

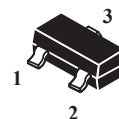
Surface Mount Switching Diode

 Lead(Pb)-Free

Features:

- *Low Current Leakage
- *Low Forward Voltage
- *Reverse Recover Time $T_{rr} \leq 4ns$
- *Small Outline Surface Mount SOT-23 Package

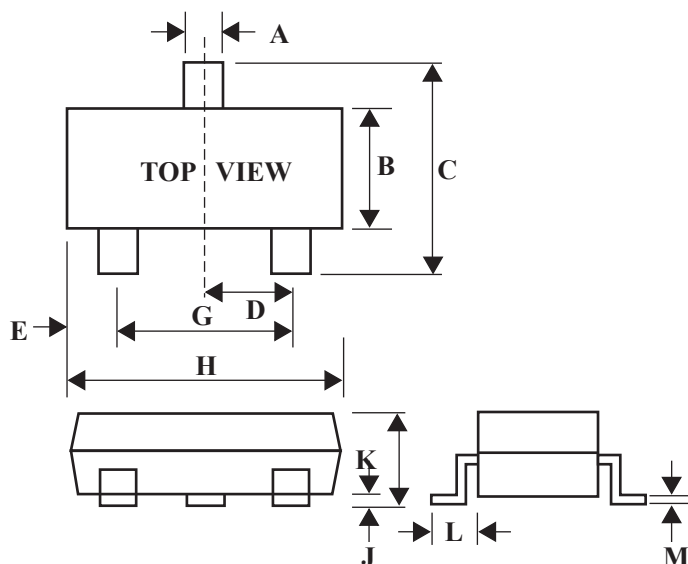
SWITCHING DIODE
100-200m AMPERRES
75-100 VOLTS



SOT-23

SOT-23 Outline Dimensions

Unit:mm



| Dim | Min | Max |
|-----|-------|------|
| A | 0.35 | 0.51 |
| B | 1.19 | 1.40 |
| C | 2.10 | 3.00 |
| D | 0.85 | 1.05 |
| E | 0.46 | 1.00 |
| G | 1.70 | 2.10 |
| H | 2.70 | 3.10 |
| J | 0.01 | 0.13 |
| K | 0.89 | 1.10 |
| L | 0.30 | 0.61 |
| M | 0.076 | 0.25 |

Maximum Ratings (EACH DIODE)

| Characteristic | Symbol | MMBD2836 | MMBD2838 | MMBD7000 | Unit |
|----------------------------|----------|----------|----------|----------|-------|
| Reverse Voltage | V_R | 75 | | 100 | Volts |
| Forward Current | I_F | 100 | | 200 | mAdc |
| Peak Forward Surge Current | I_{FM} | 500 | | | mAdc |

Thermal Characteristics

| Characteristic | Symbol | Max | Unit |
|--|-----------------|--------------|----------------------------|
| Total Device Dissipation FR-5 Board *1, $T_A=25^\circ\text{C}$ Derate Above 25°C | P_D | 225 1.8 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 556 | $^\circ\text{C}/\text{W}$ |
| Total Device Dissipation Alumina Substrate*2 $T_A=25^\circ\text{C}$ Derate Above 25°C | P_D | 300 2.4 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 417 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature | T_J, T_{stg} | -55 to + 150 | $^\circ\text{C}$ |

*1 ER-5=1.0x0.75x0.062 in

*2 Alumina=0.4x0.3x0.024 in 99.5% Alumina

Electrical Characteristics ($T_A=25^\circ\text{C}$ Unless Otherwise Note) (Each Diode)

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

Off Characteristics

| | | | | |
|---|----------|-----------|------------|-----------------|
| Reverse Breakdown Voltage($I_{BR}=100\mu\text{Adc}$) MMBD2836/MMBD2838 MMBD7000 | V_{BR} | 75 100 | - | Vdc |
| Reverse Voltage Leakage Current $V_R=50\text{V}$ MMBD2836/MMBD2838 MMBD7000 | I_R | - | 0.1 1.0 | μAdc |
| $V_R=100\text{V}$ MMBD7000 | | | 3.0 | |
| $V_R=50\text{V}, T_J=125^\circ\text{C}$ MMBD7000 | | | 100 | |

Off Characteristic

| Characteristic | Symbol | Min | Max | Unit |
|--|----------|-----|--|------|
| Diode Capacitance MMBD2836/MMBD2838 ($V_R=0, f=1.0\text{MHz}$) MMBD7000 | C_D | | 4.0 1.5 | PF |
| Forward Voltage ($I_F=1.0\text{ mAdc}$) MMBD7000 ($I_F=10\text{ mAdc}$) MMBD2836/MMBD2838 MMBD7000 ($I_F=50\text{ mAdc}$) MMBD2836/MMBD2838 ($I_F=100\text{ mAdc}$) MMBD2836/MMBD2838 MMBD7000 | V_F | | 700 1000 820 1000 1200 1100 | mVdc |
| Reverse Recovery Time (Figure 1.) $I_F=I_R=10\text{ mAdc}, V_R=5.0\text{Vdc}$ $I_R(\text{REC})=1.0\text{ mAdc}, R_L=100$ | t_{rr} | | 4.0 | nS |

Device Marking

| Item | Marking | Equivalent Circuit diagram |
|----------|---------|----------------------------|
| MMBD2838 | A6 | |
| MMBD2836 | A2X | |
| MMBD7000 | M5C | |

Figure 1. Recovery Time Equivalent Test Circuit

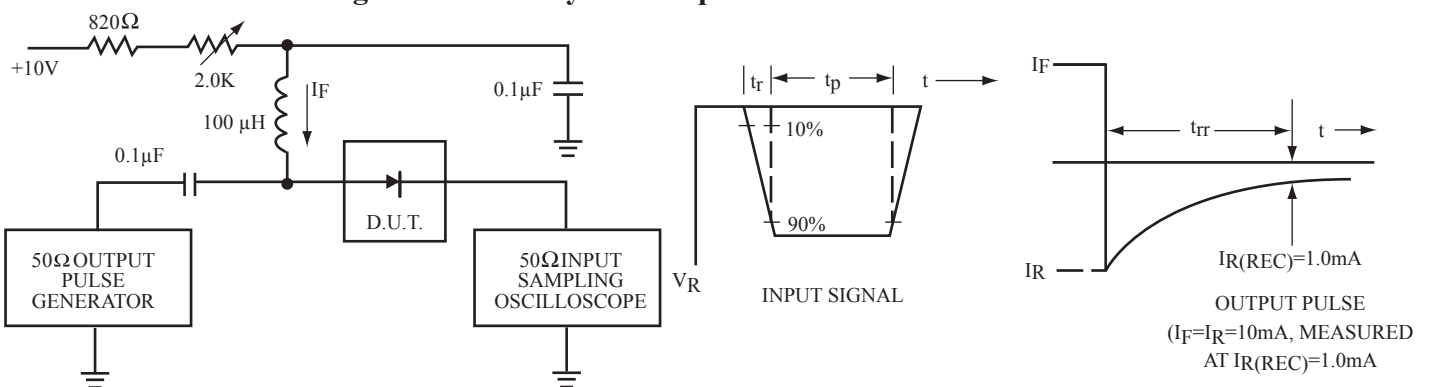


FIGURE 2. FORWARD VOLTAGE

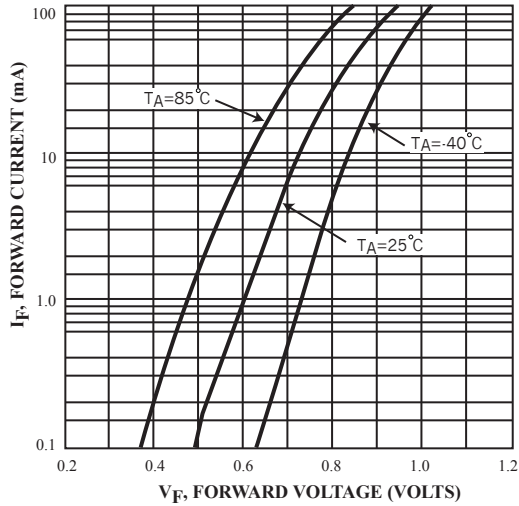


FIGURE 3. LEAKAGE CURRENT

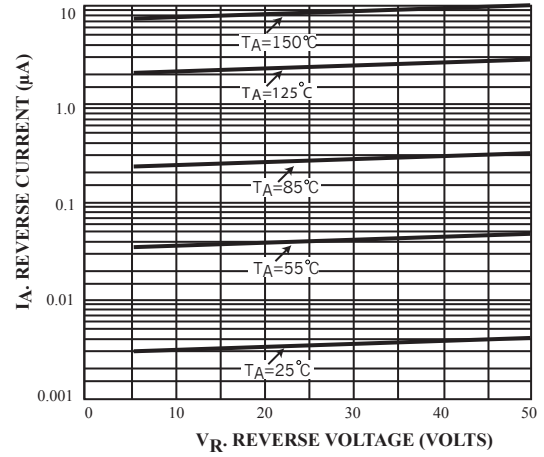


FIGURE 4. CAPACITANCE(2836)

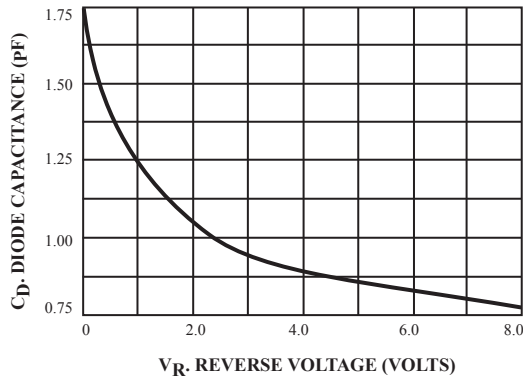


FIGURE 5. CAPACITANCE(2838)

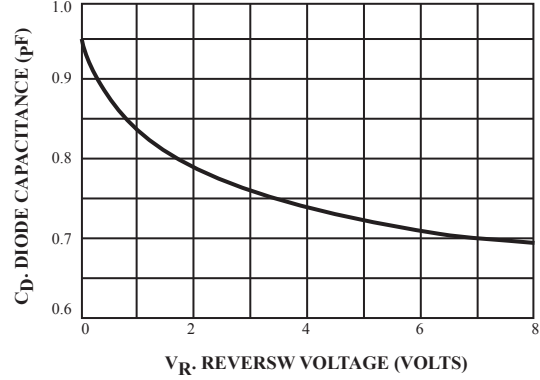


FIGURE 6. CAPACITANCE(7000)

