

Silicon Schottky Diode

- For mixer applications in VHF/UHF range
- For high-speed switching application
- Pb-free (RoHS compliant) package


BAT17

**BAT17-04
BAT17-04W**

**BAT17-05
BAT17-05W**

BAT17-06W

BAT17-07


ESD (Electrostatic discharge) sensitive device, observe handling precaution!

| Type | Package | Configuration | L_S (nH) | Marking |
|-----------|---------|----------------|------------|---------|
| BAT17 | SOT23 | single | 1.8 | 53s |
| BAT17-04 | SOT23 | series | 1.8 | 54s |
| BAT17-04W | SOT323 | series | 1.4 | 54s |
| BAT17-05 | SOT23 | common cathode | 1.8 | 55s |
| BAT17-05W | SOT323 | common cathode | 1.4 | 55s |
| BAT17-06W | SOT323 | common anode | 1.4 | 56s |
| BAT17-07 | SOT143 | parallel pair | 2 | 57s |

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

| Parameter | Symbol | Value | Unit |
|---|------------------|-------------|------------------|
| Diode reverse voltage | V_R | 4 | V |
| Forward current | I_F | 130 | mA |
| Total power dissipation | P_{tot} | | mW |
| BAT17, $T_S \leq 77^\circ\text{C}$ | | 150 | |
| BAT17-04, $T_S \leq 61^\circ\text{C}$ | | 150 | |
| BAT17-05, $T_S \leq 46^\circ\text{C}$ | | 150 | |
| BAT17-04W, -05W, -6W, $T_S \leq 92^\circ\text{C}$ | | 150 | |
| BAT17-07, $T_S \leq 60^\circ\text{C}$ | | 150 | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Operating temperature range | T_{op} | -55 ... 125 | |
| Storage temperature | T_{stg} | -55 ... 150 | |

Thermal Resistance

| Parameter | Symbol | Value | Unit |
|--|-------------------|------------|------|
| Junction - soldering point ¹⁾ | R_{thJS} | | K/W |
| BAT17 | | ≤ 490 | |
| BAT17-04, BAT17-07 | | ≤ 590 | |
| BAT17-05 | | ≤ 690 | |
| BAT17-04W, BAT17-05W, BAT17-06W | | ≤ 390 | |

¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

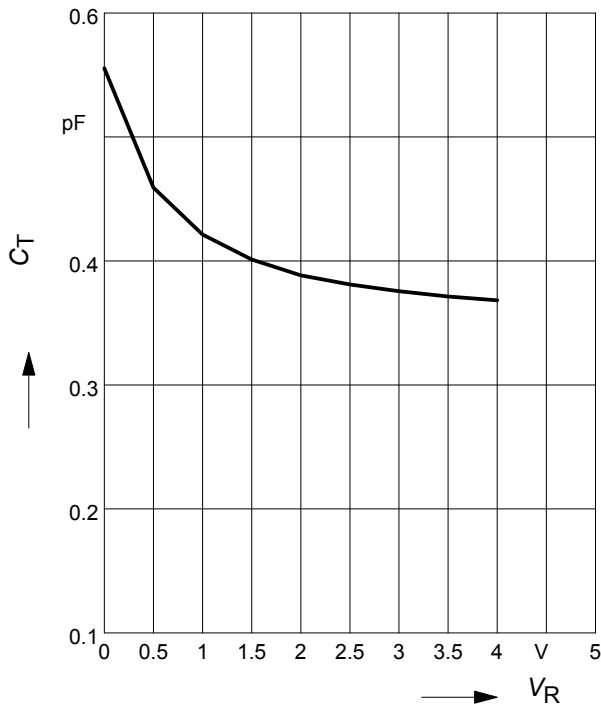
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Values | | | Unit |
|--|--------------|-------------------|-------------------|--------------------|---------------|
| | | min. | typ. | max. | |
| DC Characteristics | | | | | |
| Breakdown voltage $I_{(BR)} = 10 \mu\text{A}$ | $V_{(BR)}$ | 4 | - | - | V |
| Reverse current $V_R = 3 \text{ V}$ $V_R = 4 \text{ V}$ $V_R = 3 \text{ V}, T_A = 60^\circ\text{C}$ | I_R | - | - | 0.25 10 1.25 | μA |
| Forward voltage $I_F = 0.1 \text{ mA}$ $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ | V_F | 200 250 350 | 275 340 425 | 350 450 600 | mV |
| Forward voltage matching ¹⁾ $I_F = 1 \text{ mA}$ | ΔV_F | - | - | 20 | |
| AC Characteristics | | | | | |
| Diode capacitance $V_R = 0, f = 1 \text{ MHz}$ | C_T | 0.4 | 0.55 | 0.75 | pF |
| Differential forward resistance $I_F = 5 \text{ mA}, f = 10 \text{ kHz}$ | R_F | - | 8 | 15 | Ω |

¹⁾ ΔV_F is the difference between lowest and highest V_F in multiple diode component.

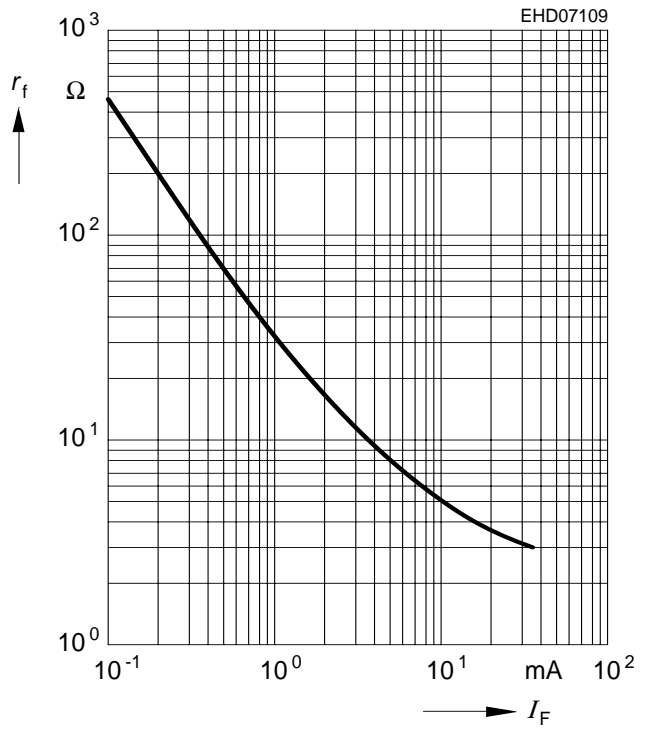
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



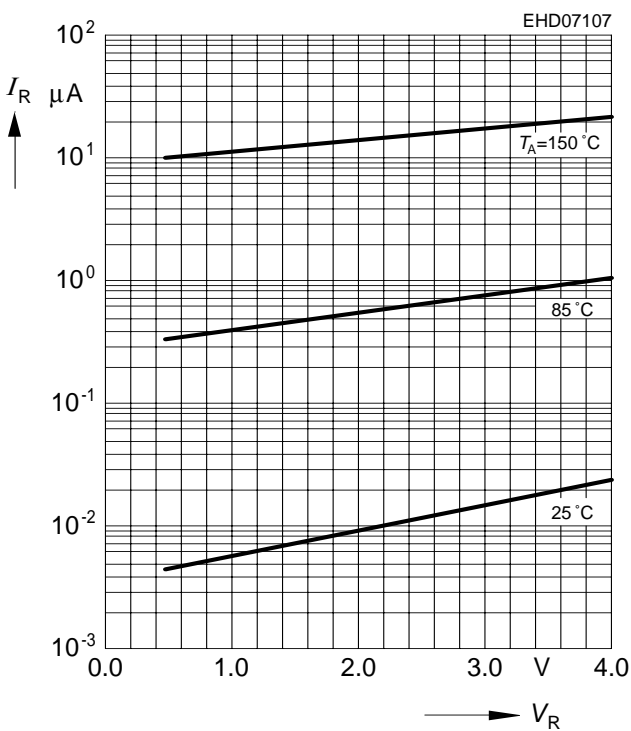
Forward resistance $r_f = f(I_F)$

$f = 10\text{kHz}$



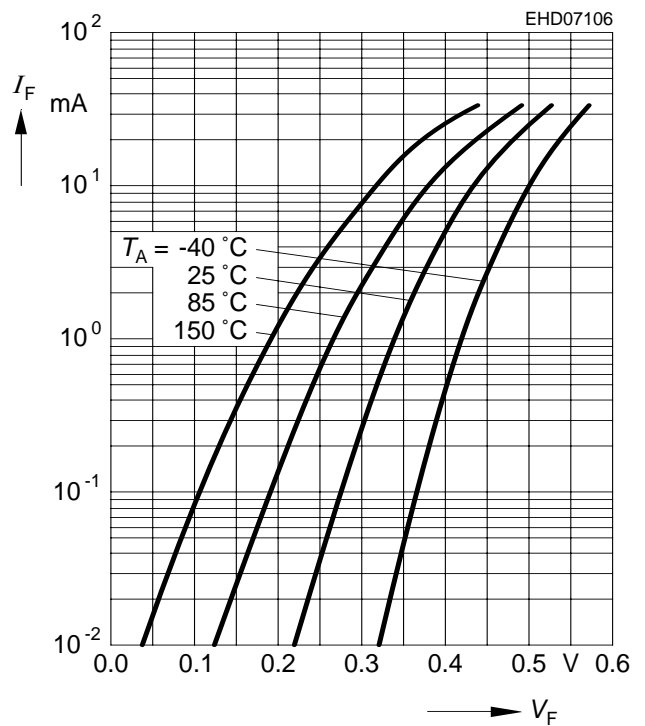
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



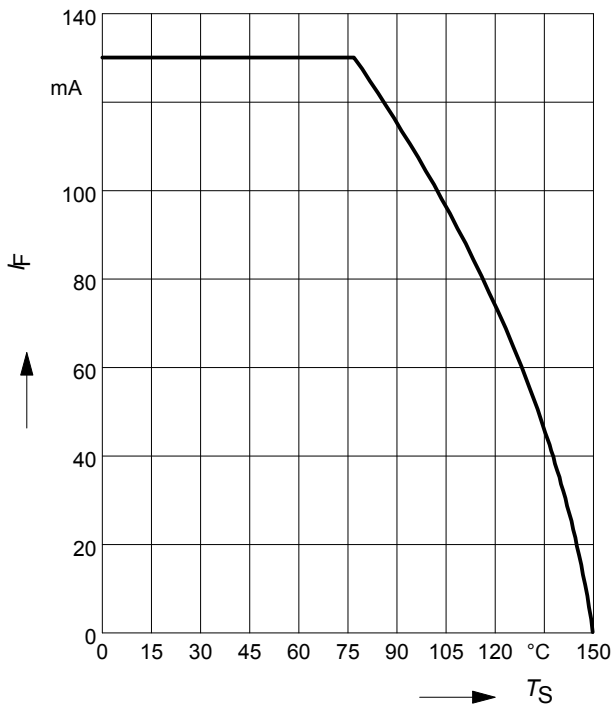
Forward current $I_F = f(V_F)$

$T_A = \text{Parameter}$



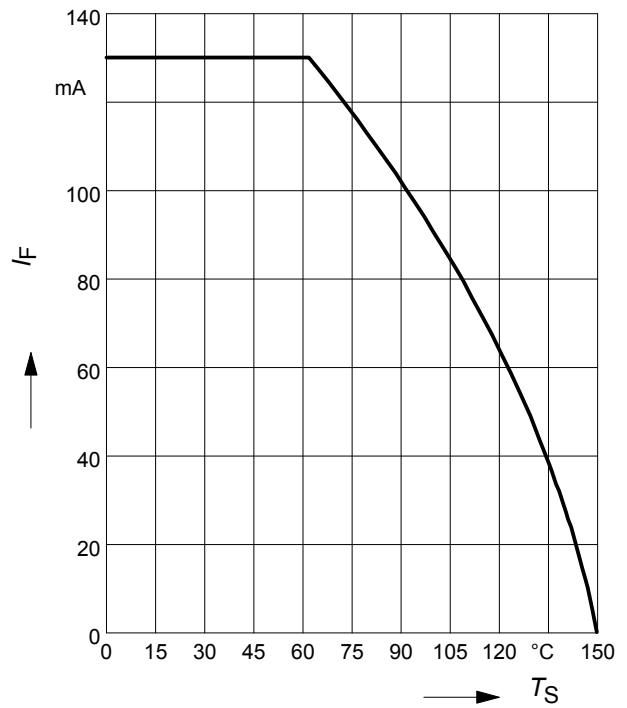
Forward current $I_F = f(T_S)$

BAT17



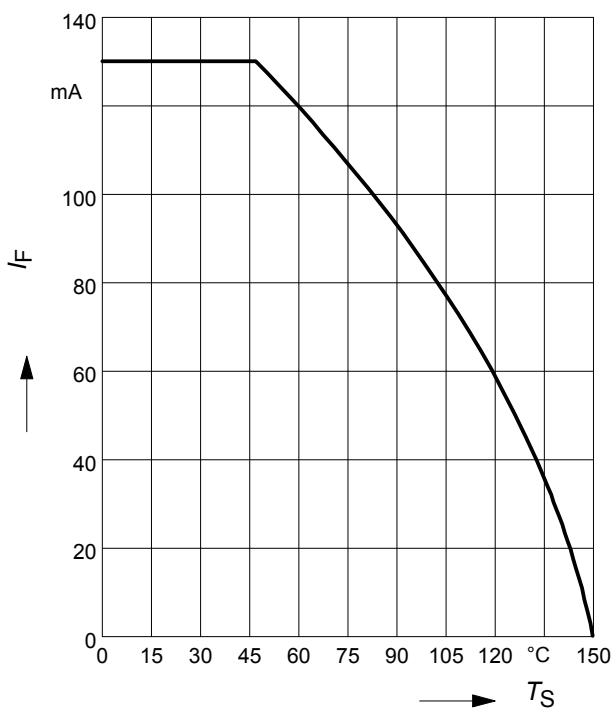
Forward current $I_F = f(T_S)$

BAT17-04, BAT17-07



Forward current $I_F = f(T_S)$

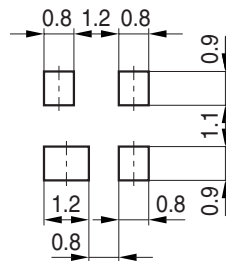
BAT17-05



Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

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

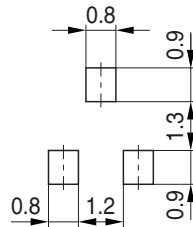


Package Outline



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

Foot Print



Marking Layout (Example)

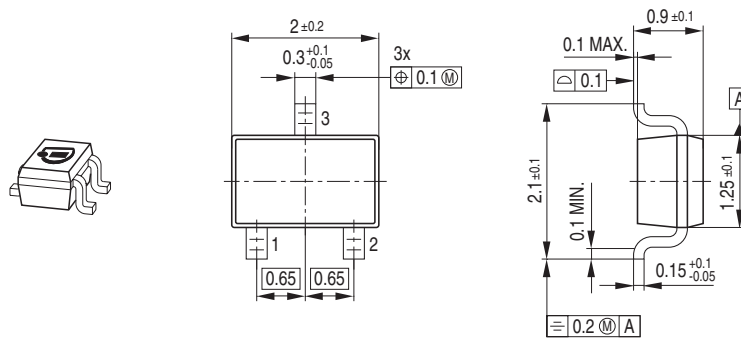


Standard Packing

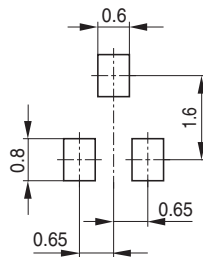
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



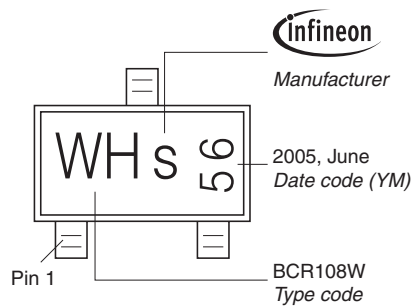
Package Outline



Foot Print

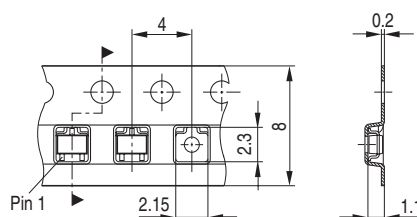


Marking Layout (Example)



Standard Packing

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



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