

# 1N4454



DO-35

## High Conductance Ultra Fast Diode

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

### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

| Symbol        | Parameter                                                                               | Value       | Units  |
|---------------|-----------------------------------------------------------------------------------------|-------------|--------|
| $W_{IV}$      | Working Inverse Voltage                                                                 | 50          | V      |
| $I_O$         | Average Rectified Current                                                               | 200         | mA     |
| $I_F$         | DC Forward Current                                                                      | 400         | mA     |
| $i_F$         | Recurrent Peak Forward Current                                                          | 600         | mA     |
| $i_{(surge)}$ | Peak Forward Surge Current<br>Pulse width = 1.0 second<br>Pulse width = 1.0 microsecond | 1.0<br>4.0  | A<br>A |
| $T_{stg}$     | Storage Temperature Range                                                               | -65 to +200 | °C     |
| $T_J$         | Operating Junction Temperature                                                          | 175         | °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 200 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       |
|-----------------|-----------------------------------------------|-------------|-------------|
|                 |                                               | 1N4454      |             |
| $P_D$           | Total Device Dissipation<br>Derate above 25°C | 500<br>3.33 | mW<br>mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient       | 300         | °C/W        |

# High Conductance Ultra Fast Diode

(continued)

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## 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> = 5.0 μA                                                                                 | 75                |                          | V                   |
| I <sub>R</sub>  | Reverse Current       | V <sub>R</sub> = 50 V<br>V <sub>R</sub> = 50 V, T <sub>A</sub> = 150°C                                  |                   | 100<br>100               | nA<br>μA            |
| V <sub>F</sub>  | Forward Voltage       | I <sub>F</sub> = 250 μA<br>I <sub>F</sub> = 1.0 mA<br>I <sub>F</sub> = 2.0 mA<br>I <sub>F</sub> = 10 mA | 505<br>550<br>610 | 575<br>650<br>710<br>1.0 | mV<br>mV<br>mV<br>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> = 1.0 V,<br>I <sub>rr</sub> = 1.0 mA, R <sub>L</sub> = 100 Ω     |                   | 4.0                      | nS                  |