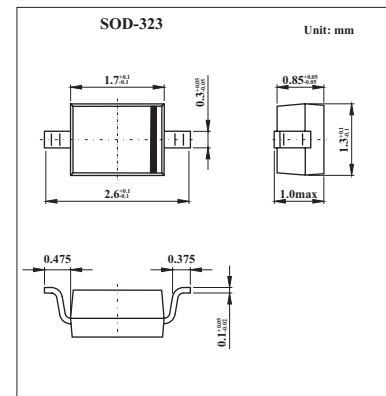


## Silicon PIN diode

## BAP65-03

## ■ Features

- High voltage, current controlled
- RF resistor for RF switches
- Low diode capacitance
- Low diode forward resistance (low loss)
- Very low series inductance.



## ■ Absolute Maximum Ratings Ta = 25°C

| Parameter                                           | Symbol              | Min | Max  | Unit |
|-----------------------------------------------------|---------------------|-----|------|------|
| continuous reverse voltage                          | V <sub>R</sub>      |     | 30   | V    |
| continuous forward current                          | I <sub>F</sub>      |     | 100  | mA   |
| total power dissipation Ts ≤ 90 °C                  | P <sub>tot</sub>    |     | 500  | mW   |
| storage temperature                                 | T <sub>stg</sub>    | -65 | +150 | °C   |
| junction temperature                                | T <sub>j</sub>      | -65 | +150 | °C   |
| thermal resistance from junction to soldering point | R <sub>th j-s</sub> |     | 120  | K/W  |

## BAP65-03

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

| Parameter                | Symbol       | Conditions                                                                                                                | Typ   | Max  | Unit          |
|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------|-------|------|---------------|
| forward voltage          | $V_F$        | $I_F = 50\text{ mA}$                                                                                                      | 0.95  | 1.1  | V             |
| reverse leakage current  | $I_R$        | $V_R = 20\text{ V}$                                                                                                       |       | 20   | nA            |
| diode capacitance        | $C_d$        | $V_R = 0; f = 1\text{ MHz}$                                                                                               | 0.65  |      | pF            |
|                          |              | $V_R = 1\text{ V}; f = 1\text{ MHz}$                                                                                      | 0.55  | 0.9  |               |
|                          |              | $V_R = 3\text{ V}; f = 1\text{ MHz}$                                                                                      | 0.5   | 0.8  |               |
|                          |              | $V_R = 20\text{ V}; f = 1\text{ MHz}$                                                                                     | 0.375 |      |               |
| diode forward resistance | $r_D$        | $I_F = 1\text{ mA}; f = 100\text{ MHz}; \text{note 1}$                                                                    | 1     |      | $\Omega$      |
|                          |              | $I_F = 5\text{ mA}; f = 100\text{ MHz}; \text{note 1}$                                                                    | 0.65  | 0.95 |               |
|                          |              | $I_F = 10\text{ mA}; f = 100\text{ MHz}; \text{note 1}$                                                                   | 0.56  | 0.9  |               |
|                          |              | $I_F = 100\text{ mA}; f = 100\text{ MHz}$                                                                                 | 0.35  |      |               |
| isolation                | $ s_{21} ^2$ | $V_R = 0; f = 900\text{ MHz}$                                                                                             | 10.2  |      | dB            |
|                          |              | $V_R = 0; f = 1800\text{ MHz}$                                                                                            | 5.8   |      |               |
|                          |              | $V_R = 0; f = 2450\text{ MHz}$                                                                                            | 4.1   |      |               |
| insertion loss           | $ s_{21} ^2$ | $V_R = 1; f = 900\text{ MHz}$                                                                                             | 0.1   |      | dB            |
|                          |              | $V_R = 1; f = 1800\text{ MHz}$                                                                                            | 0.14  |      |               |
|                          |              | $V_R = 1; f = 2450\text{ MHz}$                                                                                            | 0.18  |      |               |
| insertion loss           | $ s_{21} ^2$ | $V_R = 5; f = 900\text{ MHz}$                                                                                             | 0.06  |      | dB            |
|                          |              | $V_R = 5; f = 1800\text{ MHz}$                                                                                            | 0.1   |      |               |
|                          |              | $V_R = 5; f = 2450\text{ MHz}$                                                                                            | 0.14  |      |               |
| insertion loss           | $ s_{21} ^2$ | $V_R = 10; f = 900\text{ MHz}$                                                                                            | 0.06  |      | dB            |
|                          |              | $V_R = 10; f = 1800\text{ MHz}$                                                                                           | 0.1   |      |               |
|                          |              | $V_R = 10; f = 2450\text{ MHz}$                                                                                           | 0.13  |      |               |
| insertion loss           | $ s_{21} ^2$ | $V_R = 100; f = 900\text{ MHz}$                                                                                           | 0.05  |      | dB            |
|                          |              | $V_R = 100; f = 1800\text{ MHz}$                                                                                          | 0.1   |      |               |
|                          |              | $V_R = 100; f = 2450\text{ MHz}$                                                                                          | 0.14  |      |               |
| charge carrier life time | $\tau_L$     | when switched from $I_F = 10\text{ mA}$ to $I_R = 6\text{ mA}$ ;<br>$R_L = 100\ \Omega$ ; measured at $I_R = 3\text{ mA}$ | 0.17  |      | $\mu\text{s}$ |
| series inductance        | $L_s$        | $I_F = 100\text{ mA}; f = 100\text{ MHz}$                                                                                 | 1.5   |      | nH            |

Note

1. Guaranteed on AQL basis: inspection level S4, AQL 1.0.

## ■ Marking

|         |    |
|---------|----|
| Marking | D3 |
|---------|----|