MC13852: General Purpose Low Noise Amplifier with Bypass Switch

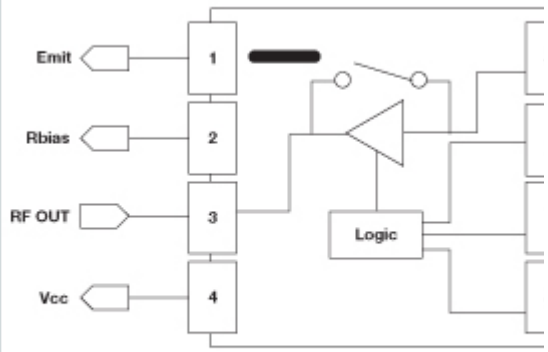
Data Sheet Buy Live Chat Available

The MC13852 is a cost-effective, high IP3 LNA with low noise figure. This is the lower application frequency version of the MC13851. An integrated bypass switch is included to preserve high input intercept performance in variable signal strength environments and boosts dynamic range. On-chip bias circuitry offers low system cost. The input and output match are external to allow maximum design flexibility. External resistor used to set device current enables balancing required linearity with low current consumption. Gain is optimized for applications >1000 MHz. The MC13852 is fabricated with Freescale's advanced RF BiCMOS process using the eSiGe:C module and is available in the 2x2 mm MLPD-8 leadless package, offering a small, low height, easy-to-solder solution for applications with tight printed circuit board placement requirements.

This page contains information on a preproduction product. Specifications and information herein are subject to change without notice.

For additional information and sample availability contact your local Freescale Sales Office or Freescale Authorized Distributor.

MC13852 Low-Noise Amplifier



Features

- The MC13852 is intended for applications from 400 to 1000 MHz and the MC13851 is for applications >1000 MHz.
- Gain: 20.3 dB (typ) at 434 MHz and 18.7 dB (typ) at 900 MHz
- Output third order intercept point (OIP3): 10.6 dBm at 434 MHz and 14.2 dBm (typ) dBm at 900 MHz
- Noise Figure (NF): 1.65 dB (typ) at 434 MHz and 1.2 dB at 900 MHz
- Output 1dB compression point (P1dB): 7.8 dBm (typ) at 434 MHz and 9.6 dBm (typ) at 900 MHz
- Freescale's IP3 Boost Circuitry
- Bypass mode has return losses comparable to active mode, for use in systems with filters and duplexers
- Bypass mode improves dynamic range in variable signal strength environments
- Integrated logic-controlled standby mode with current drain < 1µA
- Total supply current variable from 3-6 mA using an external bias resistor.
- In a receiver system with 20% active mode and 80% bypass mode, the average current drain is < 0.6 mA
- On-chip bias sets the bias point
- Bias stabilized for device and temperature variations
- MLPD-8 leadless package with low parasitics
- 434 and 900 MHz application circuit evaluation boards with characterization data are available
- Available in tape and reel packaging

Target Applications

Ideal for use in any RF product that operates between 400 MH may be applied in:

- Buffer amplifiers
- Mixers
- IF amplifiers
- Voltage controlled oscillators (VCOs)
- Use with transceivers requiring external LNAs
- RF smart metering
- Mobile — Cellular front end LNA, 2 way radios
- Auto — RKE, key fob, TPMS
- Low current drain/long standby time for extended battery li

Evaluation Kits

Evaluation kits are available for this part to s effort. These evaluation kits include a fully c evaluation board with data, circuit schematic information. Each evaluation kit is specific to frequency. For the MC13852 there are two e available:

MC13852-434EVK for 434 MHz
MC13852-900EVK for 900 MHz

Contact Sales or Marketing to order your evaluation kit.