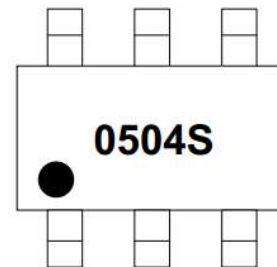


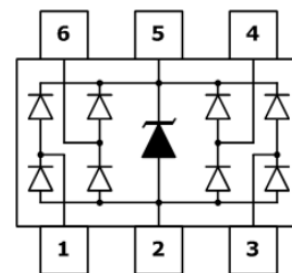
Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 5A (8/20 μs)
- RoHS Compliant

Dimensions SOT-363



Pin Configuration



Applications

- USB 2.0 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100/1000M Ethernet

Mechanical Characteristics

- Package: SOT-363
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000 pcs
- Reel Size: 7 inch
- Device Marking: 0504S

Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Peak Pulse Power (8/20 μs) | P _{pp} | 100 | W |
| ESD per IEC 61000-4-2 (Air) | V _{ESD} | ± 25 | Kv |
| ESD per IEC 61000-4-2 (Contact) | | ± 20 | |
| Operating Temperature Range | T _J | -55 to +125 | °C |
| Storage Temperature Range | T _{STJ} | -55 to +150 | °C |

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

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|-------------------------|-----------|---|-----|-----|-----|---------------|
| Reverse Working Voltage | V_{RWM} | | | | 5 | V |
| Breakdown Voltage | V_{BR} | $I_T = 1\text{mA}$ | 6 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 5\text{V}$ | | | 0.5 | μA |
| Clamping Voltage | V_C | $I_{PP} = 1\text{A}$ (8 x 20 μs pulse) | | | 15 | V |
| Clamping Voltage | V_C | $I_{PP} = 5\text{A}$ (8 x 20 μs pulse) | | | 20 | V |
| Junction Capacitance | C_J | $V_R = 0\text{V}$, $f = 1\text{MHz}$ | | 0.8 | | pF |

Characteristic Curves

Fig1. 8/20 μs Pulse Waveform

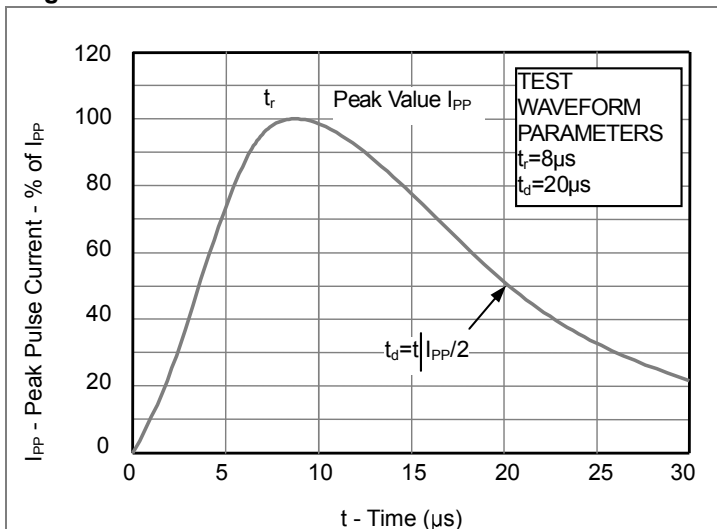


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

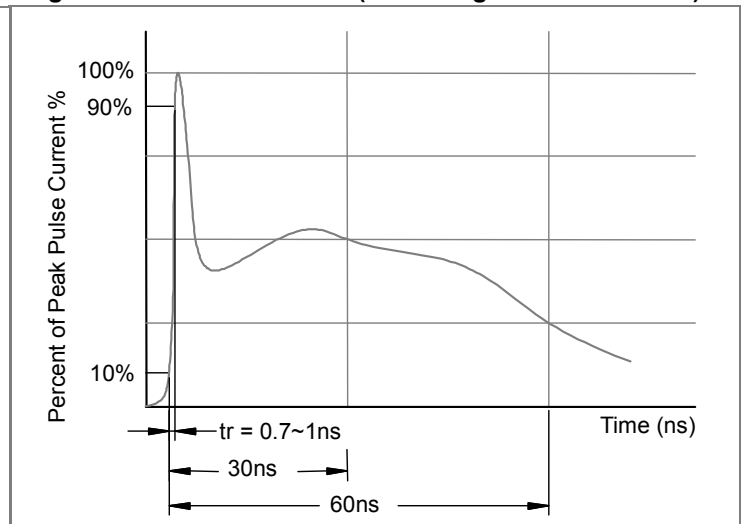
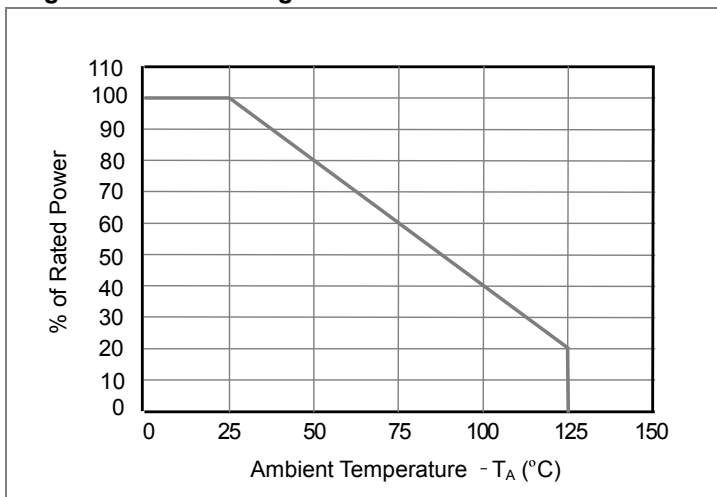
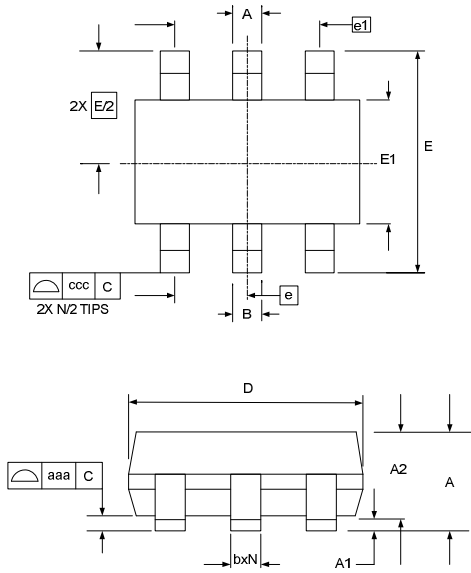


Fig3. Power Derating Curve

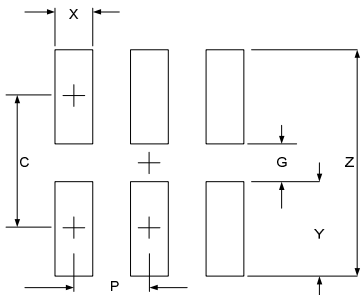


SOT-363 Package Outline Drawing



| SYM | DIMENSIONS | | | | | |
|-----|-------------|------|------|-----------|-------|-------|
| | MILLIMETERS | | | INCHES | | |
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | | | 1.10 | | | 0.043 |
| A1 | 0.00 | | 0.10 | 0.000 | | 0.004 |
| A2 | 0.70 | 0.90 | 1.00 | 0.028 | 0.035 | 0.039 |
| b | 0.15 | | 0.30 | 0.006 | | 0.012 |
| c | 0.08 | | 0.22 | 0.003 | | 0.009 |
| D | 1.80 | 2.00 | 2.20 | 0.071 | 0.079 | 0.087 |
| E1 | 1.15 | 1.25 | 1.35 | 0.045 | 0.049 | 0.053 |
| E | 2.10 BSC | | | 0.083 BSC | | |
| e | 0.65 BSC | | | 0.026 BSC | | |
| e1 | 1.30 BSC | | | 0.051 BSC | | |
| N | 6 | | | 6 | | |
| aaa | 0.10 | | | 0.004 | | |
| ccc | 0.30 | | | 0.012 | | |

Suggested Land Pattern



| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| C | 1.85 | 0.073 |
| G | 1.00 | 0.039 |
| P | 0.65 | 0.026 |
| X | 0.40 | 0.016 |
| Y | 0.85 | 0.033 |
| Z | 2.70 | 0.106 |