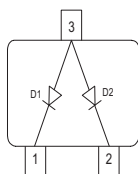
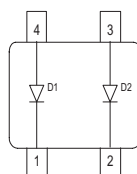
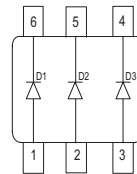


## Silicon Schottky Diodes

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


**BAT68**

**BAT68-04  
BAT68-04W**

**BAT68-06  
BAT68-06W**

**BAT68-07W**

**BAT68-08S**


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

| Type      | Package | Configuration   | $L_S$ (nH) | Marking |
|-----------|---------|-----------------|------------|---------|
| BAT68     | SOT23   | single          | 1.8        | 83s     |
| BAT68-04  | SOT23   | series          | 1.8        | 84s     |
| BAT68-04W | SOT323  | series          | 1.4        | 84s     |
| BAT68-06  | SOT23   | common anode    | 1.8        | 86s     |
| BAT68-06W | SOT323  | common anode    | 1.4        | 86s     |
| BAT68-07W | SOT343  | parallel pair   | 1.6        | 87s     |
| BAT68-08S | SOT363  | parallel triple | 1.4        | 83s     |

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

| Parameter                                                                                                                                                                                                      | Symbol           | Value                    | Unit             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------|------------------|
| Diode reverse voltage                                                                                                                                                                                          | $V_R$            | 8                        | V                |
| Forward current                                                                                                                                                                                                | $I_F$            | 130                      | mA               |
| Total power dissipation<br>BAT68, $T_S \leq 77^\circ\text{C}$<br>BAT68-04, BAT68-06, $T_S \leq 61^\circ\text{C}$<br>BAT68-04W/-06W/-08S, $T_S \leq 92^\circ\text{C}$<br>BAT68-07W, $T_S \leq 89^\circ\text{C}$ | $P_{\text{tot}}$ | 150<br>150<br>150<br>150 | mW               |
| Junction temperature                                                                                                                                                                                           | $T_j$            | 150                      | $^\circ\text{C}$ |
| Storage temperature                                                                                                                                                                                            | $T_{\text{stg}}$ | -55 ... 150              |                  |

**Thermal Resistance**

| Parameter                                                                                                              | Symbol            | Value                                                | Unit |
|------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------|------|
| Junction - soldering point <sup>1)</sup><br>BAT68<br>BAT68-04, BAT68-06<br>BAT68-04W-BAT68-06W, BAT68-08S<br>BAT68-07W | $R_{\text{thJS}}$ | $\leq 490$<br>$\leq 590$<br>$\leq 390$<br>$\leq 410$ | K/W  |

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

| Parameter                                                                             | Symbol            | Values   |            |            | Unit          |
|---------------------------------------------------------------------------------------|-------------------|----------|------------|------------|---------------|
|                                                                                       |                   | min.     | typ.       | max.       |               |
| Breakdown voltage<br>$I_{(\text{BR})} = 10 \mu\text{A}$                               | $V_{(\text{BR})}$ | 8        | -          | -          | V             |
| Reverse current<br>$V_R = 1 \text{ V}$<br>$V_R = 1 \text{ V}, T_A = 60^\circ\text{C}$ | $I_R$             | -<br>-   | -<br>-     | 0.1<br>1.2 | $\mu\text{A}$ |
| Forward voltage<br>$I_F = 1 \text{ mA}$<br>$I_F = 10 \text{ mA}$                      | $V_F$             | -<br>340 | 318<br>390 | 340<br>500 | mV            |

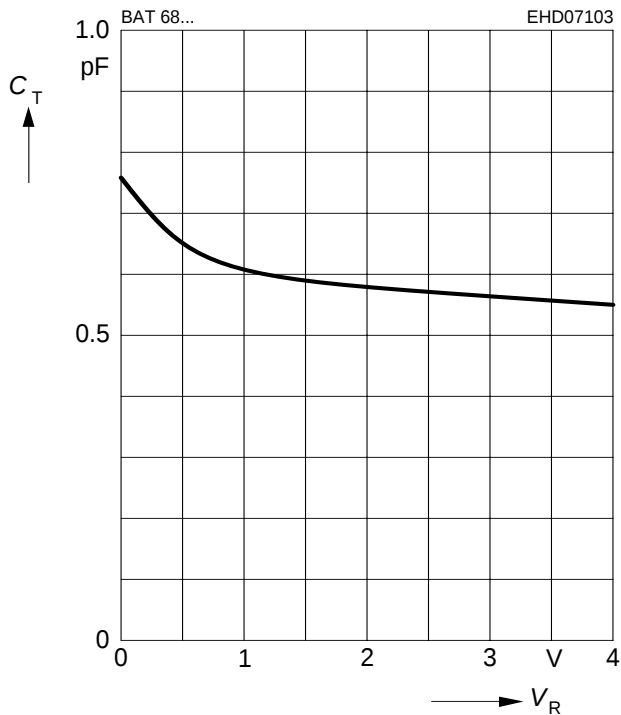
<sup>1)</sup>For calculation of  $R_{\text{thJA}}$  please refer to Application Note Thermal Resistance

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

| Parameter                                                     | Symbol | Values |      |      | Unit     |
|---------------------------------------------------------------|--------|--------|------|------|----------|
|                                                               |        | min.   | typ. | max. |          |
| AC Characteristics                                            |        |        |      |      |          |
| Diode capacitance<br>$V_R = 0$ , $f = 1$ MHz                  | $C_T$  | -      | -    | 1    | pF       |
| Differential forward resistance<br>$I_F = 5$ mA, $f = 10$ kHz | $R_F$  | -      | -    | 10   | $\Omega$ |

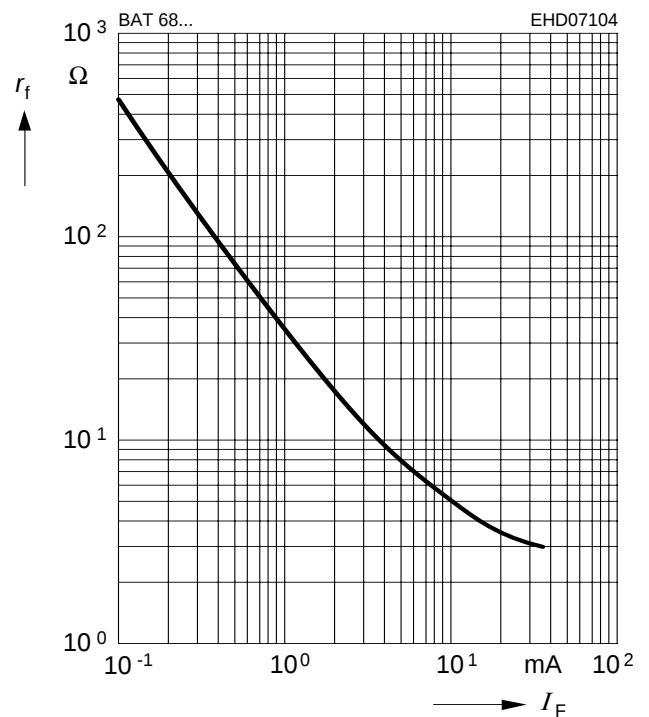
**Diode capacitance**  $C_T = f(V_R)$

$f = 1\text{MHz}$



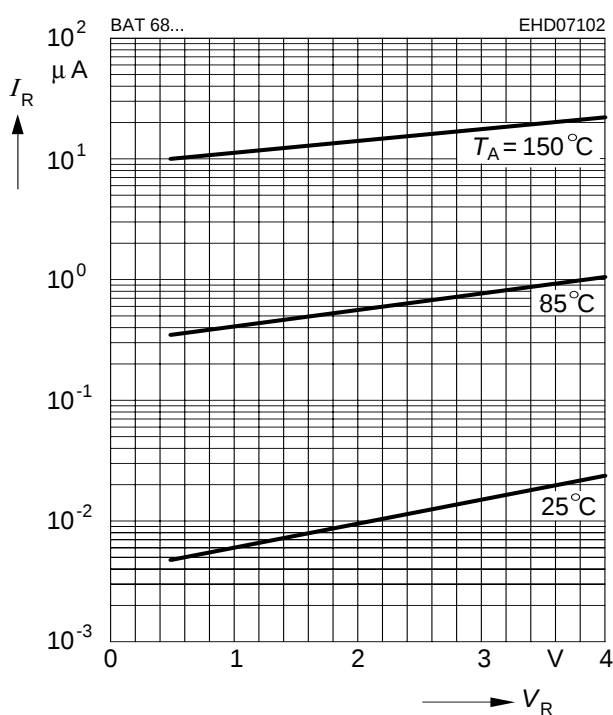
**Differential forward resistance**  $r_f = f(I_F)$

$f = 10\text{kHz}$



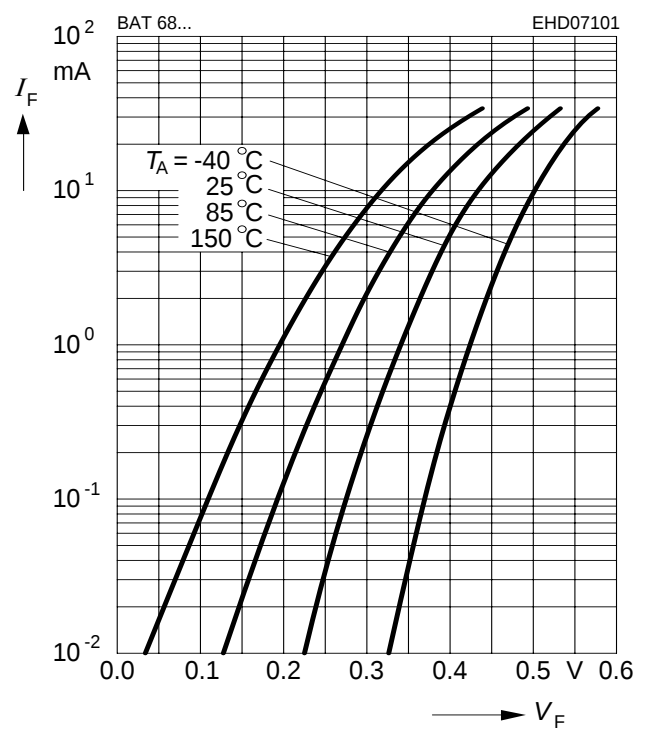
**Reverse current**  $I_R = f(V_R)$

$T_A = \text{Parameter}$



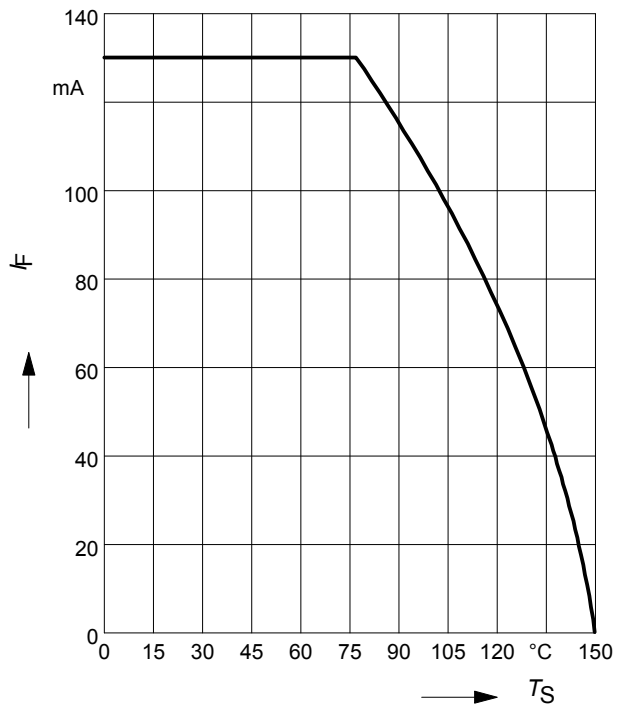
**Forward current**  $I_F = f(V_F)$

$T_A = \text{Parameter}$



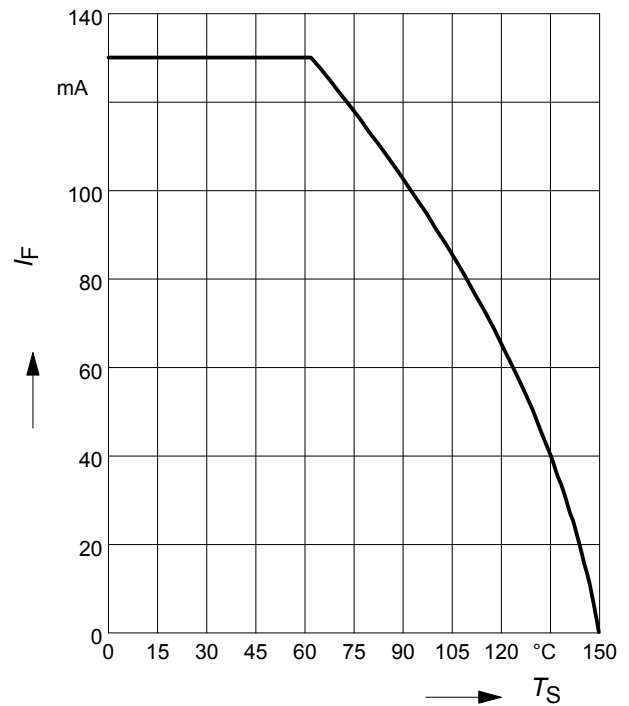
**Forward current  $I_F = f(T_S)$**

BAT68



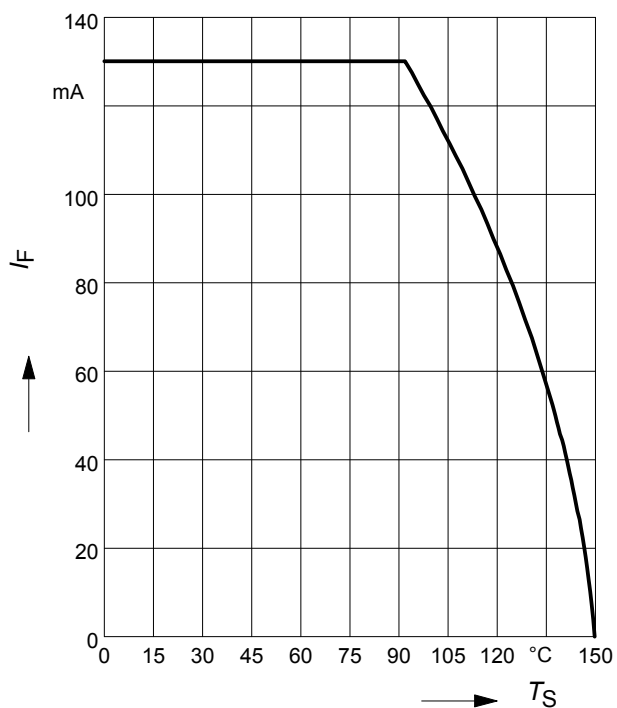
**Forward current  $I_F = f(T_S)$**

BAT68-04, BAT68-06



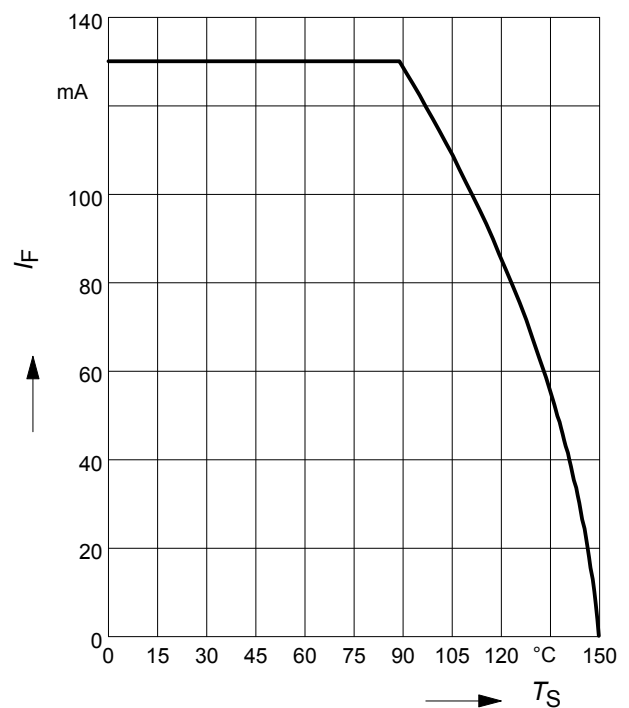
**Forward current  $I_F = f(T_S)$**

BAT68-04W, BAT68-06W, BAT68-08S



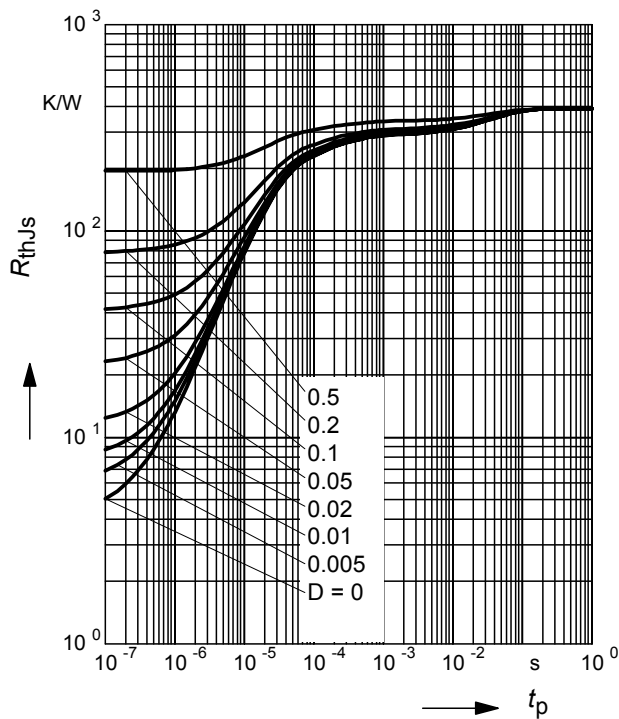
**Forward current  $I_F = f(T_S)$**

BAT68-07W



### Permissible Puls Load $R_{thJS} = f(t_p)$

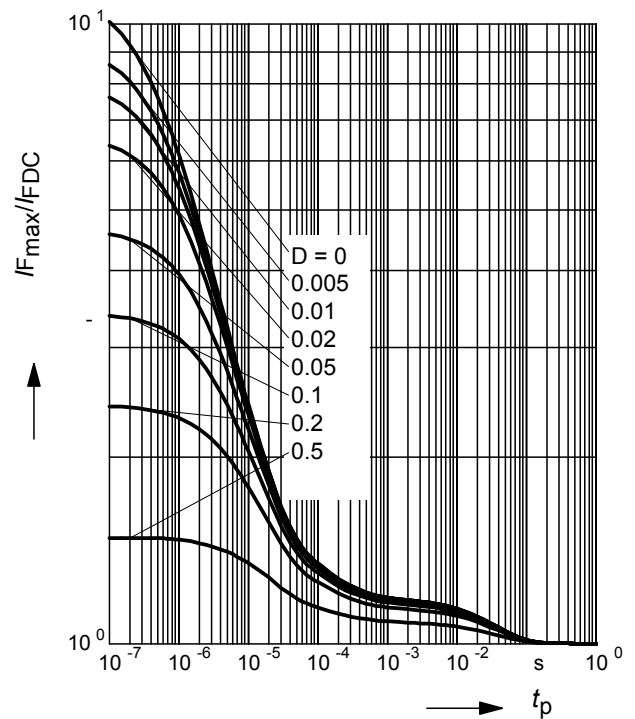
BAT68-04W, BAT68-06W



### Permissible Pulse Load

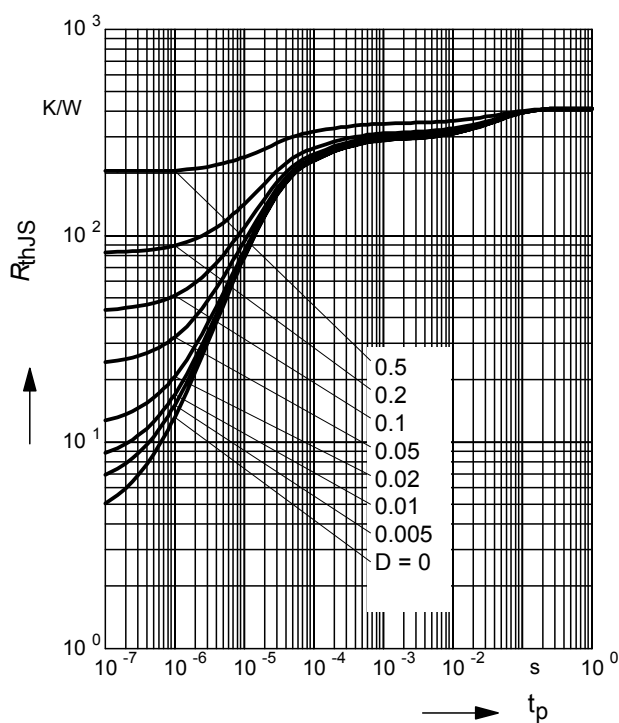
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT68-04W, BAT68-06W



### Permissible Puls Load $R_{thJS} = f(t_p)$

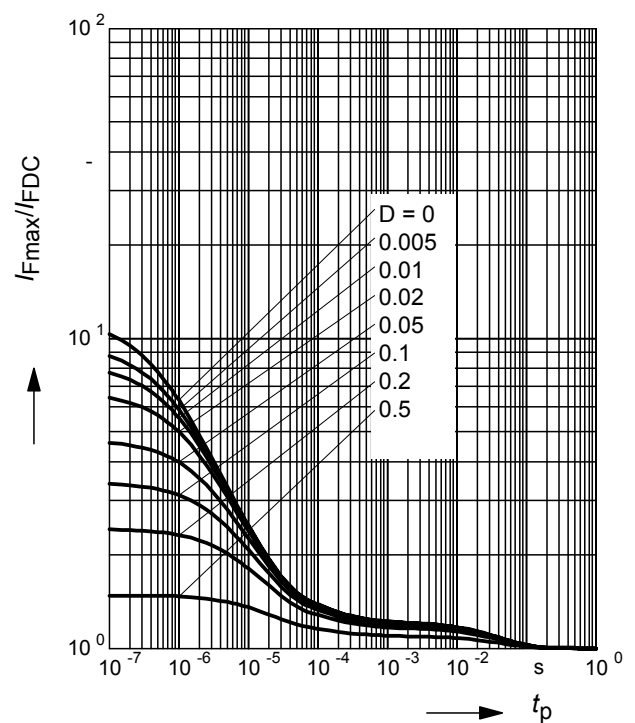
BAT68-07W



### Permissible Pulse Load

$$I_{Fmax}/I_{FDC} = f(t_p)$$

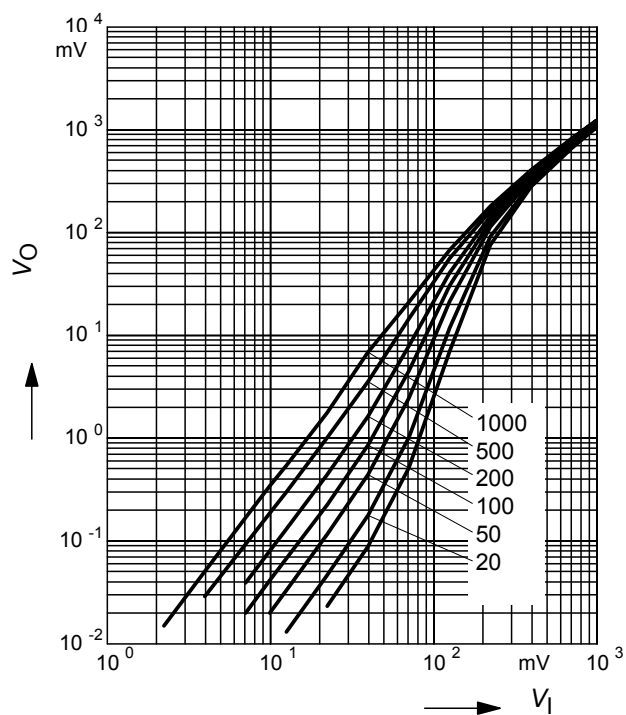
BAT68-07W



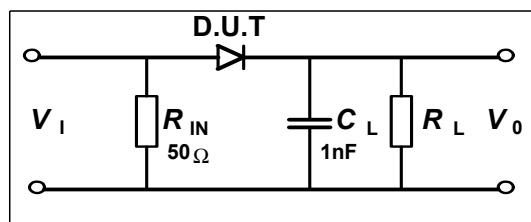
**Rectifier voltage**  $V_{\text{out}} = f(V_{\text{in}})$

$f = 900\text{MHz}$

$R_L$  = Parameter in  $\text{k}\Omega$



Testcircuit

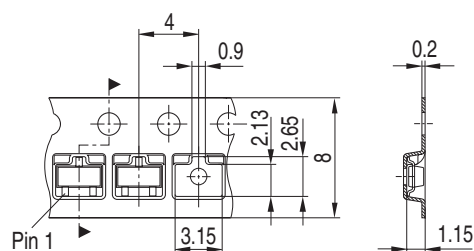




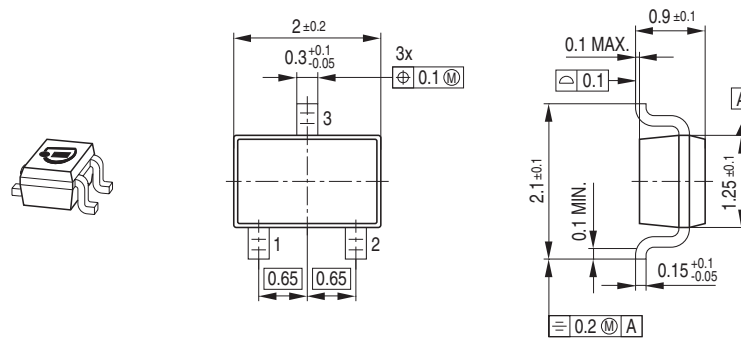
Technical drawing of a stepped shaft. The shaft has a total length of 1.3. It features a central step with a diameter of 0.8. The diameter of the main shaft body is 0.9. The distance from the left end to the start of the step is 0.8, and the distance from the end of the step to the right end is 1.2.

The diagram shows a top-down view of a BCW66 LED package. It is a rectangular component with four pins. The top pin is labeled 'Pin 1'. The package has a central rectangular area with the text 'EHS' and '65' (representing the date code 2005, June) printed on it. The Infineon logo is visible in the top right corner. Labels with leader lines point to the Infineon logo (Manufacturer), the date code (Date code (YM)), and the BCW66 text (Type code).

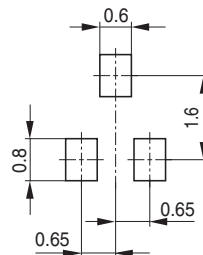
Reel ø180 mm = 3.000 Pieces/Reel  
Reel ø330 mm = 10.000 Pieces/Reel



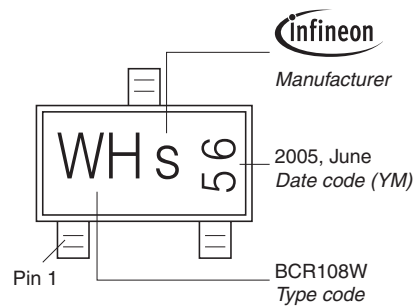
## Package Outline



## Foot Print

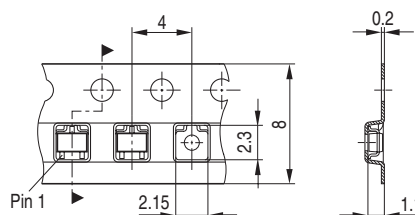


## Marking Layout (Example)

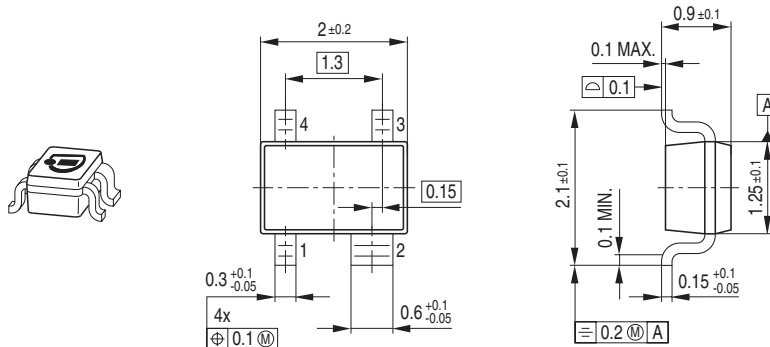


## Standard Packing

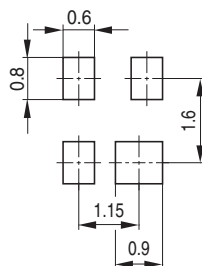
Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø330 mm = 10.000 Pieces/Reel



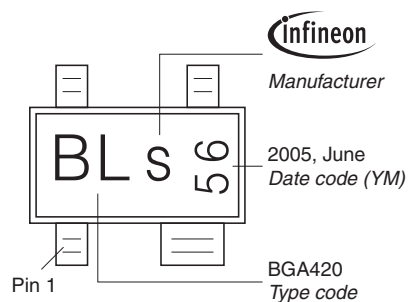
## Package Outline



## Foot Print

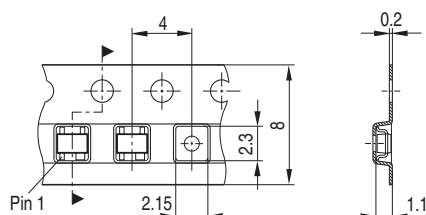


## Marking Layout (Example)

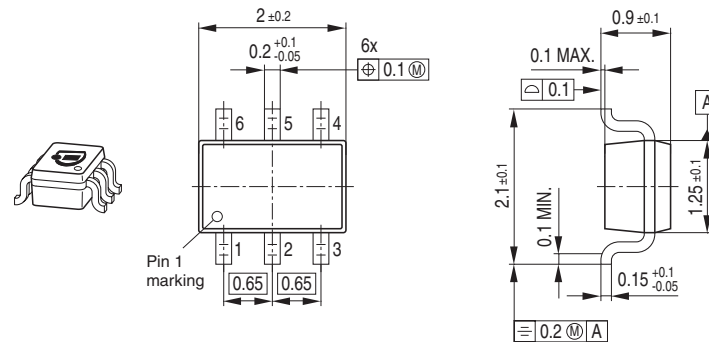


## Standard Packing

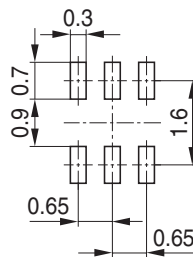
Reel ø180 mm = 3.000 Pieces/Reel  
Reel ø330 mm = 10.000 Pieces/Reel



## Package Outline

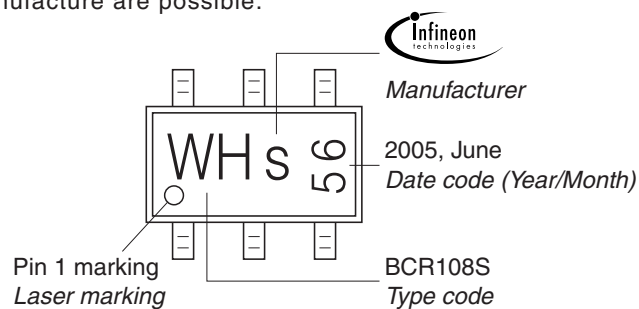


## Foot Print



## Marking Layout (Example)

Small variations in positioning of Date code, Type code and Manufacture are possible.



## Standard Packing

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

For symmetric types no defined Pin 1 orientation in reel.



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