

T-03-09

# HIGH CONDUCTANCE ULTRA FAST SWITCHING DIODES

1N914A/B • 1N916A/B  
1N4148 • 1N4149 • 1N4446  
1N4447 • 1N4448 • 1N4449

## ABSOLUTE MAXIMUM RATINGS

- $T_{rr}$  4.0 ns
- $B_V$  100 V (MIN)

### Temperatures

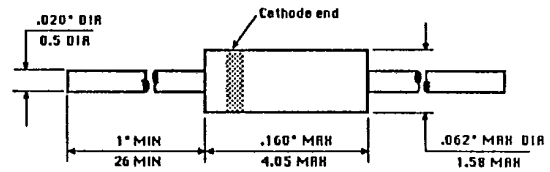
|  |                   |
|--|-------------------|
| Storage Temperature Range              | -65 °C to +200 °C |
| Maximum Junction Operating Temperature | +175 °C           |
| Lead Temperature                       | +260 °C           |

### Power Dissipation

|  |             |
|--|-------------|
| Maximum Total Power Dissipation at 25 °C Ambient | 500mW       |
| Linear Power Derating Factor (from 25 °C)        | 3.33 mW/ °C |

### Maximum Voltage and Currents

|   |       |
|---|-------|
| $V_{IV}$ Working Inverse Voltage            | 75V   |
| $I_O$ Average Rectified Current             | 200mA |
| $I_F$ DC & Forward Current                  | 300mA |
| $I_{FR}$ Recurrent Peak Forward Current     | 400mA |
| $I_{FS}$ (surge) Peak Forward Surge Current |       |
| Pulse Width = 1.0 $\mu$ s                   | 4.0 A |
| Pulse Width = 1.0 s                         | 1.0 A |



DO-35 PACKAGE

## ELECTRICAL CHARACTERISTICS (25 °C Ambient Temperature unless otherwise noted)

| SYMBOL   | CHARACTERISTIC                 | MIN   | MAX  | UNITS   | TEST CONDITIONS  |
|----------|--------------------------------|---|------|---------|--|
| $V_F$    | Forward Voltage                |   |      |         |  |
|          | 1N914B, 1N4448                 | 0.62  | 0.72 | V       | $I_F = 5.0$ mA   |
|          | 1N916B, 1N4449                 | 0.63  | 0.73 | V       | $I_F = 5.0$ mA   |
|          | 1N914, 1N916, 1N4148, 1N4149   |   | 1.0  | V       | $I_F = 10$ mA  |
|          | 1N914A, 1N916A, 1N4446, 1N4447 |   | 1.0  | V       | $I_F = 20$ mA  |
|          | 1N916B, 1N4449                 |   | 1.0  | V       | $I_F = 30$ mA  |
|          | 1N914B, 1N4448                 |   | 1.0  | V       | $I_F = 100$ mA   |
| $I_R$    | Reverse Current                |   | 25   | nA      | $V_R = 20$ V   |
|          |                                |   | 50   | $\mu$ A | $V_R = 20$ V, $T_A = 150$ °C   |
|          |                                |   | 5.0  | $\mu$ A | $V_R = 75$ V   |
| $B_V$    | Breakdown Voltage              | 100   |      | V       | $I_R = 100$ $\mu$ A  |
|          |                                | 75  |      | V       | $I_R = 5.0$ $\mu$ A  |
| $T_{rr}$ | Reverse Recovery Time          |   | 4.0  | ns      | $I_F = 10$ mA, $V_R = 6.0$ V<br>$R_L = 100$ $\Omega$ Rec. to 1.0 mA            |
| C        | Capacitance                    | 1N914, 1N914A, 1N914B, 1N4148, 1N4446, 1N4447 | 4.0  | pF      | $V_R = 0$ , $f = 1$ MHz  |
|          |                                | 1N916, 1N916A, 1N916B, 1N4149, 1N4448, 1N4449 | 2.0  | pF      | $V_R = 0$ , $f = 1$ MHz  |
| $V_{FR}$ | Peak Forward Recovery Voltage  |   | 2.5  | V       | 50 mA Peak Square Wave<br>0.1 $\mu$ s pulse width<br>5 kHz - 100 kHz rep. rate |
| RE       | Rectification Efficiency       |   | 45   | %       | 2.0 V rms, $f = 100$ MHz   |

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