



# Small Signal Fast Switching Diodes



### FEATURES

- Silicon epitaxial planar diode
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### APPLICATIONS

- Extreme fast switches



RoHS COMPLIANT HALOGEN FREE

### ADDITIONAL RESOURCES



### MECHANICAL DATA

Case: DO-35 (DO-204AH)

Weight: approx. 125 mg

Cathode band color: black

Packaging codes / options:

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

TAP/10K per ammpack (52 mm tape), 50K/box

| PARTS TABLE |                       |              |                       |                         |
|-------------|-----------------------|--------------|-----------------------|-------------------------|
| PART        | ORDERING CODE         | TYPE MARKING | CIRCUIT CONFIGURATION | REMARKS                 |
| 1N4154      | 1N4154TR or 1N4154TAP | 1N4154       | Single                | Tape and reel / ammpack |

| ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                                  |                    |       |      |
|---|----------------------------------|--------------------|-------|------|
| PARAMETER   | TEST CONDITION                   | SYMBOL             | VALUE | UNIT |
| Repetitive peak reverse voltage   |                                  | V <sub>RRM</sub>   | 35    | V    |
| Reverse voltage   |                                  | V <sub>R</sub>     | 25    | V    |
| Peak forward surge current  | t <sub>p</sub> = 1 μs            | I <sub>FSM</sub>   | 2     | A    |
| Repetitive peak forward current   |                                  | I <sub>FRM</sub>   | 500   | mA   |
| Forward continuous current  |                                  | I <sub>F</sub>     | 300   | mA   |
| Average forward current   | V <sub>R</sub> = 0               | I <sub>F(AV)</sub> | 150   | mA   |
| Power dissipation   | I = 4 mm, T <sub>L</sub> = 45 °C | P <sub>tot</sub>   | 440   | mW   |
|   | I = 4 mm, T <sub>L</sub> ≤ 25 °C | P <sub>tot</sub>   | 500   | mW   |

| THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                                     |                   |             |      |
|--|-------------------------------------|-------------------|-------------|------|
| PARAMETER  | TEST CONDITION                      | SYMBOL            | VALUE       | UNIT |
| Thermal resistance junction to ambient air                                     | I = 4 mm, T <sub>L</sub> = constant | R <sub>thJA</sub> | 350         | K/W  |
| Junction temperature   |                                     | T <sub>j</sub>    | 175         | °C   |
| Storage temperature range  |                                     | T <sub>stg</sub>  | -65 to +175 | °C   |

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |  |            |      |      |      |               |
|--|--|------------|------|------|------|---------------|
| PARAMETER  | TEST CONDITION   | SYMBOL     | MIN. | TYP. | MAX. | UNIT          |
| Forward voltage  | $I_F = 30\text{ mA}$   | $V_F$      |      | 0.88 | 1    | V             |
| Reverse current  | $V_R = 25\text{ V}$  | $I_R$      |      | 9    | 100  | nA            |
|  | $V_R = 25\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$                                     | $I_R$      |      |      | 100  | $\mu\text{A}$ |
| Breakdown voltage  | $I_R = 5\text{ }\mu\text{A}, t_p/T = 0.01,$<br>$t_p = 0.3\text{ ms}$                       | $V_{(BR)}$ | 35   |      |      | V             |
| Diode capacitance  | $V_R = 0\text{ V}, f = 1\text{ MHz},$<br>$V_{HF} = 50\text{ mV}$                           | $C_D$      |      |      | 4    | pF            |
| Reverse recovery time  | $I_F = I_R = 10\text{ mA},$<br>$i_R = 1\text{ mA}$   | $t_{rr}$   |      |      | 4    | ns            |
|  | $I_F = 10\text{ mA}, V_R = 6\text{ V},$<br>$i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$ |            |      |      | 2    |               |

**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

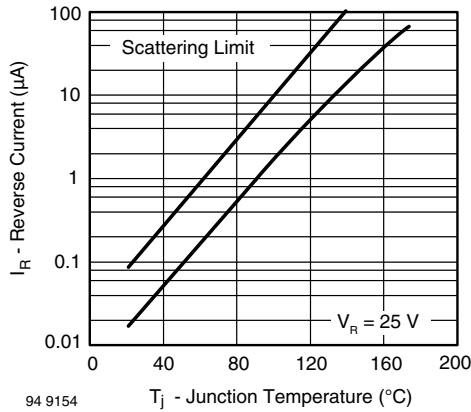


Fig. 1 - Reverse Current vs. Junction Temperature

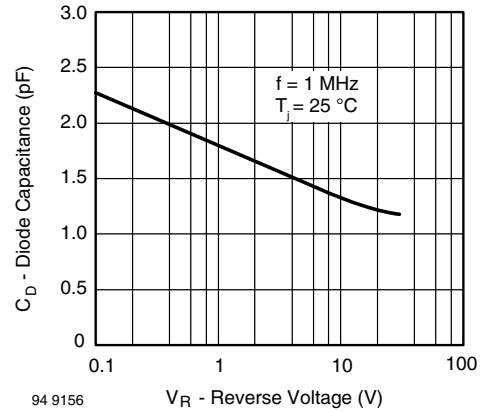


Fig. 3 - Diode Capacitance vs. Reverse Voltage

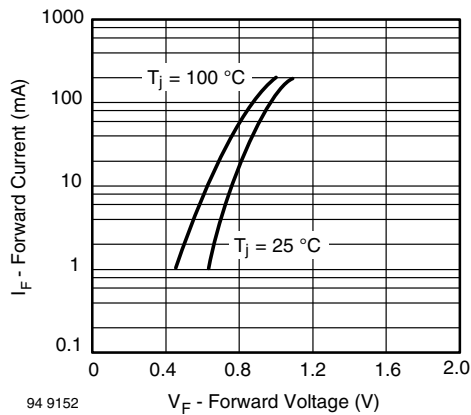
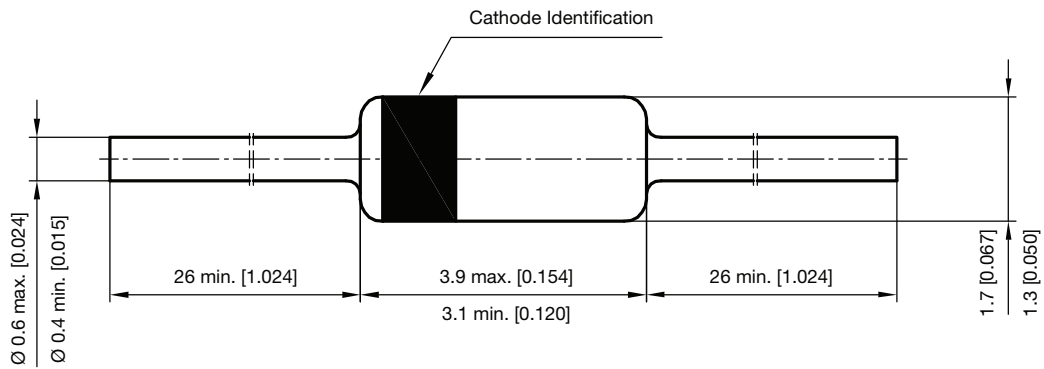


Fig. 2 - Forward Current vs. Forward Voltage



**PACKAGE DIMENSIONS** in millimeters (inches): **DO-35 (DO-204AH)**



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