



## Product Brief

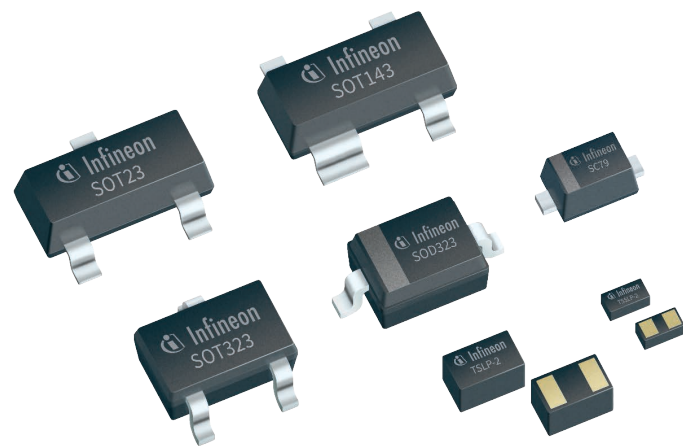
# RF Schottky diodes

As high frequency detectors, mixer and power detector

Infineon RF Schottky diodes are silicon low barrier N-type devices and, unlike other solutions available in the market, they come with various junction diode configurations (e. g. common anode, common cathode) and can be used in sensitive power detectors, in sampling or in mixer circuits.

Their low barrier height and very small forward voltage, along with low junction capacitance, make this series of devices an excellent choice for power detection and mixer functions at frequencies as high as 24 GHz.

All Infineon RF Schottky diodes are qualified according to AEC-Q101 and are recommended to be designed in automotive applications.



### Target applications

- > Power detection in wireless LAN and WiFi routers
- > Power detection in mobile devices
- > Power detection in wireless applications in ISM bands
- > Mixer in 24GHz passive radar system
- > Mixer in C- and Ku- band LNB receiver

### Key features

- > Low leakage current (low forward resistance)
- > Low signal distortion level
- > High efficiency/low loss
- > Low power consumption
- > Guard-ring protection on chip

### Technical benefits

- > Fast switching
- > Tailored for low/medium power detection circuits
- > Higher linearity and power handling capability compared to integrated mixers

### Customer benefits

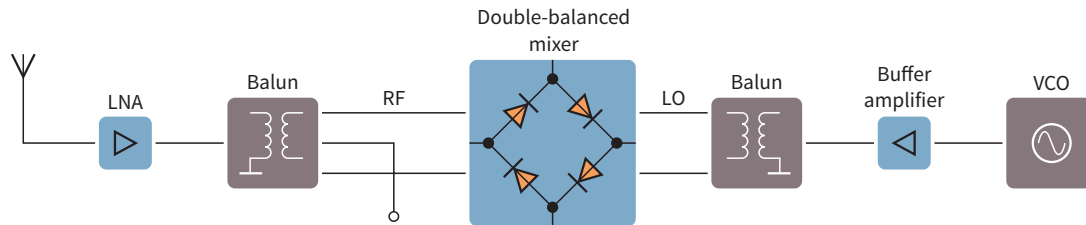
- > Flexibility in circuit design with focus on required parameters
- > Easy adaptability to different applications and frequencies
- > Easy detector/mixer design due to wide linear dynamic range



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Application example: Schottky diode as double-balanced mixer for 24GHz passive radar



## Schottky diodes – product portfolio

| Product type                    | $V_R$ (max)<br>[V] | $I_F$ (max)<br>[mA] | $C_T$<br>[pF] | $V_F$ at 1 mA<br>[mV] | Package        |
|---------------------------------|--------------------|---------------------|---------------|-----------------------|----------------|
| BAT15-02EL/-02ELS               | 4                  | 110                 | 0.26          | 230                   | TSLP-2/TSSLP-2 |
| BAT15-03W                       | 4                  | 110                 | 0.26          | 230                   | SOD323         |
| BAT15-04W                       | D 4                | 110                 | 0.26          | 230                   | SOT323         |
| BAT15-05W                       | D 4                | 110                 | 0.26          | 230                   | SOT323         |
| BAT15-04R                       | D 4                | 110                 | 0.26          | 230                   | SOT23          |
| BAT15-099/-099LRH <sup>1)</sup> | D 4                | 110                 | 0.26          | 230                   | SOT143/TSLP-4  |
| BAT15-099R                      | Q 4                | 110                 | 0.38          | 230                   | SOT143         |
| BAT17                           | 4                  | 130                 | 0.55          | 340                   | SOT23          |
| BAT17-04/W                      | D 4                | 130                 | 0.55          | 340                   | SOT23/SOT323   |
| BAT17-05                        | D 4                | 130                 | 0.55          | 340                   | SOT23          |
| BAT17-05W                       | D 4                | 130                 | 0.55          | 340                   | SOT323         |
| BAT17-06W                       | D 4                | 130                 | 0.55          | 340                   | SOT323         |
| BAT17-07                        | D 4                | 130                 | 0.75          | 340                   | SOT143         |
| BAT24-02LS                      | 4                  | 110                 | 0.21          | 230                   | TSSLP-2ww      |
| BAT62                           | 40                 | 20                  | 0.35          | 440                   | SOT143         |
| BAT62-02L/-02LS                 | 40                 | 120                 | 0.35          | 440                   | TSLP-2/TSSLP-2 |
| BAT62-02V/-03W                  | 40                 | 20                  | 0.35          | 440                   | SC79/SOD323    |
| BAT62-07L4                      | D 40               | 20                  | 0.35          | 440                   | TSLP-4         |
| BAT62-07W                       | D 40               | 20                  | 0.35          | 440                   | SOT343         |
| BAT63-02V                       | 3                  | 100                 | 0.65          | 190                   | SC79           |
| BAT63-07W                       | D 3                | 100                 | 0.65          | 190                   | SOT343         |
| BAT68                           | 8                  | 130                 | 0.75          | 318                   | SOT23          |
| BAT68-04/W                      | D 8                | 130                 | 0.75          | 318                   | SOT23/SOT323   |
| BAT68-06/W                      | D 8                | 130                 | 0.75          | 318                   | SOT23/SOT323   |

1) Not recommended for new designs

D = Double configuration

Q = Quad configuration

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