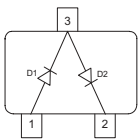
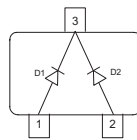
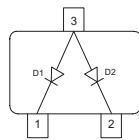
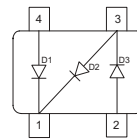


Silicon PIN Diode

- RF switch, RF attenuator for frequencies above 10 MHz
- Low distortion faktor
- Long-term stability of electrical characteristics
- Pb-free (RoHS compliant) package ¹⁾
- Qualified according AEC Q101


BAR14-1

BAR15-1

BAR16-1

BAR61


| Type | Package | Configuration | L_S (nH) | Marking |
|---------|---------|----------------|------------|---------|
| BAR14-1 | SOT23 | series | 1.8 | L7s |
| BAR15-1 | SOT23 | common cathode | 1.8 | L8s |
| BAR16-1 | SOT23 | common anode | 1.8 | L9s |
| BAR61 | SOT143 | PI element | 2 | 61s |

Maximum Ratings at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Value | Unit |
|--|-----------|-------------|------|
| Diode reverse voltage | V_R | 100 | V |
| Forward current | I_F | 140 | mA |
| Total power dissipation $T_S \leq 65^\circ\text{C}$ | P_{tot} | 250 | mW |
| Junction temperature | T_j | 150 | °C |
| Operating temperature range | T_{op} | -55 ... 125 | |
| Storage temperature | T_{stg} | -55 ... 150 | |

Thermal Resistance

| Parameter | Symbol | Value | Unit |
|--|------------|------------|------|
| Junction - soldering point ²⁾ | R_{thJS} | ≤ 340 | K/W |

¹⁾Pb-containing package may be available upon special request

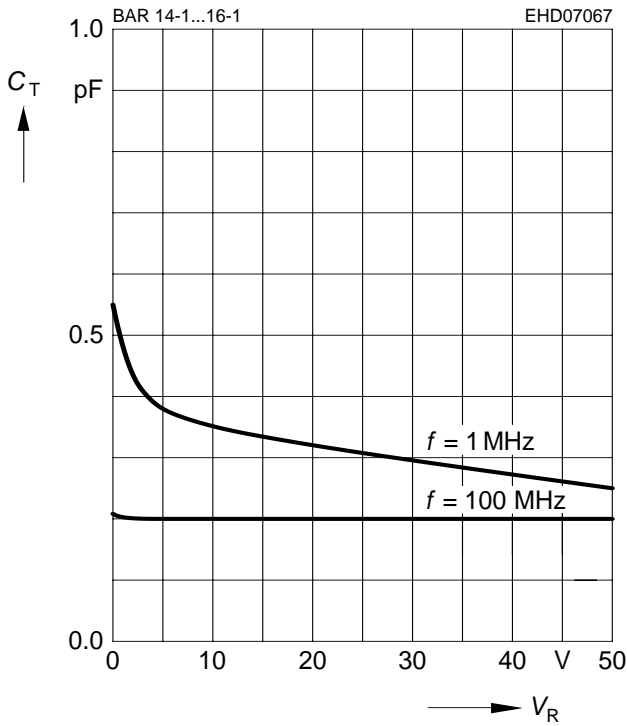
²⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

| Parameter | Symbol | Values | | | Unit |
|--|-------------|--------|--------------------------|-----------------------|---------------|
| | | min. | typ. | max. | |
| DC Characteristics | | | | | |
| Reverse current $V_R = 50\text{ V}$ $V_R = 100\text{ V}$ | I_R | - | - | 100 1000 | nA |
| Forward voltage $I_F = 100\text{ mA}$ | V_F | - | 1.05 | 1.25 | V |
| AC Characteristics | | | | | |
| Diode capacitance $V_R = 0\text{ V}, f = 100\text{ MHz}$ $V_R = 50\text{ V}, f = 1\text{ MHz}$ | C_T | - | 0.2 0.25 | 0.5 0.5 | pF |
| Zero bias conductance $V_R = 0\text{ V}, f = 100\text{ MHz}$ | g_P | - | 50 | 100 | μS |
| Forward resistance $I_F = 0.01\text{ mA}, f = 100\text{ MHz}$ $I_F = 0.1\text{ mA}, f = 100\text{ MHz}$ $I_F = 1\text{ mA}, f = 100\text{ MHz}$ $I_F = 10\text{ mA}, f = 100\text{ MHz}$ | r_f | - | 2600 300 35 5.5 | 4200 - 85 12 | Ω |
| Charge carrier life time $I_F = 10\text{ mA}, I_R = 6\text{ mA}$, measured at $I_R = 3\text{ mA}$, $R_L = 100\ \Omega$ | τ_{rr} | 700 | 1000 | - | ns |
| I-region width | W_I | - | 146 | - | μm |

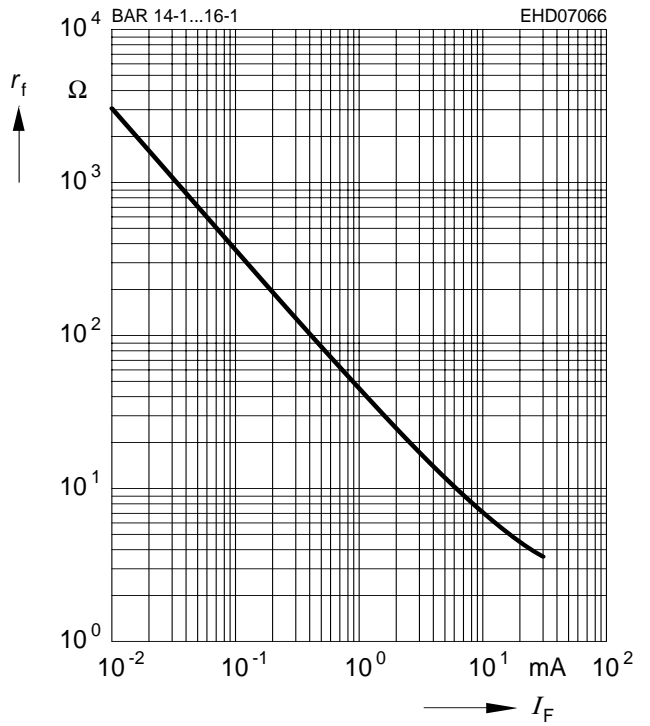
Diode capacitance $C_T = f(V_R)$

$f =$ Parameter



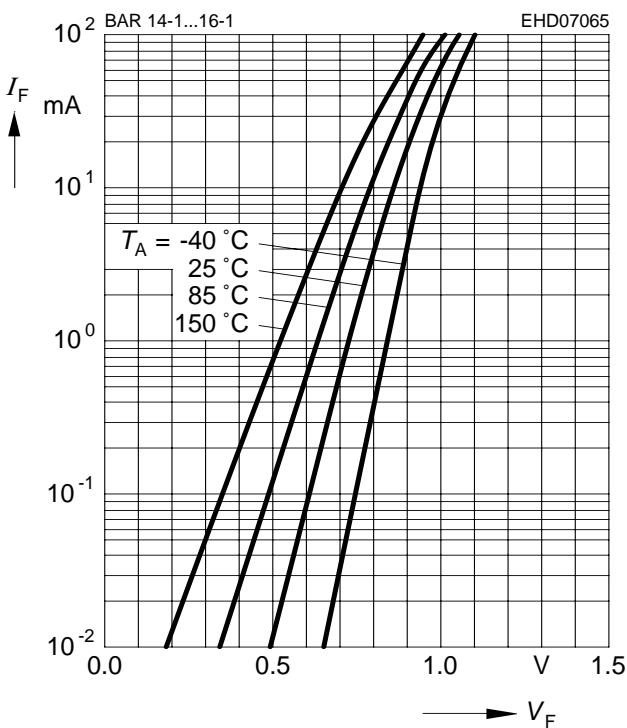
Forward resistance $r_f = f(I_F)$

$f = 100$ MHz



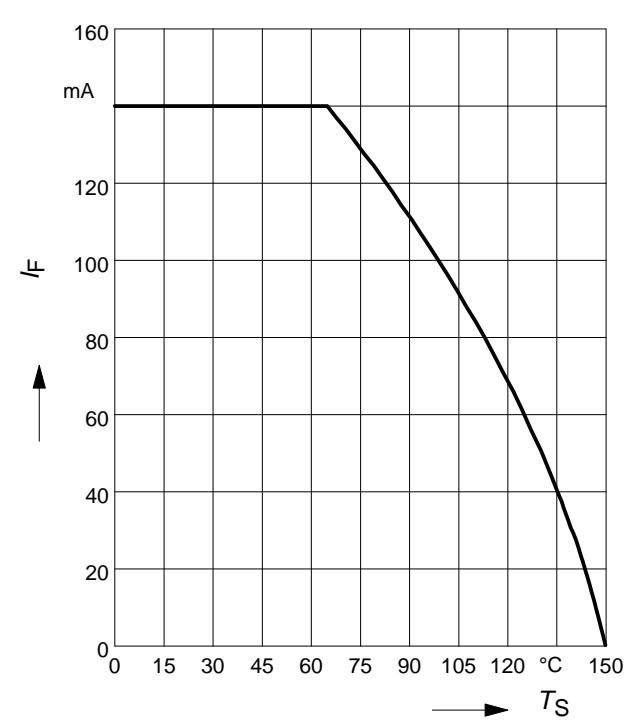
Forward current $I_F = f(V_F)$

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

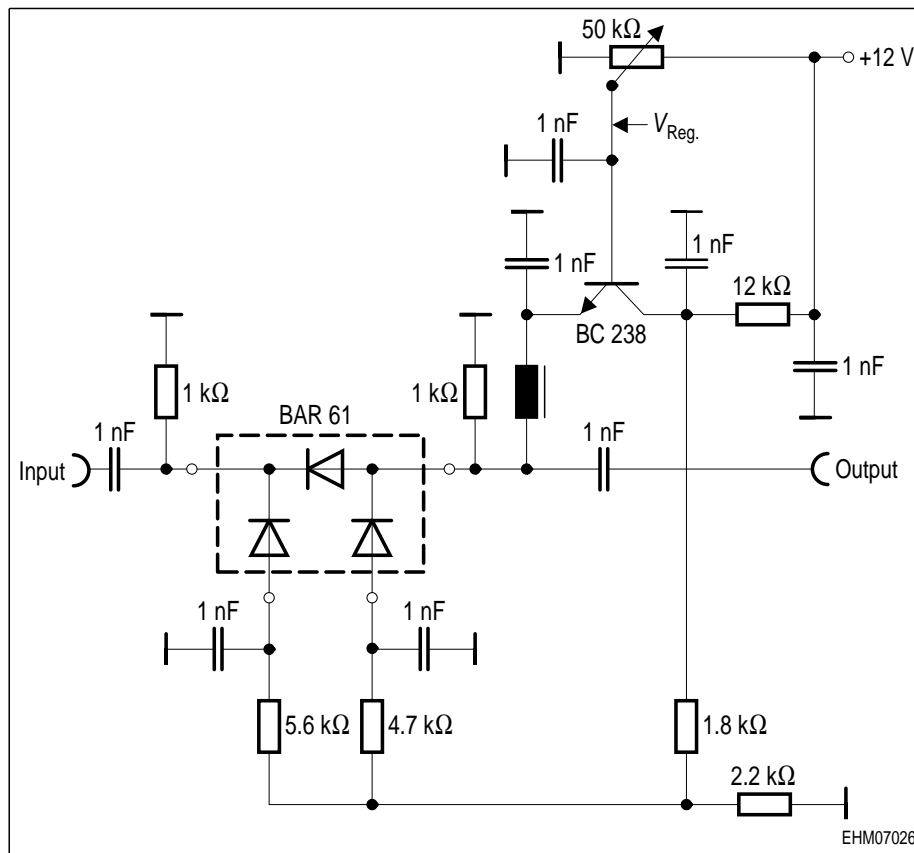


Forward current $I_F = f(T_S)$

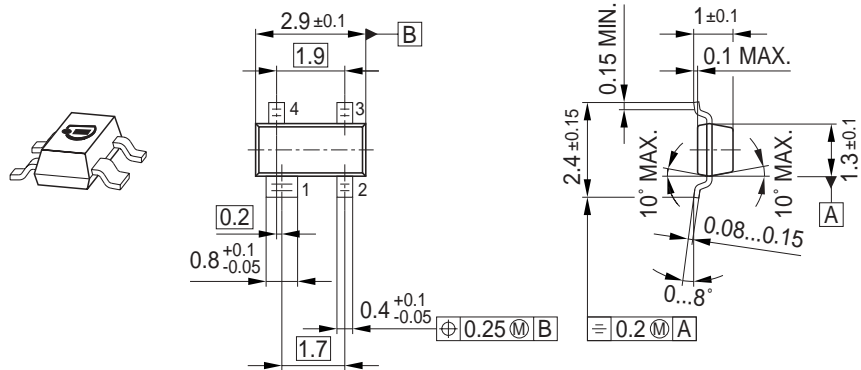
BAR14-1, BAR15-1, BAR16-1



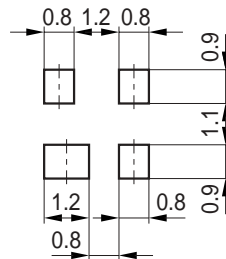
Application circuit for attenuation networks with diode BAR61



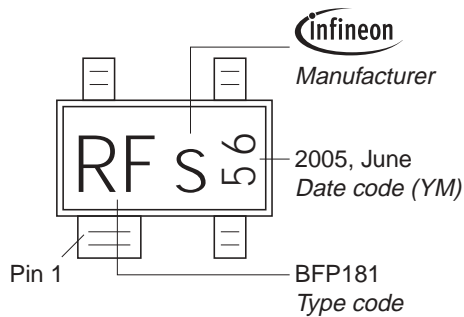
Package Outline



Foot Print



Marking Layout (Example)

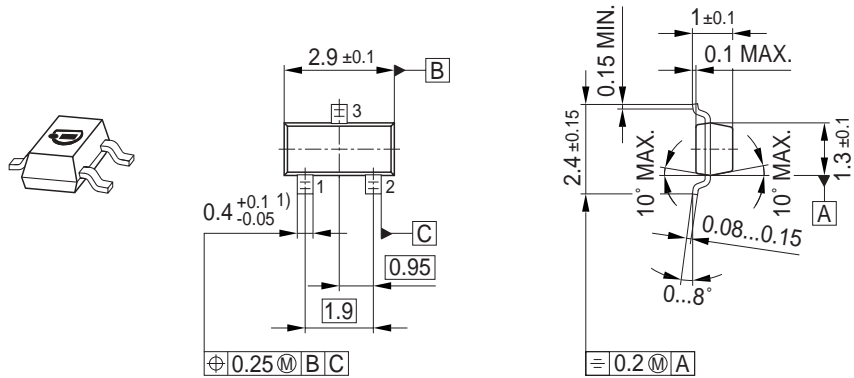


Standard Packing

Reel $\varnothing 180$ mm = 3.000 Pieces/Reel
 Reel $\varnothing 330$ mm = 10.000 Pieces/Reel

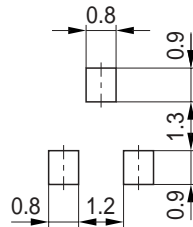


Package Outline

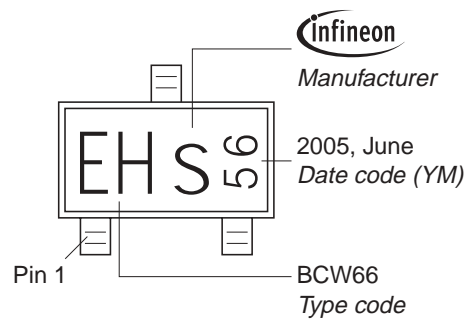


1) Lead width can be 0.6 max. in dambar area

Foot Print

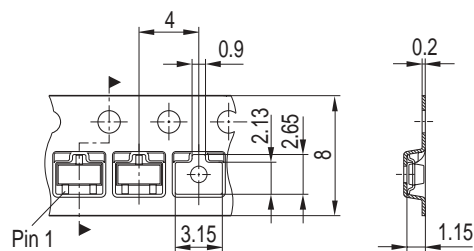


Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



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