Silicon RF Schottky Diodes

- Low barrier type for mixer applications up to 12 GHz, phase detectors and modulators
- Pb-free (RoHS compliant) package

**BAT15-04R**

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Package</th>
<th>Configuration</th>
<th>$L_S$(nH)</th>
<th>Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAT15-04R*</td>
<td>SOT 23</td>
<td>reverse series pair</td>
<td>1.5</td>
<td>4R</td>
</tr>
</tbody>
</table>

*preliminary

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diode reverse voltage</td>
<td>$V_R$</td>
<td>4</td>
<td>V</td>
</tr>
<tr>
<td>Forward current</td>
<td>$I_F$</td>
<td>110</td>
<td>mA</td>
</tr>
<tr>
<td>Junction temperature</td>
<td>$T_j$</td>
<td>150</td>
<td>°C</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>$T_{op}$</td>
<td>-55 ... 150</td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>$T_{stg}$</td>
<td>-65 ... 150</td>
<td></td>
</tr>
</tbody>
</table>
Electrical Characteristics at $T_A = 25^\circ C$, unless otherwise specified

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Values</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>min.</td>
<td>typ.</td>
</tr>
</tbody>
</table>

**DC Characteristics**

Breakdown voltage
$I_{(BR)} = 10 \, \mu A$
$V_{(BR)}$  

Forward voltage
$I_F = 1 \, mA$
$V_F$  

Forward voltage matching\(^1\)
$I_F = 1 \, mA$
$\Delta V_F$  

**AC Characteristics**

Diode capacitance
$V_R = 0 \, V, f = 1 \, MHz$
$C_T$  

Differential forward resistance
$I_F = 5 \, mA$
$R_F$  

\(^1\Delta V_F\) is the difference between lowest and highest $V_F$ in a multiple diode component.
Diode capacitance $C_T = f(V_R)$

$\text{RT} = 1\text{MHz}$

Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$

Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$

Forward current $I_F = f(V_F)$

$T_A = 25^\circ C$
Forward current \( I_F = f(T_S) \)

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

Permissible Pulse Load
\( \frac{I_{Fmax}}{I_{FDC}} = f(t_p) \)
Package Outline

Foot Print

Marking Layout (Example)

Standard Packing

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

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Information

For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (<www.infineon.com>).

Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office.

Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.