

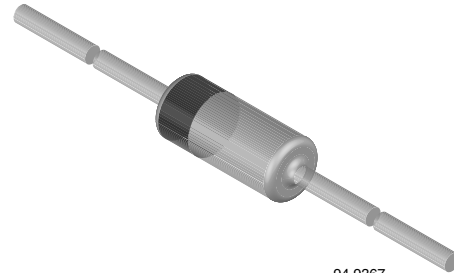
## Small Signal Fast Switching Diodes

### Features

- Silicon epitaxial planar diodes
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**



94 9367

### Applications

- Extreme fast switches

### Mechanical Data

**Case:** DO-35

**Weight:** approx. 125 mg

**Cathode Band Color:** black

### Packaging Codes/Options:

TR/10 k per 13" reel (52 mm tape), 50 k/box

TAP/10 k per Ammopack (52 mm tape), 50 k/box

### Parts Table

| Part   | Ordering code           | Type Marking | Remarks                |
|--------|-------------------------|--------------|------------------------|
| 1N4448 | 1N4448-TAP or 1N4448-TR | V4448        | Ammopack/tape and reel |

### Absolute Maximum Ratings

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Parameter                       | Test condition   | Symbol    | Value | Unit |
|---------------------------------|--|-----------|-------|------|
| Repetitive peak reverse voltage |  | $V_{RRM}$ | 100   | V    |
| Reverse voltage                 |  | $V_R$     | 75    | V    |
| Peak forward surge current      | $t_p = 1\text{ }\mu\text{s}$                           | $I_{FSM}$ | 2     | A    |
| Repetitive peak forward current |  | $I_{FRM}$ | 500   | mA   |
| Forward continuous current      |  | $I_F$     | 300   | mA   |
| Average forward current         | $V_R = 0$  | $I_{FAV}$ | 150   | mA   |
| Power dissipation               | $l = 4\text{ mm}, T_L = 45\text{ }^{\circ}\text{C}$    | $P_{tot}$ | 440   | mW   |
|                                 | $l = 4\text{ mm}, T_L \leq 25\text{ }^{\circ}\text{C}$ | $P_{tot}$ | 500   | mW   |

### Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Parameter                                  | Test condition                           | Symbol     | Value         | Unit               |
|--|--|------------|---------------|--------------------|
| Thermal resistance junction to ambient air | $l = 4\text{ mm}, T_L = \text{constant}$ | $R_{thJA}$ | 350           | K/W                |
| Junction temperature                       |  | $T_j$      | 175           | $^{\circ}\text{C}$ |
| Storage temperature range                  |  | $T_{stg}$  | - 65 to + 150 | $^{\circ}\text{C}$ |

### Electrical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Parameter                | Test condition   | Symbol     | Min. | Typ. | Max. | Unit          |
|--------------------------|--|------------|------|------|------|---------------|
| Forward voltage          | $I_F = 5\text{ mA}$  | $V_F$      | 620  |      | 720  | mV            |
|                          | $I_F = 100\text{ mA}$  | $V_F$      |      |      | 1000 | mV            |
| Reverse current          | $V_R = 20\text{ V}$  | $I_R$      |      |      | 25   | nA            |
|                          | $V_R = 20\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$                                     | $I_R$      |      |      | 50   | $\mu\text{A}$ |
|                          | $V_R = 75\text{ V}$  | $I_R$      |      |      | 5    | $\mu\text{A}$ |
| Breakdown voltage        | $I_R = 100\text{ }\mu\text{A}, t_p/T = 0.01,$<br>$t_p = 0.3\text{ ms}$                     | $V_{(BR)}$ | 100  |      |      | V             |
| Diode capacitance        | $V_R = 0, f = 1\text{ MHz}, V_{HF} = 50\text{ mV}$   | $C_D$      |      |      | 4    | pF            |
| Rectification efficiency | $V_{HF} = 2\text{ V}, f = 100\text{ MHz}$  | $\eta_r$   | 45   |      |      | %             |
| Reverse recovery time    | $I_F = I_R = 10\text{ mA}, i_R = 1\text{ mA}$  | $t_{rr}$   |      |      | 8    | ns            |
|                          | $I_F = 10\text{ mA}, V_R = 6\text{ V},$<br>$i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$ | $t_{rr}$   |      |      | 4    | ns            |

### Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

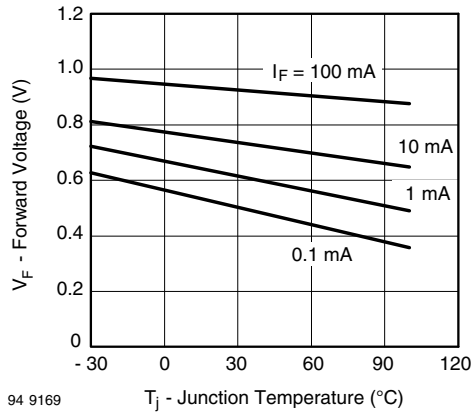


Figure 1. Forward Voltage vs. Junction Temperature

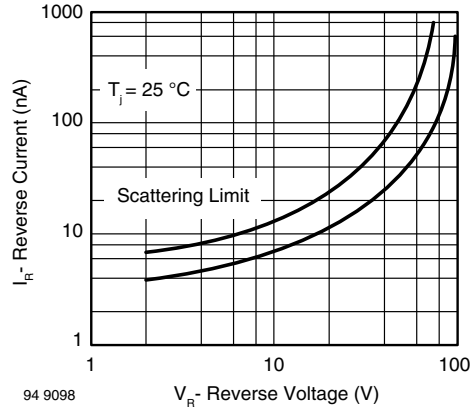


Figure 3. Reverse Current vs. Reverse Voltage

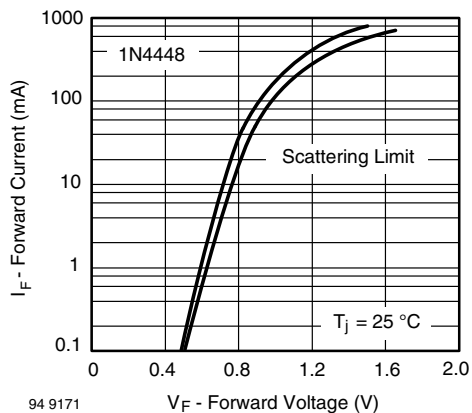
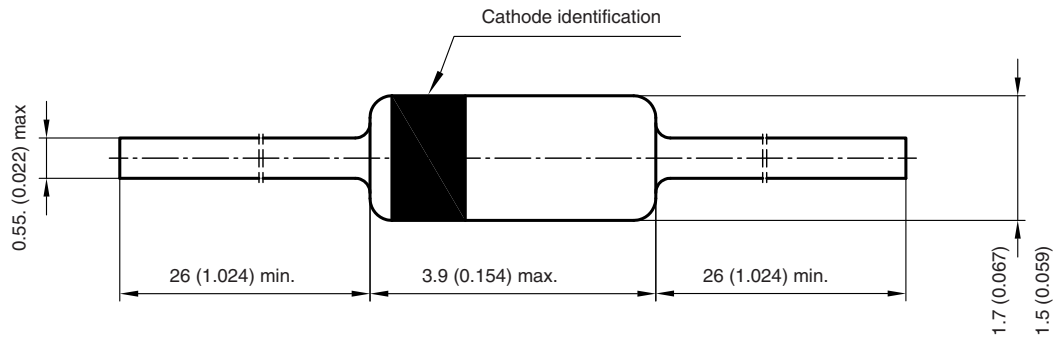


Figure 2. Forward Current vs. Forward Voltage

**Package Dimensions** in millimeters (inches): **DO-35**



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