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## SILICON RATIO DETECTOR DIODE

Silicon planar epitaxial diode in DO-35 envelope, intended for use in ratio detector circuits. Due to small spreads of forward voltage at low currents and of junction capacitance, the diodes can be used as matched pairs.

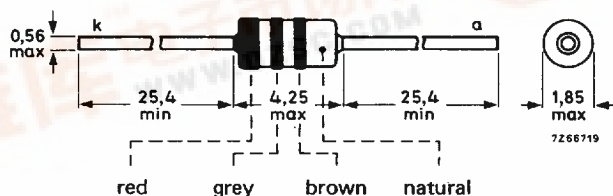
## QUICK REFERENCE DATA

|                                 |           |            |        |
|---------------------------------|-----------|------------|--------|
| Continuous reverse voltage      | $V_R$     | max.       | 50 V   |
| Forward current (d.c.)          | $I_F$     | max.       | 200 mA |
| Repetitive peak forward current | $I_{FRM}$ | max.       | 450 mA |
| Forward voltage                 | $V_F$     | 360 to 420 | mV     |
| Diode capacitance               | $C_d$     | <          | 1,2 pF |
| Junction temperature            | $T_j$     | max.       | 200 °C |

## MECHANICAL DATA

Dimensions in mm

Fig. 1 DO-35 (SOD-27).



Diodes may be either type-branded or colour-coded.

## RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

|                                 |           |                |         |
|---------------------------------|-----------|----------------|---------|
| Continuous reverse voltage      | $V_R$     | max.           | 50 V    |
| Forward current (d.c.)          | $I_F$     | max.           | 200 mA  |
| Repetitive peak forward current | $I_{FRM}$ | max.           | 450 mA  |
| Storage temperature             | $T_{stg}$ | -65 to +200 °C |         |
| Junction temperature            | $T_j$     | max.           | +200 °C |

## THERMAL RESISTANCE

from junction to ambient in free air

$$R_{th\ j-a} = 0,6 \text{ K/mW}$$

## CHARACTERISTICS

$T_j = 25 \text{ °C}$  unless otherwise specified

Forward voltage

$$I_F = 10 \mu\text{A}$$

$$V_F = 360 \text{ to } 420 \text{ mV}$$

$$I_F = 100 \text{ mA}$$

$$V_F < 1000 \text{ mV}$$

Reverse current

$$V_R = 50 \text{ V}$$

$$I_R < 50 \text{ nA}$$

Diode capacitance

$$V_R = 0, f = 1 \text{ MHz}$$

$$C_d < 1,2 \text{ pF}$$

## Dynamic characteristics

|                    |          |       |     |
|--------------------|----------|-------|-----|
| Input peak voltage | $V_{im}$ | 3     | V   |
| Frequency          | $f_i$    | 10,7  | MHz |
| Load capacitor     | $C_L$    | 330   | pF  |
| Load resistor      | $R_L$    | 0,033 | MΩ  |
| Efficiency         | $\eta$   | 85    | %   |
| Diode resistance   | $r_D$    | 12    | kΩ  |

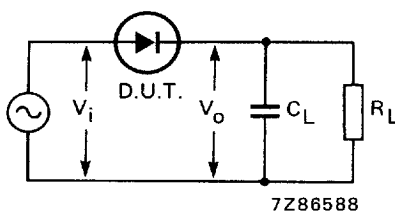


Fig. 2 Test circuit.