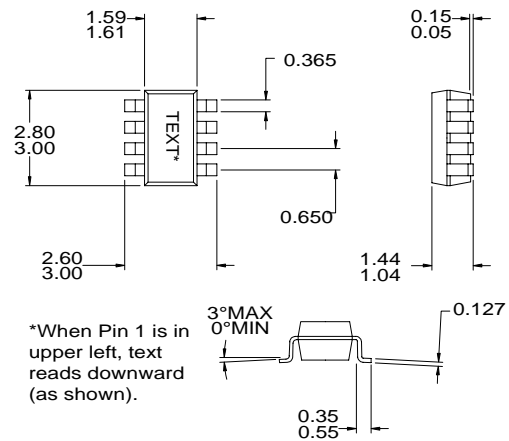


Typical Applications

- LNA for DCS 1800/1900 Handsets
- IF or RF Buffer Amplifiers
- Driver Stage for Power Amplifiers
- Oscillator Loop Amplifiers

Product Description

The RF2375 is a general purpose, low-cost, high performance, low noise amplifier designed for operation from a 2.7V to 4V supply with low current consumption. The attenuation of the device is controlled when in power down mode, providing a known gain step. The input IP_3 can be set with an external resistor to allow maximizing of the dynamic range of the receiver design. The RF2375 is available in a small industry-standard SOT-23-8 lead surface mount package, enabling compact designs which conserve board space. PTAT (Proportional To Absolute Temperature) bias currents are used to bias the LNA.

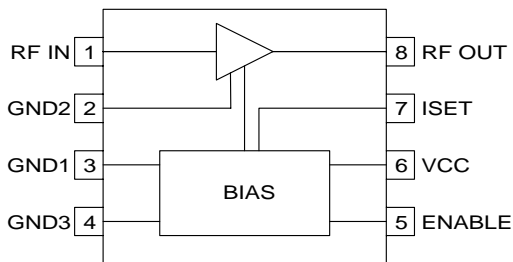


4
GENERAL PURPOSE AMPLIFIERS

Optimum Technology Matching® Applied

- | | | |
|--|-----------------------------------|--------------------------------------|
| <input type="checkbox"/> Si BJT | <input type="checkbox"/> GaAs HBT | <input type="checkbox"/> GaAs MESFET |
| <input checked="" type="checkbox"/> Si Bi-CMOS | <input type="checkbox"/> SiGe HBT | <input type="checkbox"/> Si CMOS |

Package Style: SOT-23-8



Functional Block Diagram

Features

- 700MHz to 2000MHz Operation
- 2.7V to 3.6V Single Supply
- -5dBm Input IP_3 at 5.3mA
- 18dB Gain at 1950MHz
- 2.5dB Noise Figure
- 25dB Gain Step

Ordering Information

- | | |
|-------------|----------------------------------|
| RF2375 | 3V DCS Low Noise Amplifier |
| RF2375 PCBA | Fully Assembled Evaluation Board |

RF Micro Devices, Inc.
7625 Thorndike Road
Greensboro, NC 27409, USA

Tel (336) 664 1233
Fax (336) 664 0454
<http://www.rfmd.com>

Absolute Maximum Ratings

Parameter	Rating	Unit
Supply Voltage	4.0	V
Supply Current	20	mA
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-40 to +150	°C



Caution! ESD sensitive device.

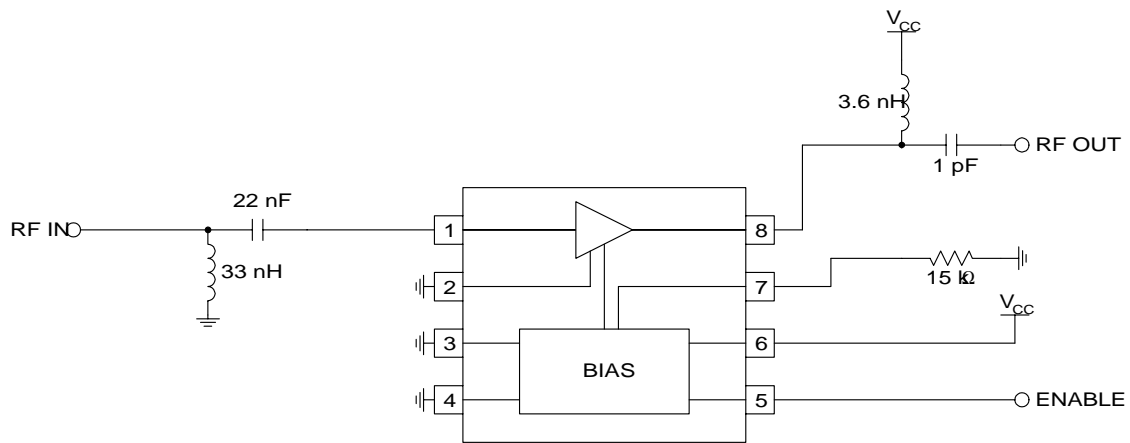
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Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall Frequency Range		700 to 2000		MHz	T=27°C, V _{CC} =2.7V, Freq=1950MHz
LNA Performance Gain Noise Figure Input IP3 Input P1 dB Input VSWR Output VSWR Off Mode Gain	16 -6	18 2.5 -5 -18.5 2:1	 1.5:1	dB dB dBm dBm dB dB dB	At 5.3mA
Power Control Power "ON" Voltage Power "OFF" Voltage Current into ENABLE		CMOS High CMOS Low	 1	V V µA	Voltage on ENABLE Voltage on ENABLE V _{ENABLE} =2.7V
Power Supply Operating Voltage Operating Current Leakage Current		2.7 to 3.6 5.3	 7 1	V mA µA	V _{CC} =2.7V, R _{ISSET} =15kΩ V _{ENABLE} =0V

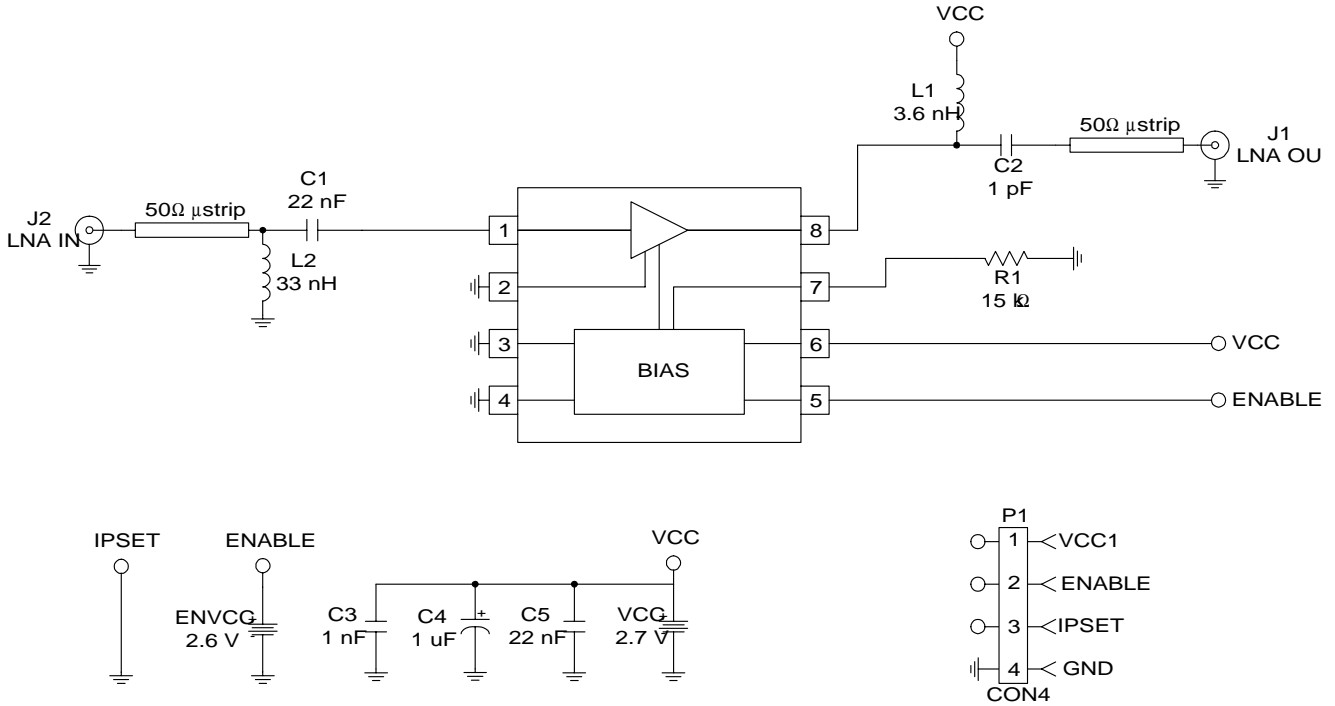
Pin	Function	Description	Interface Schematic
1	RF IN	RF input pin. This pin is not internally DC blocked and requires an external blocking capacitor. The input impedance of this pin is internally matched to 50Ω using feedback.	
2	GND2	Ground connection for the bias circuits.	
3	GND1	Ground connection for the LNA. Keep traces physically short and connect immediately to ground plane for best performance.	
4	GND3	Same as pin 3.	
5	ENABLE	Power down control. This is a CMOS input. When this pin is CMOS "high" the device is enabled. When the level is CMOS "low" the device is shut off and a controlled attenuator is turned on.	
6	VCC	Power supply for the bias circuits.	
7	ISET	This pin sets the current for the device. A resistor to ground of 15kΩ provides a current of 5.3mA.	
8	RF OUT	RF output pin. The output impedance of this pin is internally matched to 50Ω using feedback. Bias for the LNA is provided through this pin, hence it should be connected to VCC through an inductor.	

Application Schematic



Evaluation Board Schematic RF = 1950MHz

(Download [Bill of Materials](http://www.rfmd.com) from www.rfmd.com.)



4
GENERAL PURPOSE
AMPLIFIERS

Evaluation Board Layout Board Size 1.0" x 1.0" Board Thickness 0.031", FR-4

