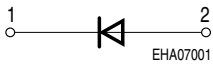
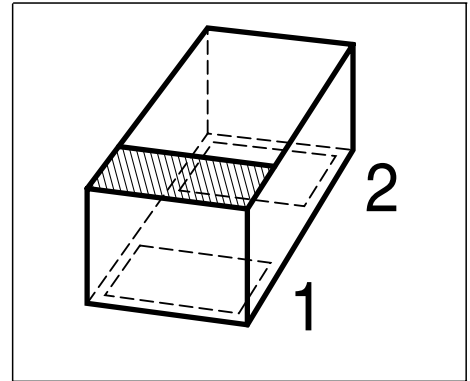


**Silicon PIN Diode**

Preliminary data

- PIN diode for high speed switching of RF signals
- Very low forward resistance (low insertion loss)
- Very low capacitance (high isolation)
- small inductance
- For frequencies up to 3GHz
- Ultra small leadless package



| Type       | Marking | Pin Configuration |       |   | Package |
|------------|---------|-------------------|-------|---|---------|
| BAR 63-02L | G       | 1 = C             | 2 = A | - | TSLP-2  |

**Maximum Ratings**

| Parameter                                     | Symbol           | Value       | Unit |
|---|------------------|-------------|------|
| Diode reverse voltage                         | $V_R$            | 50          | V    |
| Forward current                               | $I_F$            | 100         | mA   |
| Total power dissipation<br>$T_S = \text{tbd}$ | $P_{\text{tot}}$ | tbd         | mW   |
| Operating temperature range                   | $T_{\text{op}}$  | -55 ... 125 | °C   |
| Storage temperature                           | $T_{\text{stg}}$ | -55 ... 150 |      |

**Thermal Resistance**

| Parameter                        | Symbol            | Value | Unit |
|----------------------------------|-------------------|-------|------|
| Junction - ambient <sup>1)</sup> | $R_{\text{thJA}}$ | tbd   | K/W  |
| Junction - soldering point       | $R_{\text{thJS}}$ | tbd   |      |

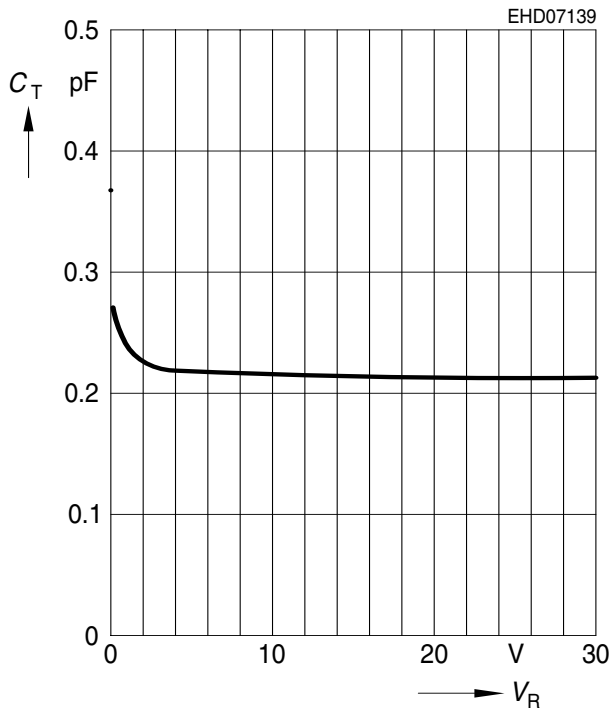
<sup>1</sup>Package mounted on alumina 15mm x 16.7mm x 0.7mm

**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

| Parameter   | Symbol      | Values |             |          | Unit     |
|---|-------------|--------|-------------|----------|----------|
|   |             | min.   | typ.        | max.     |          |
| <b>DC Characteristics</b>   |             |        |             |          |          |
| Breakdown voltage<br>$I_{(BR)} = 5 \mu\text{A}$   | $V_{(BR)}$  | 50     | -           | -        | V        |
| Reverse current<br>$V_R = 35 \text{ V}$   | $I_R$       | -      | -           | 10       | nA       |
| Forward voltage<br>$I_F = 100 \text{ mA}$   | $V_F$       | -      | 0.95        | 1.2      | V        |
| <b>AC Characteristics</b>   |             |        |             |          |          |
| Diode capacitance<br>$V_R = 0 \text{ V}, f = 100 \text{ MHz}$<br>$V_R = 5 \text{ V}, f = 1 \text{ MHz}$       | $C_T$       | -<br>- | 0.3<br>0.21 | -<br>0.3 | pF       |
| Forward resistance<br>$I_F = 5 \text{ mA}, f = 100 \text{ MHz}$<br>$I_F = 10 \text{ mA}, f = 100 \text{ MHz}$ | $r_f$       | -<br>- | 1.2<br>1    | 2<br>-   | $\Omega$ |
| Charge carrier life time<br>$I_F = 10 \text{ mA}, I_R = 6 \text{ mA}, I_R = 3 \text{ mA}$                     | $\tau_{rr}$ | -      | 75          | -        | ns       |
| Case capacitance<br>$f = 1 \text{ MHz}$   | $C_C$       | -      | 0.05        | -        | pF       |
| Series inductance   | $L_S$       | -      | 0.6         | -        | nH       |

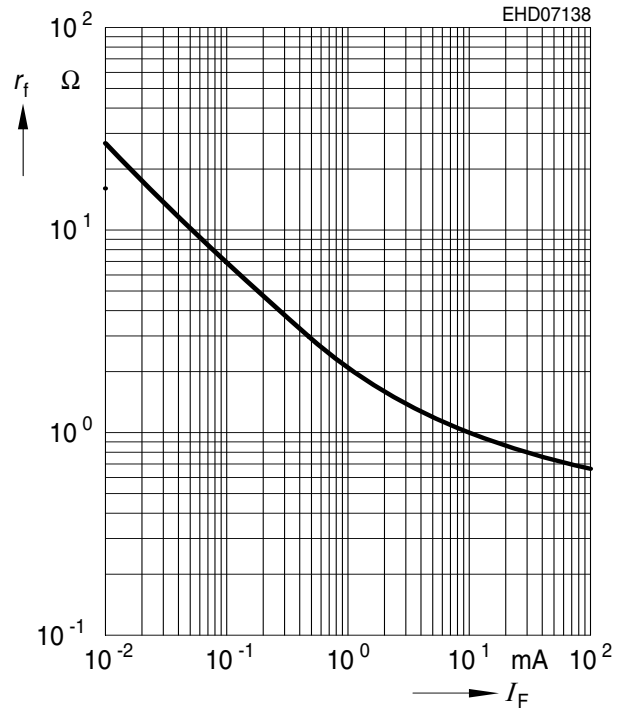
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



**Forward resistance  $r_f = f(I_F)$**

$f = 100\text{MHz}$



**Forward current  $I_F = f(V_F)$**

$T_A = 25^\circ\text{C}$

