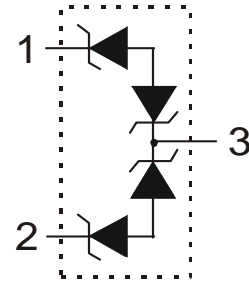


Features

- Air – ±30kV, Contact – ±30kV
- 2 Channels of Bi-Directional ESD Protection
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals



Device Schematic

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208

Maximum Ratings @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit | Conditions |
|------------------------------------|--------------------------|-------|------|------------------------|
| Peak Pulse Power Dissipation | P _{PP} | 84 | W | 8/20μs, Per in Fig. 1 |
| Peak Pulse Current | I _{PP} | 6 | A | 8/20μs, Per in Fig. 1 |
| ESD Protection – Contact Discharge | V _{ESD_Contact} | ±30 | kV | Standard IEC 61000-4-2 |
| ESD Protection – Air Discharge | V _{ESD_Air} | ±30 | kV | Standard IEC 61000-4-2 |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Package Power Dissipation (Note 5) | P _D | 300 | mW |
| Thermal Resistance, Junction to Ambient (Note 5) | R _{θJA} | 417 | °C/W |
| Operating Junction Temperature Range | T _J | -65 to +150 | °C |
| Storage Temperature Range | T _{STG} | -65 to +150 | °C |

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Conditions |
|----------------------------------|-----------|-----|------|------|----------|---|
| Reverse Working Voltage | V_{RWM} | | | 5.0 | V | |
| Breakdown Voltage | V_{BR} | 6 | 7 | 8 | V | $I_R = 1.0\text{mA}$ |
| Reverse Leakage Current (Note 6) | I_R | | 10 | 100 | nA | $V_{RWM} = 5\text{V}$ |
| Clamping Voltage (Note 4) | V_{CL} | | 7.0 | 9.0 | V | $I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$ |
| | | | 8.7 | 10.7 | V | $I_{PP} = 3\text{A}, t_p = 8/20\mu\text{s}$ |
| | | | 10.5 | 12.0 | V | $I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$ |
| | | | 11.5 | 14.0 | V | $I_{PP} = 6\text{A}, t_p = 8/20\mu\text{s}$ |
| Differential Resistance | R_{DIF} | | 0.2 | | Ω | $I_R = 1.0\text{A}, t_p = 8/20\mu\text{s}$ |
| Channel Input Capacitance | C_T | | 15 | 20 | pF | $V_{IN} = 0\text{V}, f = 1\text{MHz}$ (Channel to Pin 3) |

- Notes:
4. Measured from channel to pin 3; Non-repetitive current pulse per Fig. 1.
 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes
 6. Short duration pulse test used to minimize self-heating effect.

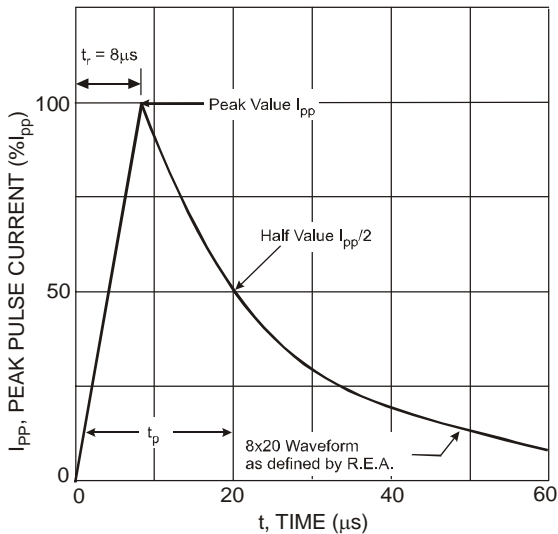


Fig. 1 Typical 8 x 20μs Pulse Waveform

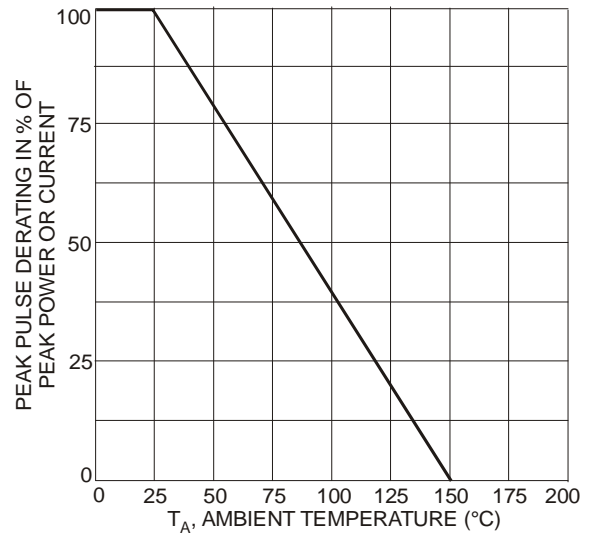


Fig. 2 Pulse Derating Curve

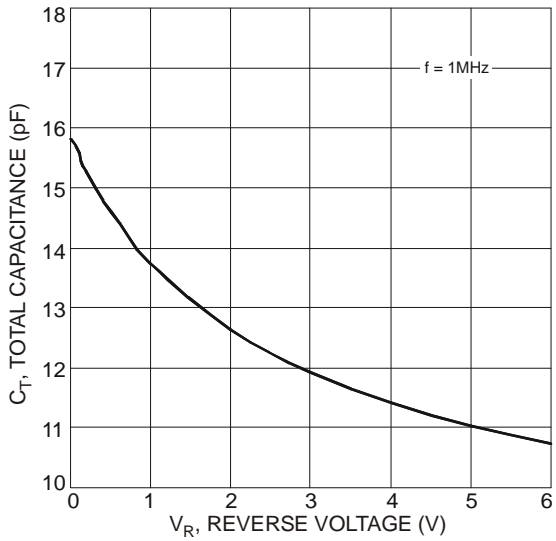


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

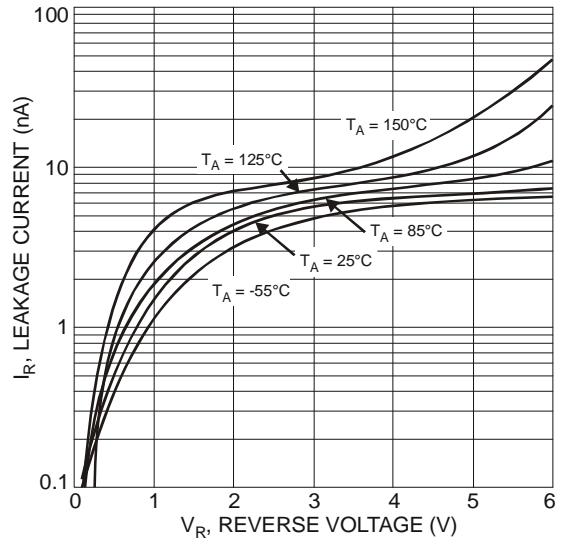
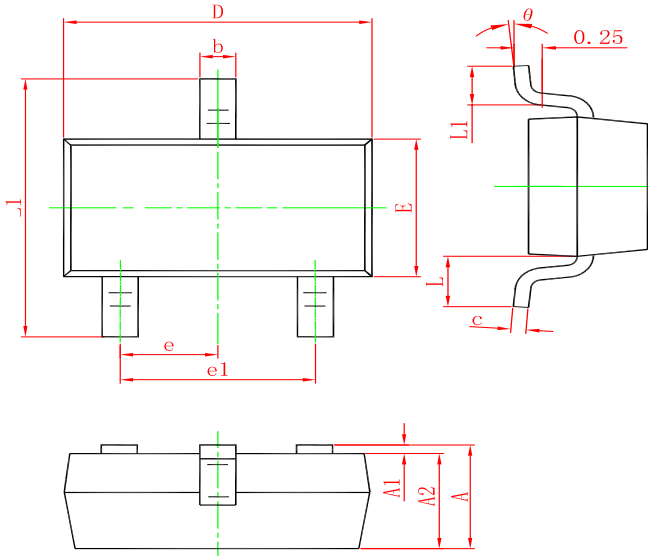


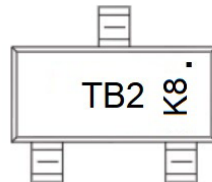
Fig. 4 Typical Reverse Characteristics

SOT-23 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP. | | 0.037 TYP. | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF. | | 0.022 REF. | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

Marking



Ordering information

| Order code | Package | Baseqty | Deliverymode |
|------------------|---------|---------|---------------|
| UMW D5V0L2B3SO-7 | SOT-23 | 3000 | Tape and reel |

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