < 1 ns

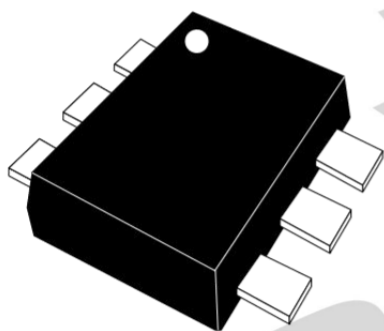
Mechanical Characteristics

- Package: SOT-563
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- - IEC 61000-4-2 (ESD) immunity test

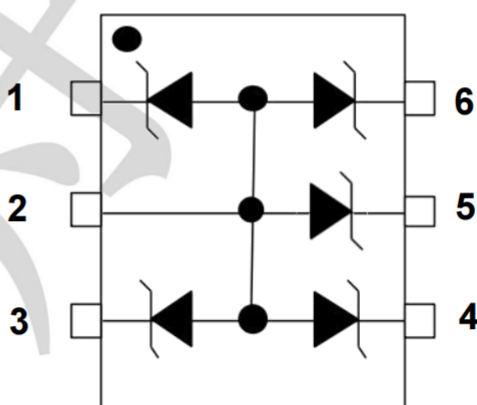
Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Set-top boxes
- Notebooks and Handhelds

Dimensions SOT-563



Dimensions and Pin Configuration



Circuit and Pin Schematic

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

| Parameter | Symbol | Value | Unit |
|--|--------|-------------|------|
| Peak Pulse Power (8/20μs) | Ppp | 36 | W |
| Peak Pulse Current (8/20μs) | Ipp | 3.0 | A |
| ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | VESD | ±20 ±15 | KV |
| 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 | -- | V | IT= 1mA,Any I/O pin to ground |
| Reverse Leakage Current | IR | -- | 0.1 | -- | uA | VRWM=5V,Any I/O pin to ground |
| Clamping Voltage | VC | -- | -- | 10 | V | Ipp=1A(8x 20us pulse), Any I/O pin to ground |
| Clamping Voltage | VC | -- | -- | 12 | V | Ipp=3A(8x 20us pulse) ,Any I/O pin to ground |
| Forward Voltage | VF | 0.7 | 0.9 | 1.2 | V | IF = 10 mA |
| Junction Capacitance | Cvo-GND | -- | 0.5 | -- | pF | VR=0V,f=1MHz, Any I/O to GND |
| | Ci/o- I/O | -- | 0.3 | 0.6 | pF | VR=0V,f=1MHz, between I/O pins |

Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

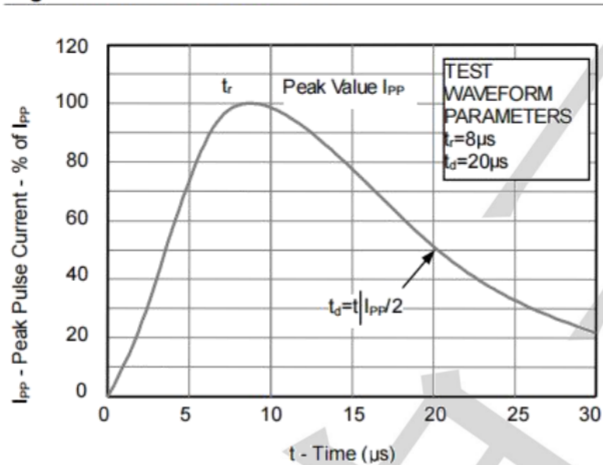


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

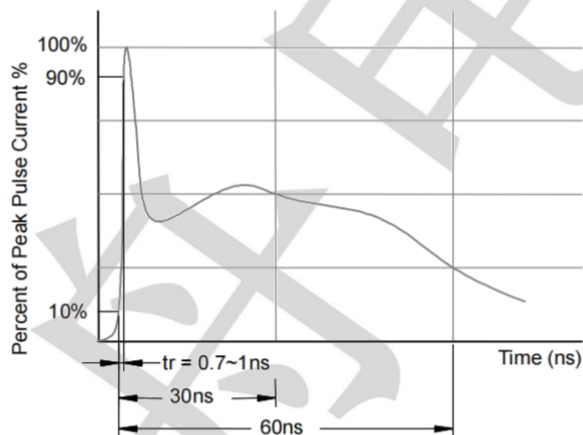
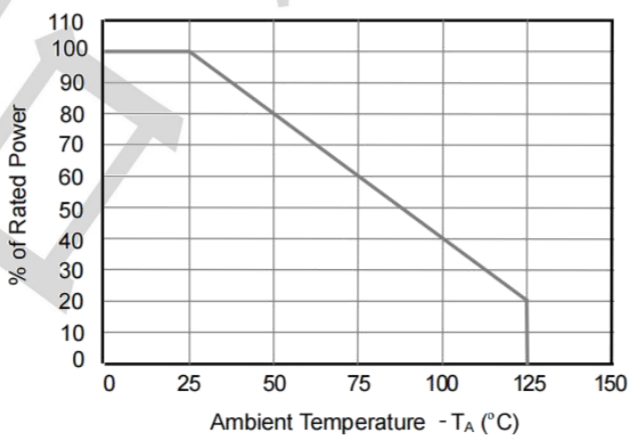
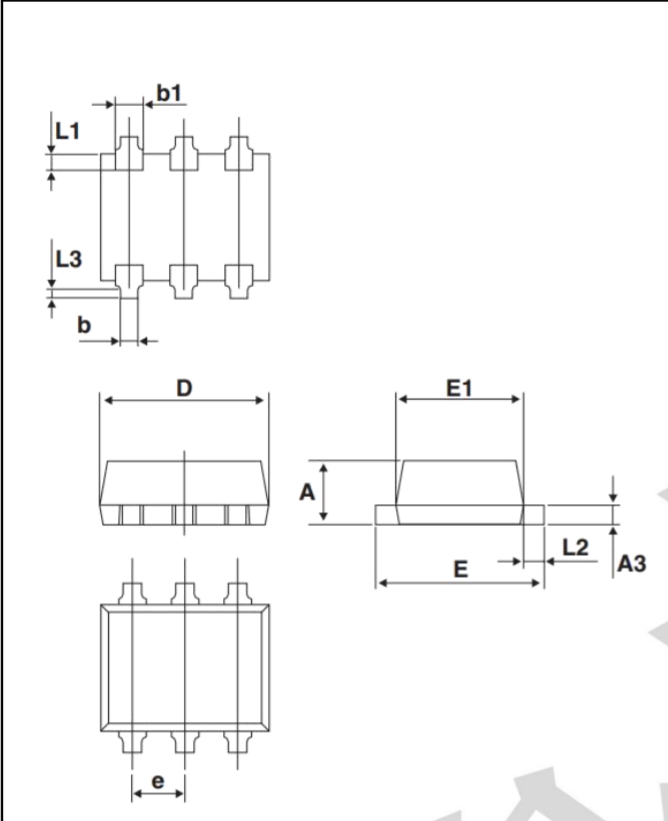


Fig3. Power Derating Curve



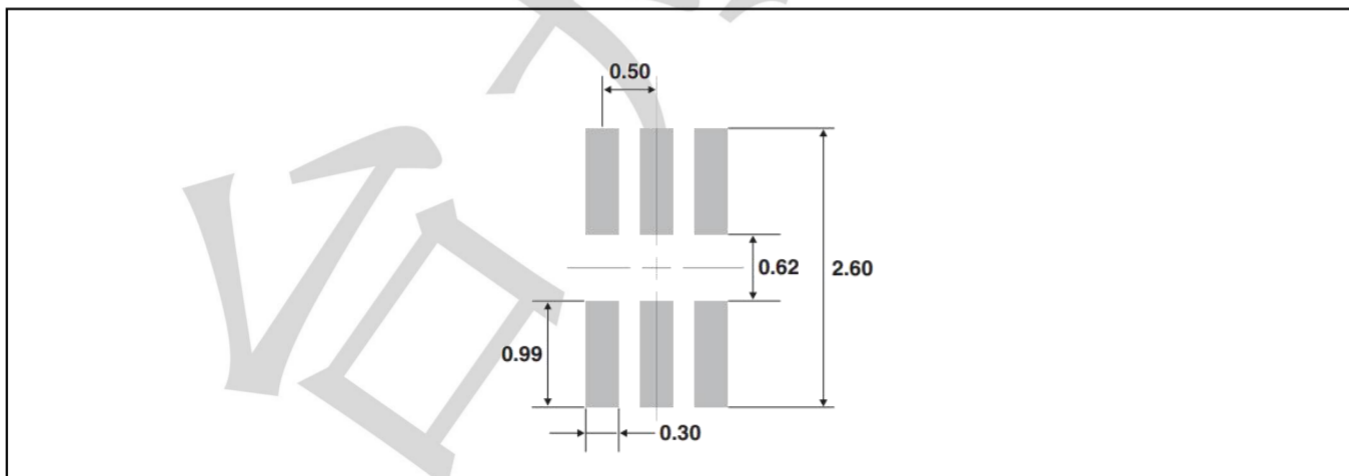
Package Outline & Dimensions

SOT-563



| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 0.45 | | 0.60 | 0.018 | | 0.024 |
| A3 | 0.08 | | 0.18 | 0.003 | | 0.007 |
| b | 0.17 | | 0.34 | 0.007 | | 0.013 |
| b1 | 0.19 | 0.27 | 0.34 | 0.007 | 0.011 | 0.013 |
| D | 1.50 | | 1.70 | 0.059 | | 0.067 |
| E | 1.50 | | 1.70 | 0.059 | | 0.067 |
| E1 | 1.10 | | 1.30 | 0.043 | | 0.051 |
| e | | 0.50 | | | 0.020 | |
| L1 | | 0.19 | | | 0.007 | |
| L2 | 0.10 | | 0.30 | 0.004 | | 0.012 |
| L3 | | 0.10 | | | 0.004 | |

FOOT PRINT (millimeters)



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