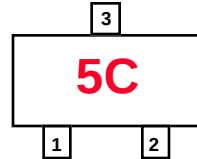
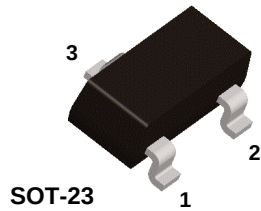
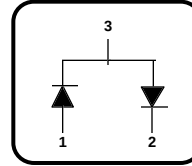


# MMBD7000



CONNECTION DIAGRAM



## High Conductance Ultra Fast Diode

Sourced from Process 1P. See MMBD1201-1205 for characteristics.

### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

| Symbol         | Parameter                                                                               | Value       | Units  |
|----------------|-----------------------------------------------------------------------------------------|-------------|--------|
| $W_{IV}$       | Working Inverse Voltage                                                                 | 70          | V      |
| $I_O$          | Average Rectified Current                                                               | 200         | mA     |
| $I_F$          | DC Forward Current                                                                      | 600         | mA     |
| $i_f$          | Recurrent Peak Forward Current                                                          | 700         | mA     |
| $I_{f(surge)}$ | Peak Forward Surge Current<br>Pulse width = 1.0 second<br>Pulse width = 1.0 microsecond | 1.0<br>2.0  | A<br>A |
| $T_{stg}$      | Storage Temperature Range                                                               | -55 to +150 | °C     |
| $T_J$          | Operating Junction Temperature                                                          | 150         | °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

TA = 25°C unless otherwise noted

| Symbol          | Characteristic                                | Max        | Units       |
|-----------------|-----------------------------------------------|------------|-------------|
|                 |                                               | MMBD7000*  |             |
| $P_D$           | Total Device Dissipation<br>Derate above 25°C | 350<br>2.8 | mW<br>mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient       | 357        | °C/W        |

\*Device mounted on glass epoxy PCB 1.6" X 1.6" X 0.06"; mounting pad for the collector lead min. 0.93 in2

# High Conductance Ultra Fast Diode

(continued)

MMBD7000

## Electrical Characteristics

TA = 25°C unless otherwise noted

| Symbol          | Parameter             | Test Conditions                                                                                        | Min                | Max                       | Units              |
|-----------------|-----------------------|--------------------------------------------------------------------------------------------------------|--------------------|---------------------------|--------------------|
| B <sub>V</sub>  | Breakdown Voltage     | I <sub>R</sub> = 100 μA                                                                                | 100                |                           | V                  |
| I <sub>R</sub>  | Reverse Current       | V <sub>R</sub> = 100 V<br>V <sub>R</sub> = 50 V<br>V <sub>R</sub> = 50 V, T <sub>A</sub> = 125°C       |                    | 500<br>300<br>100         | nA<br>nA<br>μA     |
| V <sub>F</sub>  | Forward Voltage       | I <sub>F</sub> = 1.0 mA<br>I <sub>F</sub> = 10 mA<br>I <sub>F</sub> = 50 mA<br>I <sub>F</sub> = 150 mA | 550<br>670<br>0.75 | 700<br>820<br>1.1<br>1.25 | mV<br>mV<br>V<br>V |
| C <sub>O</sub>  | Diode Capacitance     | V <sub>R</sub> = 0, f = 1.0 MHz                                                                        |                    | 1.5                       | pF                 |
| T <sub>RR</sub> | Reverse Recovery Time | I <sub>F</sub> = 10 mA, I <sub>RR</sub> = 1.0 mA,<br>R <sub>L</sub> = 100Ω                             |                    | 4.0                       | nS                 |