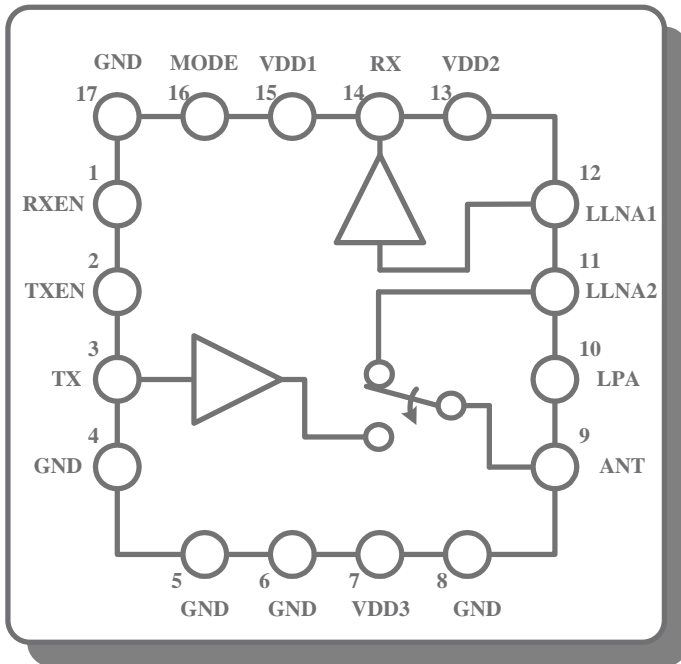


700/800/900MHZ 0.5 WATT BROADBAND CMOS RFeIC



Description

The RFX1009 is a broadband, fully integrated, single-chip, single-die RFeIC (RF Front-end Integrated Circuit) which incorporates all the RF functionality needed for a TDD-mode RF front-end operated in the 700/800/900MHz frequency bands.

The RFX1009 architecture integrates the PA, LNA, Transmit and Receive switching circuitry, associated matching networks, and harmonic filters all in a CMOS single-chip device. The RFX1009 requires minimal external components including three tuning inductors and the external power supply bypass.

This RFeIC is designed for medium to high output power, and consumes low current in receive mode. The combination of superior output power, high sensitivity and efficiency, low noise, small form factor and low cost makes RFX1009 the ideal solution for multiple applications including IEEE 802.15.4, ZigBee, AMR, Smart Home Area Network and other ISM applications in the sub-GHz bands from 780 to 960MHz.

Applications

- ▶ N. America 900MHz ISM Systems
- ▶ E Europe 870MHz SRD Systems
- ▶ China 780MHz WPAN Systems
- ▶ Smart Grid/AMR Applications
- ▶ Remote Sensor and Control
- ▶ Other 700/800/900MHz Radios

| Parameter | Value | Conditions |
|---------------------------|-----------------|--|
| TX | | |
| Small-Signal Gain | 28dB | In Band, Typical |
| TX Saturated Output Power | +27dBm | In Band, Typical |
| Large Signal Gain | 25dB | +27dBm Output Power |
| Large Signal Current | 370mA | +27dBm Output Power |
| Quiescent Current | 60mA | |
| 2 nd Harmonic | -40dBc | +27dBm Output Power |
| 3 rd Harmonic | -40dBc | +27dBm Output Power |
| RX | | |
| Small-Signal Gain | 12dB/9dB | In Band, Typical, High Gain Mode/Low Gain Mode |
| Noise Figure | 3dB/3.5dB | In Band, Typical, High Gain Mode/Low Gain Mode |
| Quiescent Current | 12mA/7mA | High Gain Mode/Low Gain Mode |
| Input P1dB | -3dBm/-1dBm | High Gain Mode/Low Gain Mode |
| CHIP | | |
| Operating Frequency | 780MHz – 960MHz | |
| Supply VCC | 2.7 – 3.6VDC | |
| Shut-down Current | 0.5uA | Standby |
| Input Output Return Loss | 10dB | Typical, In Band |
| RF Port Impedance | 50-Ohm | Single-ended |
| Package | 16-QFN | 3.0mm x 3.0mm x 0.5mm |

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This product brief is a general list of parameters to provide information on the capabilities of this device and is subject to change without notice.