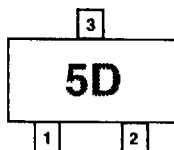
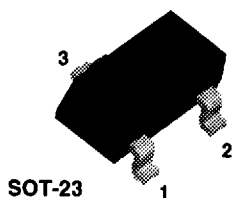
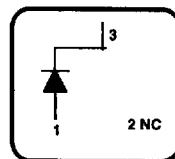


## MMBD914



CONNECTION DIAGRAM



### High Conductance Ultra Fast Diode

Sourced from Process 1P. See 1N4148 for characteristics.

#### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

| Symbol              | Parameter                                                                               | Value       | Units  |
|---------------------|-----------------------------------------------------------------------------------------|-------------|--------|
| $W_{IV}$            | Working Inverse Voltage                                                                 | 75          | V      |
| $I_O$               | Average Rectified Current                                                               | 200         | mA     |
| $I_F$               | DC Forward Current                                                                      | 600         | mA     |
| $i_F$               | Recurrent Peak Forward Current                                                          | 700         | mA     |
| $i_F(\text{surge})$ | 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       |
|-----------------|-----------------------------------------------|------------|-------------|
|                 |                                               | MMBD914*   |             |
| $P_D$           | 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)

**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<br>I <sub>R</sub> = 5.0 μA                                                 | 100<br>75 |                 | V<br>V         |
| I <sub>R</sub>  | Reverse Current               | V <sub>R</sub> = 20 V<br>V <sub>R</sub> = 20 V, T <sub>A</sub> = 150°C<br>V <sub>R</sub> = 75 V    |           | 25<br>50<br>5.0 | nA<br>μA<br>μA |
| V <sub>F</sub>  | Forward Voltage               | I <sub>F</sub> = 10 mA                                                                             |           | 1.0             | V              |
| C <sub>O</sub>  | Diode Capacitance             | V <sub>R</sub> = 0, f = 1.0 MHz                                                                    |           | 4.0             | pF             |
| T <sub>RR</sub> | Reverse Recovery Time         | I <sub>F</sub> = 10 mA, V <sub>R</sub> = 6.0 V,<br>I <sub>RR</sub> = 1.0 mA, R <sub>L</sub> = 100Ω |           | 4.0             | nS             |
| V <sub>FM</sub> | Peak Forward Recovery Voltage | I <sub>F</sub> = 50 mA PEAK SQUARE WAVE<br>PULSE WIDTH = 0.1 μS<br>5 kHz - 100 kHz REP RATE        |           | 2.5             | V              |