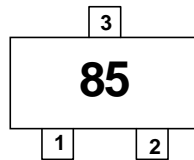
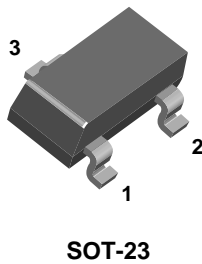


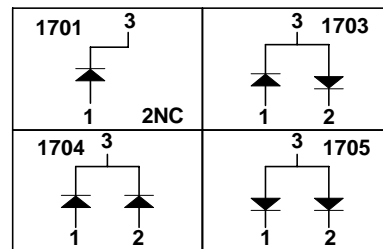
MMBD1701/A / 1703/A / 1704/A / 1705/A



MARKING

| | | | |
|----------|----|-----------|-----|
| MMBD1701 | 85 | MMBD1701A | 85A |
| MMBD1703 | 87 | MMBD1703A | 87A |
| MMBD1704 | 88 | MMBD1704A | 88A |
| MMBD1705 | 89 | MMBD1705A | 89A |

Connection Diagrams



Small Signal Diodes Absolute Maximum Ratings*

$T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-------------|-----------------------------------------------------------------------|-------------|------------------|
| V_{RRM} | Maximum Repetitive Reverse Voltage | 30 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current | 50 | mA |
| I_{FSM} | Non-repetitive Peak Forward Surge Current Pulse Width = 1.0 second | 250 | mA |
| T_{stg} | Storage Temperature Range | -55 to +150 | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature | 150 | $^\circ\text{C}$ |

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations

Thermal Characteristics

| Symbol | Parameter | Value | Units |
|-----------------|-----------------------------------------|-------|---------------------------|
| P_D | Power Dissipation | 350 | mW |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 357 | $^\circ\text{C}/\text{W}$ |

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

| Symbol | Parameter | Test Conditions | Min | Max | Units |
|----------|-----------------------|--------------------------------------------------------------------------------------------------|------|-----|-------|
| V_R | Breakdown Voltage | $I_R = 5.0 \mu\text{A}$ | 30 | | V |
| V_F | Forward Voltage | $I_F = 10 \mu\text{A}$ | 420 | 500 | mV |
| | | $I_F = 100 \mu\text{A}$ | 520 | 610 | mV |
| | | $I_F = 1.0 \text{ mA}$ | 640 | 740 | mV |
| | | $I_F = 10 \text{ mA}$ | 760 | 880 | mV |
| | | $I_F = 20 \text{ mA}$ | 810 | 950 | mV |
| | | $I_F = 50 \text{ mA}$ | 0.89 | 1.1 | V |
| I_R | Reverse Current | $V_R = 20 \text{ V}$ | | 50 | nA |
| C_T | Total Capacitance | $V_R = 0, f = 1.0 \text{ MHz}$ | | 1.0 | pF |
| t_{rr} | Reverse Recovery Time | MMBD1701-1705 $I_F = I_R = 10 \text{ mA}, I_{RR} = 1.0 \text{ mA}, R_L = 100 \Omega$ | | 0.7 | ns |
| | | MMBD1701A-1705A $I_F = I_R = 10 \text{ mA}, I_{RR} = 1.0 \text{ mA}, R_L = 100 \Omega$ | | 1.0 | ns |

Typical Characteristics

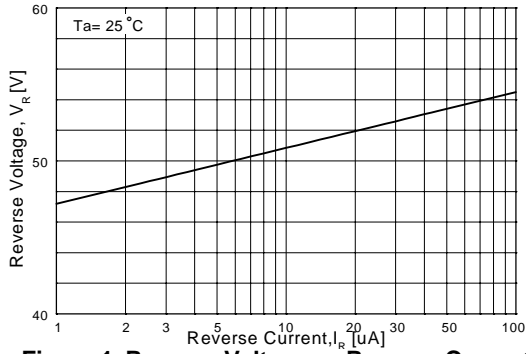


Figure 1. Reverse Voltage vs Reverse Current
BV - 1.0 to 100 uA

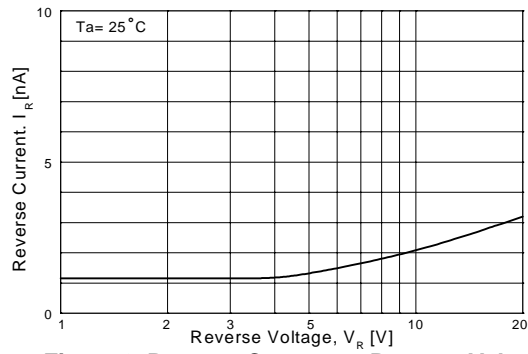


Figure 2. Reverse Current vs Reverse Voltage
IR - 1 to 22V

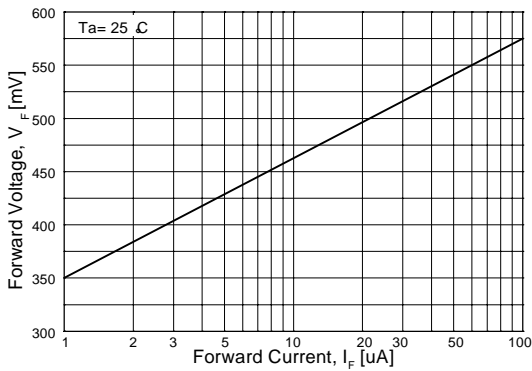


Figure 3. Forward Voltage vs Forward Current
VF - 1.0 to 100 uA

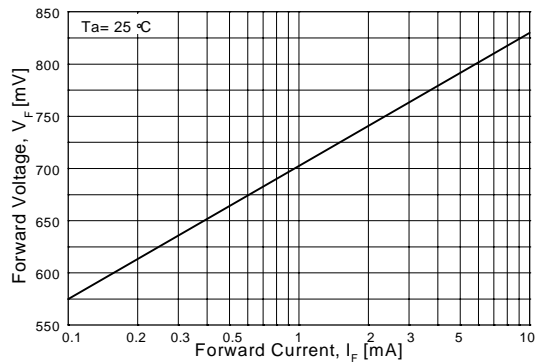


Figure 4. Forward Voltage vs Forward Current
VF - 0.1 to 10 mA

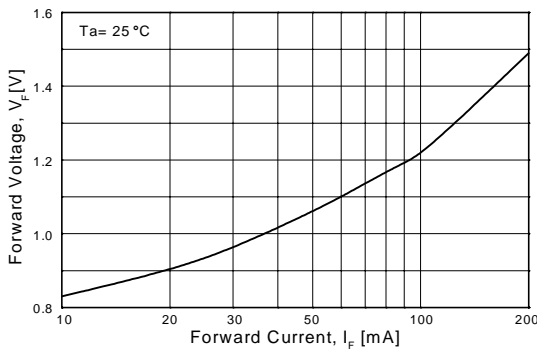


Figure 5. Forward Voltage vs Forward Current
VF - 10 - 200 mA

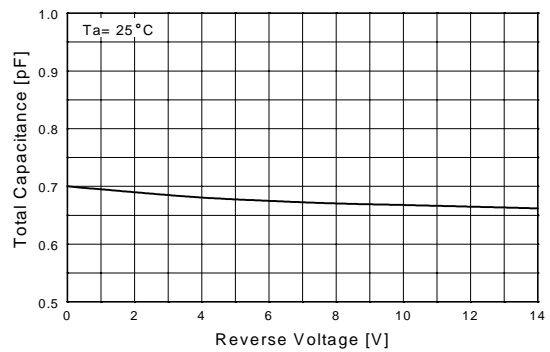


Figure 6. Total Capacitance vs Reverse Current

Typical Characteristics (continued)

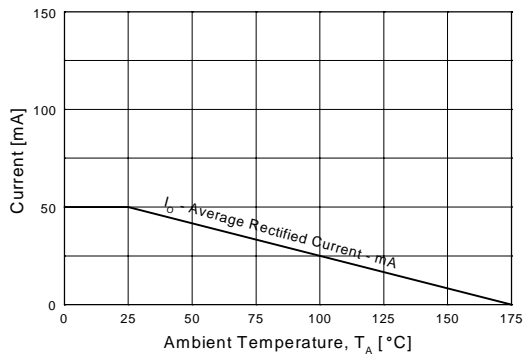


Figure 7. Average Rectified Current (I_o) versus Ambient Temperature (T_A)

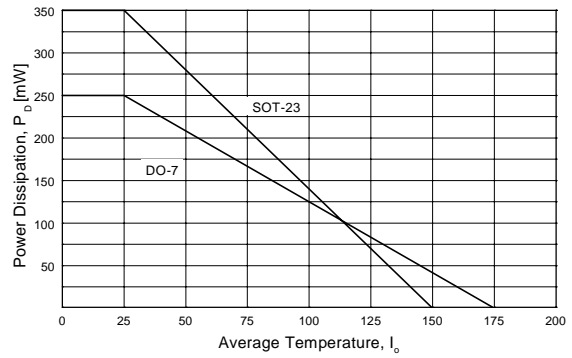


Figure 8. Power Derating Curve

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