24-GHz Transceiver MMIC for Automotive Radar Sensor

Data brief

Features
- AEC Q100 qualified
- Single-channel transmitter Pout: 13 dBm
- On-chip low phase noise VCO
- Three single-ended input RX channels
- Low noise figure NFssb: 11 dB
- High conversion gain: 60 dB
- IF variable gain function
- IF switchable bandpass filters
- Rail-to-rail single-ended IF output
- Divider output at 750 MHz and 1.5 MHz / 23 kHz
- On-chip power and temperature sensors
- 3.3 supply voltage
- 4-pin SPI for chip configuration
- QFN 6x6 mm² and 40 leads - wettable flanks

Applications
ISM automotive radar applications.

Description
STRADA431 is a fully integrated 24 GHz transceiver for ISM automotive radar applications. It embeds 24 GHz frequency generation, a power amplifier, and three receivers with IF filters and variable gain functions. It also contains voltage regulators to supply the internal core and it is fully configurable via a simple SPI interface.

STRADA431 is fabricated in 0.13 µm SiGe:C technology and assembled in QFN-40L 6x6 mm², 0.5 mm pitch package with wettable flanks feature.

Table 1. Device summary

<table>
<thead>
<tr>
<th>Package</th>
<th>Order code</th>
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<tbody>
<tr>
<td>QFN-40L</td>
<td>STRADA431 STRADA431-TR</td>
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1 Revision history

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-Feb-2016</td>
<td>1</td>
<td>Initial release.</td>
</tr>
<tr>
<td>15-Mar-2017</td>
<td>2</td>
<td>Updated: <em>Features on page 1</em>, change of low noise value and change of high conversion gain value.</td>
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