

Features

- 450 watts peak pulse power ($t_p = 8/20\mu s$)
- Low Clamping Voltage
- Working Voltages: 5V
- Low Leakage Current
- Response Time is Typically $< 1\text{ ns}$

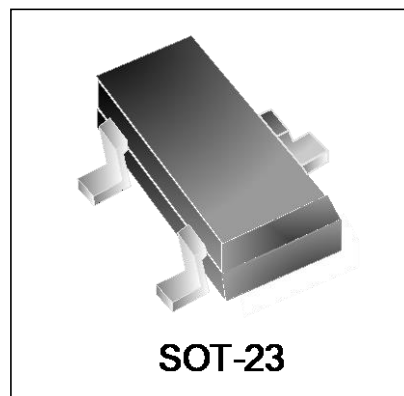
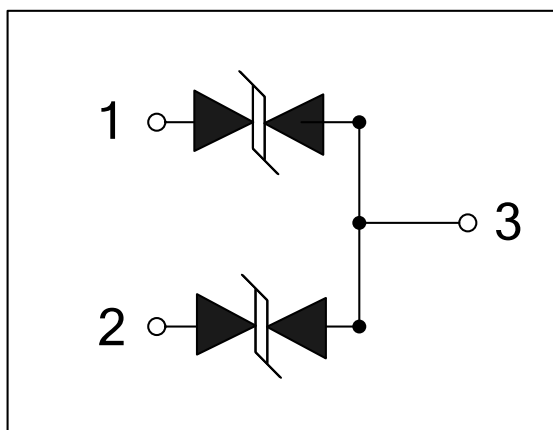
IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 18A (8/20 μs)

Mechanical Characteristics

- JEDEC SOT-23 package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant

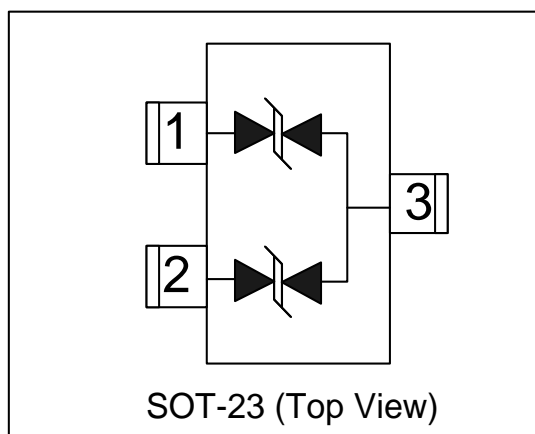
Circuit Diagram



Applications

- RS-232, RS-422 & RS-485
- Cellular Handsets and Accessories
- Control & Monitoring Systems
- Portable Electronics
- Set-Top Box
- Servers, Notebook, and Desktop PC
- Wireless Bus Protection

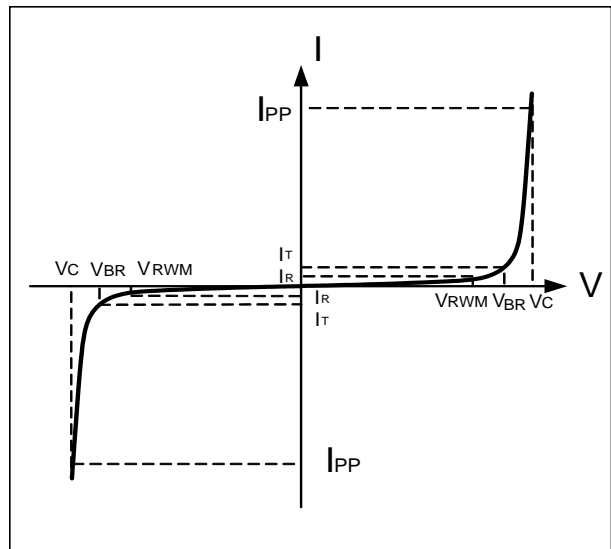
Schematic & PIN Configuration



| Absolute Maximum Rating | | | |
|--------------------------------------|-----------|--------------|-------------|
| Rating | Symbol | Value | Units |
| Peak Pulse Power ($t_p=8/20\mu s$) | P_{PP} | 450 | Watts |
| Lead Soldering Temperature | T_L | 260(10sec) | $^{\circ}C$ |
| Operating Temperature | T_J | -55 to + 125 | $^{\circ}C$ |
| Storage Temperature | T_{STG} | -55 to +150 | $^{\circ}C$ |

Electrical Parameters (T=25 $^{\circ}C$)

| Symbol | Parameter |
|-----------|-------------------------------------|
| I_{PP} | Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| V_{RWM} | Working Peak Reverse Voltage |
| I_R | Reverse Leakage Current @ V_{RWM} |
| V_{BR} | Breakdown Voltage @ I_T |
| I_T | Test Current |
| I_F | Forward Current |
| V_F | Forward Voltage @ I_F |



Electrical Characteristics

| DW05M2T-B-S | | | | | | |
|---------------------------|-----------|---|---------|---------|---------|---------|
| Parameter | Symbol | Conditions | Minimum | Typical | Maximum | Units |
| Reverse Stand-Off Voltage | V_{RWM} | | | | 5 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T=1mA$ | 6 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM}=5V, T=25^{\circ}C$ | | | 1 | μA |
| Peak Pulse Current | I_{PP} | $t_p = 8/20\mu s$ | | | 18 | A |
| Clamping Voltage | V_C | $I_{PP}=1A, t_p=8/20\mu s$ | | | 9.8 | V |
| Maximum Clamping Voltage | V_C | $I_{PP}=18A, t_p=8/20\mu s$ | | | 20 | V |
| Junction Capacitance | C_j | Pin 1 to 3 and Pin 2 to 3 $V_R = 0V, f = 1MHz$ | | 75 | 80 | pF |

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

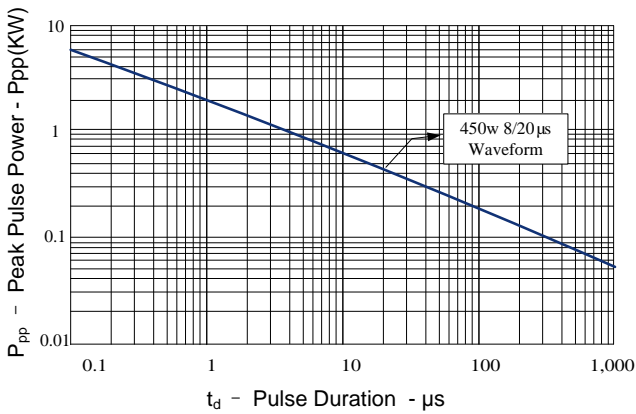


Figure 2: Power Derating Curve

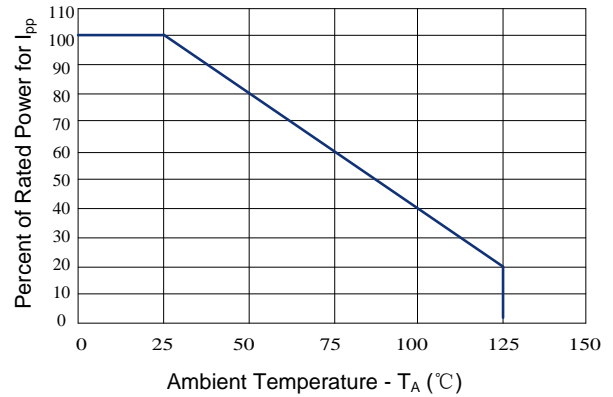


Figure 3: Clamping Voltage vs. Peak Pulse Current

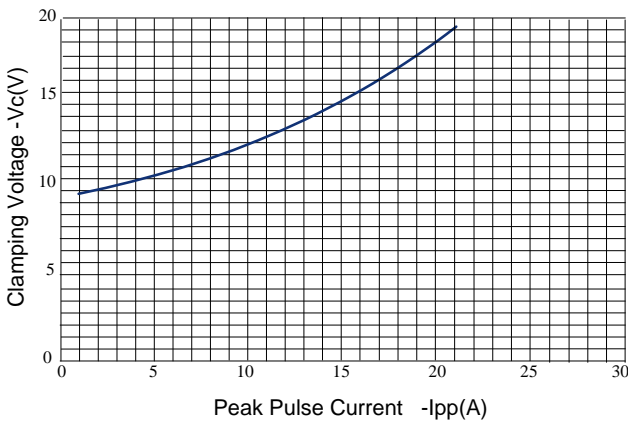


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

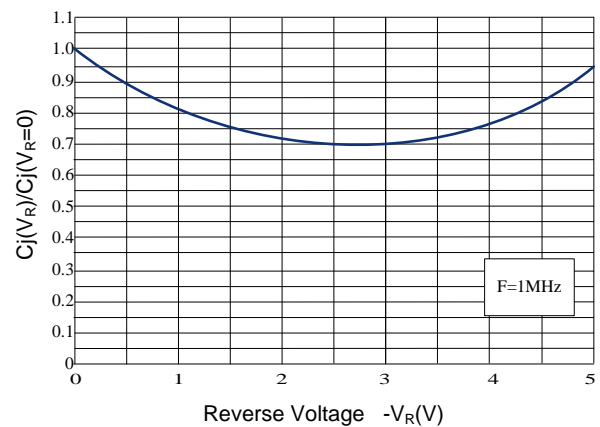
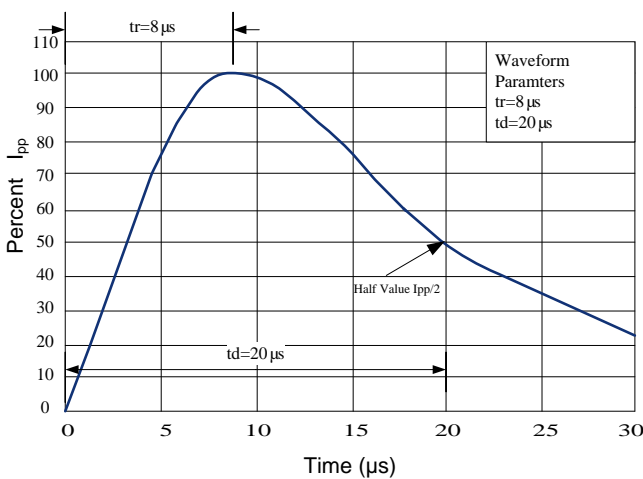


Figure 5: Pulse Waveform



Outline Drawing – SOT-23

PACKAGE OUTLINE

SOT-23

| SYMBOL | MILLIMETER | | INCHES | |
|--------|------------|------|------------|--------|
| | MIN | MAX | MIN | MAX |
| A | 0.90 | 1.15 | 0.035 | 0.045 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| A2 | 0.60 | 0.70 | 0.0236 | 0.0275 |
| b | 0.30 | 0.50 | 0.012 | 0.020 |
| c | 0.08 | 0.15 | 0.003 | 0.006 |
| D | 2.80 | 3.00 | 0.110 | 0.118 |
| E | 2.25 | 2.55 | 0.089 | 0.100 |
| E1 | 1.20 | 1.40 | 0.047 | 0.055 |
| e | 0.95 BSC | | 0.0374 BSC | |
| e1 | 1.80 | 2.00 | 0.071 | 0.079 |
| L | 0.30 | 0.50 | 0.012 | 0.020 |
| θ | 0 | 8° | 0 | 8° |

| DIMENSIONS | | |
|------------|-----------|-------------|
| DIM | INCHES | MILLIMETERS |
| M | 0.0795 | 2.02 |
| C | 0.0315 | 0.80 |
| Z | 0.111 | 2.82 |
| e | 0.037 BSC | 0.95 BSC |
| e1 | 0.075 BSC | 1.9 BSC |
| b | 0.0315 | 0.80 |

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Pin 3 is the cathode (Unidirectional Only).
4. Dimensions are exclusive of mold flash and metal burrs.

Marking Codes

| | |
|--------------|-------------|
| Part Number | DW05M2T-B-S |
| Marking Code | 5B2 |

Package Information

Qty: 3k/Reel