

RFMD®

RF2815

GPS Low Noise Amplifier with Integrated Filter

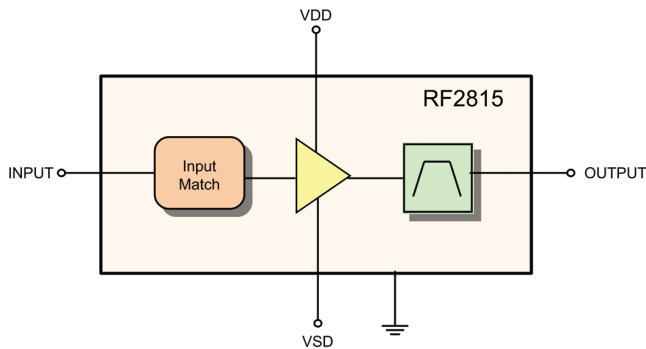


The RF2815 is a high-performance low noise amplifier (LNA) module with integrated cellular and PCS band filtering. Developed for use in GPS receivers, this module provides an excellent combination of low noise figure, high gain, high linearity, and low power consumption which is ideal for battery-operated GPS solutions. Featuring a low external component count and compact package, the RF2815 is optimal in terms of both solution size and performance.

SPECIFICATIONS

Parameter	High Current Mode	Low Current Mode	Low Operating Voltages			Unit
			V _{DD} = 2 V	V _{DD} = 1.5 V	V _{DD} = 1 V	
Gain (G)	13.5	12.5	14	13.5	11.5	dB
Noise Figure (NF)*	0.85	0.95	0.85	0.95	1.1	dB
Input P1 dB Compressed Power (IP1 dB)	-3	-3	-2	-4	-6	dBm
Input 3rd Order Intercept Point (2-tone at fc± 2.5 MHz)	8	6	10	7.5	3	dBm
Input Return Loss (S11)	-8	-7	-9	-8	-7	dB
Output Return Loss (S22)	-13	-11	-13.5	-12.5	-11	dB
Reverse Isolation (S12)	-24	-24	-24	-24	-22	dB
Cell Band Rejection (Relative to 1575 MHz at 827.5 MHz)	54	55	52	52	52	dBc
PCS Band Rejection (Relative to 1575 MHz at 1885 MHz)	45	44	45	45	45	dBc
R2	3 K	3 K	1.5 K	1.5 K	1.5 K	ohms
VSD	2.6 V	1.67 V	2 V	1.5 V	1 V	V
DC Supply Current at Shutdown (SD) Voltage VSD = 2.85 V (IDD)	8	4.5	10.5	7.3	4	mA
ISH (Shutdown Current)	0.1	0.1	0.1	0.1	0.1	uA

*Noise Figure Data has not been de-embedded



FEATURES

- Low noise figure: 0.85 dB (Typ)
- High gain: 13.5 dB (Typ)
- High IIP3: +8 dBm (Typ)
- Operable over wide supply voltage range: 1 V to 3.6 V
- CMOS compatible shutdown function (<0.1 uA)
- Current tunable via single resistor
- No external DC blocking capacitor required at the output—lowest BOM cost and small solution size
- Compact footprint: 3.3 x 2.1 x 1.0 mm
- Ideal for cellular and non-cellular GPS receiver applications

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