



RF-LAMBDA

The power beyond expectations

R07M01GSB

Low Noise Amplifier 700-1000MHz NF: 0.9dB



- GSM, GPRS & EDGE
- CDMA & W-CDMA
- Private Land Mobile Radio
- UHF Reallocation Applications
- Noise Figure: 0.9 dB
- Output IP3: +35 dBm
- Gain: 14 dB
- Low Loss LNA Bypass Path
- Single Supply: +5V @ 90 mA
- 50 Ohm Matched Output

Electrical Specifications, $T_A = +25^\circ \text{C}$, $V_{dd} = +5\text{V}$

Parameter	LNA Mode			LNA Mode			Bypass Mode			Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Frequency Range	810 - 960			700 - 1000			700 - 1000			MHz
Gain	11.5	13.5		10.5	14		-2.8	-2.0		dB
Gain Variation Over Temperature		0.008	0.015		0.008	0.015		0.002	0.004	dB / ° C
Noise Figure		0.9	1.3		1.0	1.4				dB
Input Return Loss		28			25			30		dB
Output Return Loss		12			11			25		dB
Reverse Isolation		20			19					dB
Power for 1dB Compression (P1dB)*	18	21		17	20			30		dBm
Saturated Output Power (Psat)		22.5			22					dBm
Third Order Intercept (IP3)* (-20 dBm Input Power per tone, 1 MHz tone spacing)		35.5			35			50		dBm
Supply Current (Idd)		90			90			0.01		mA

Absolute Maximum Ratings

Drain Bias Voltage (Vdd)	+8.0 Vdc
RF Input Power (RFIN)	+15 dBm
(Vdd = +5.0 Vdc)	+30 dBm
Channel Temperature	150 ° C
Continuous Pdis (T = 85 ° C)	0.878 W
(derate 13.5 mW/° C above 85 ° C)	
Thermal Resistance	74.1 ° C/W
(channel to ground paddle)	
Storage Temperature	-65 to +150° C
Operating Temperature	-40 to +85° C

Typical Supply Current vs. Vdd

Vdd (Vdc)	Idd (mA)
+4.5	87
+5.0	90
+5.5	93

Truth Table

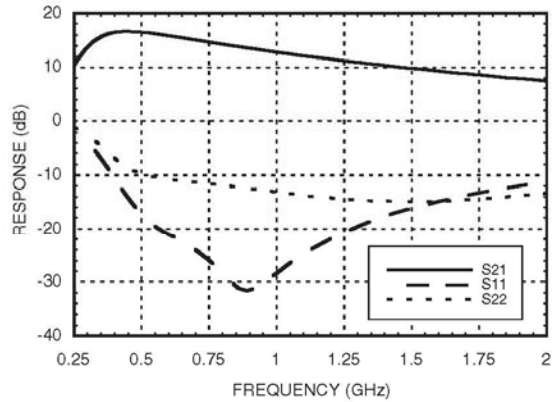
LNA Mode	Vctl= Short Circuit to DC Ground
Bypass Mode	Vctl= Open Circuit



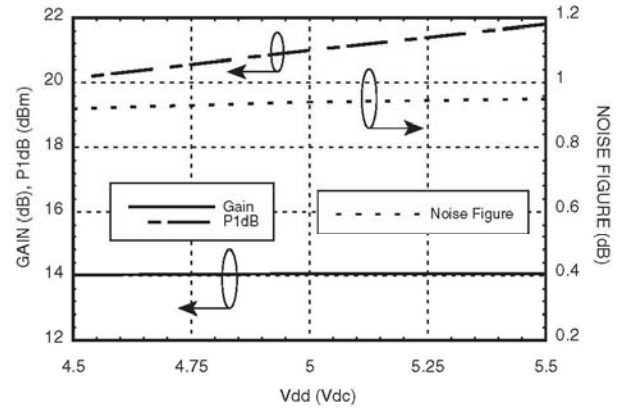
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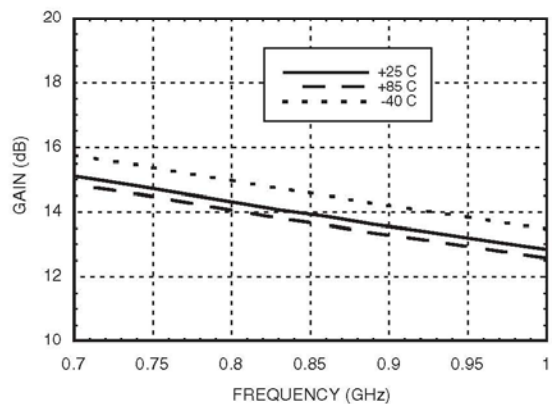
LNA Broadband Gain & Return Loss



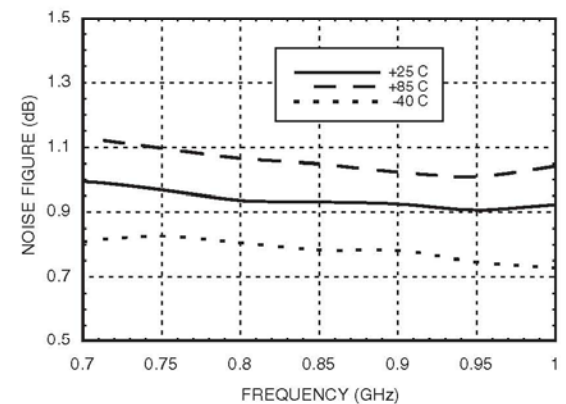
LNA – Gain, Noise Figure & Power vs. Supply Voltage @ 850 MHz



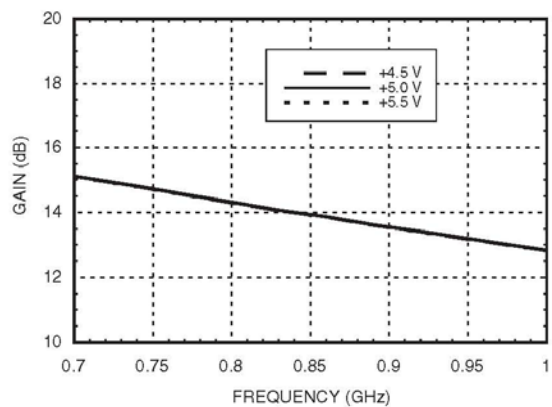
LNA Gain vs. Temperature



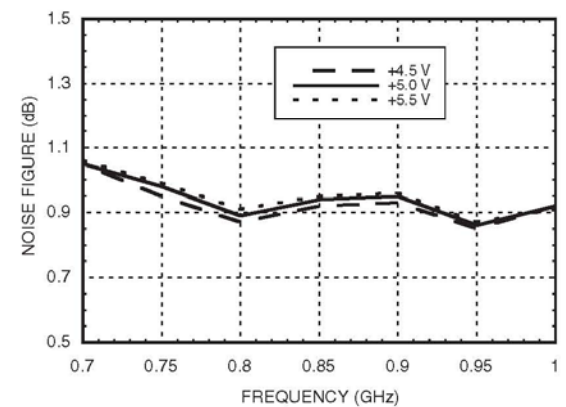
LNA Noise Figure vs. Temperature



LNA Gain vs. Vdd



LNA Noise Figure vs. Vdd





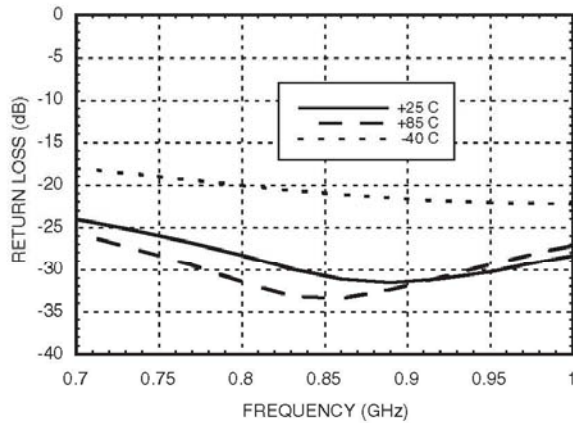
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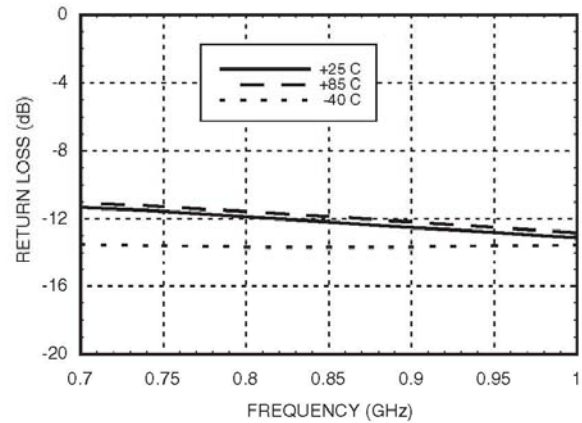
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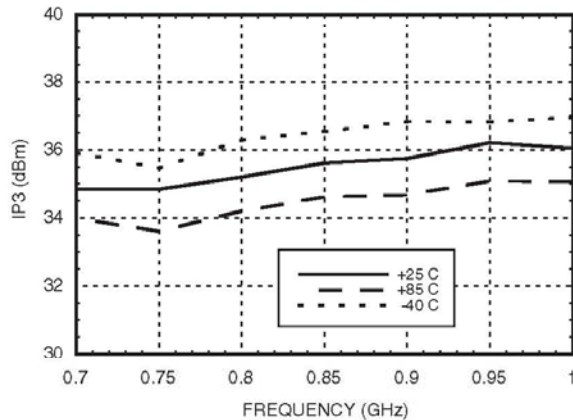
LNA Input Return Loss vs. Temperature



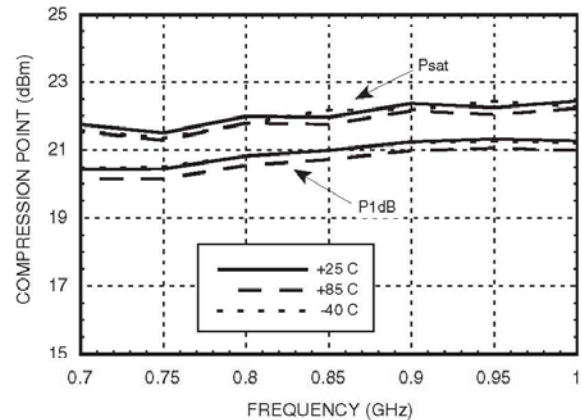
LNA Output Return Loss vs. Temperature



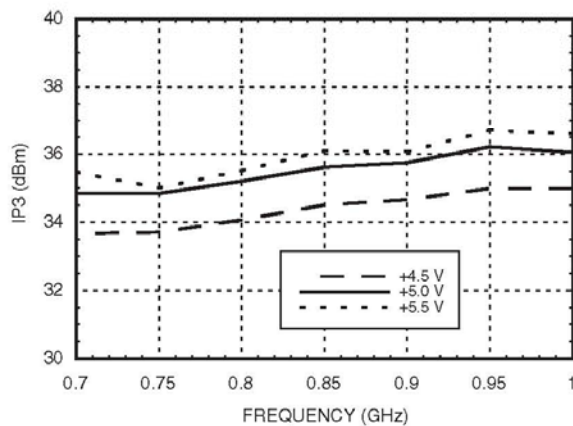
LNA Output IP3 vs. Temperature



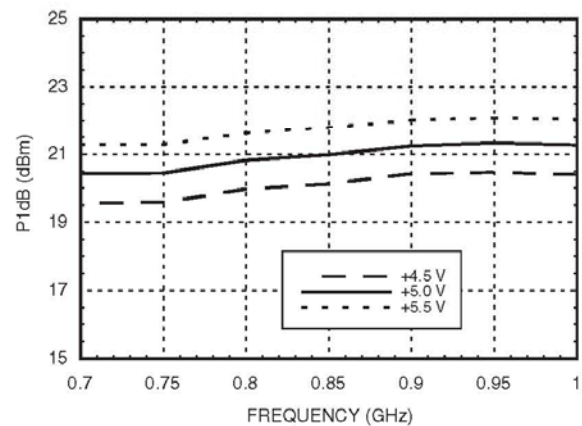
LNA P1dB & Psat vs. Temperature



LNA Output IP3 vs. Vdd



LNA P1dB vs. Vdd





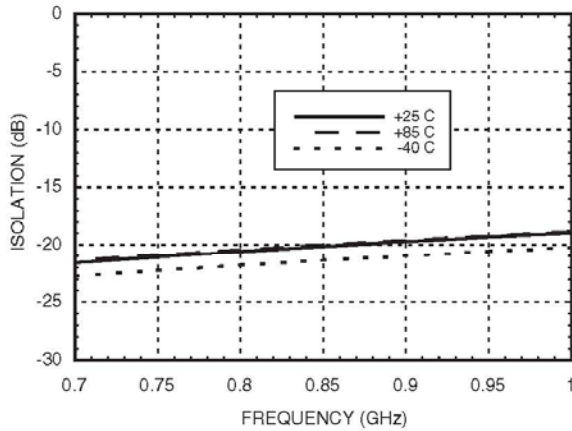
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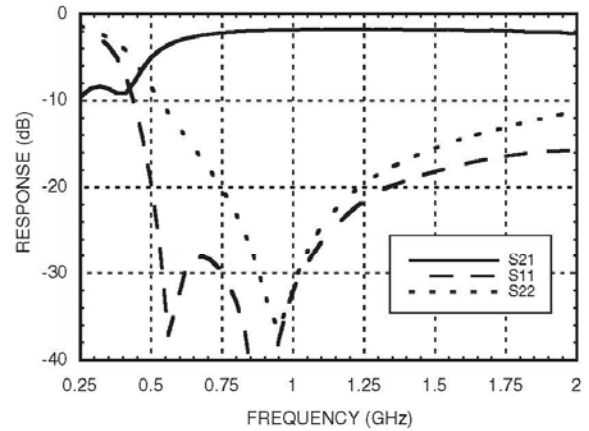
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LNA Reverse Isolation vs. Temperature



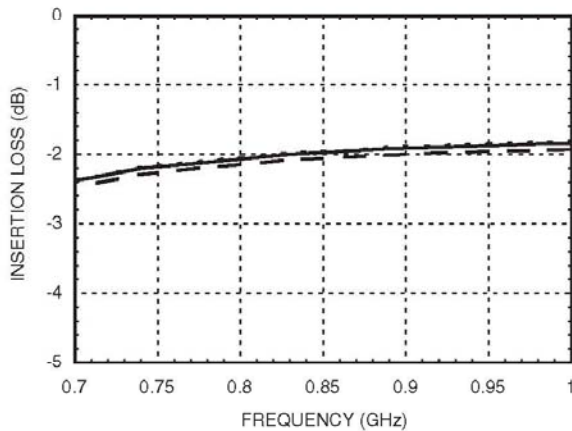
Bypass Mode

Broadband Insertion Loss & Return Loss



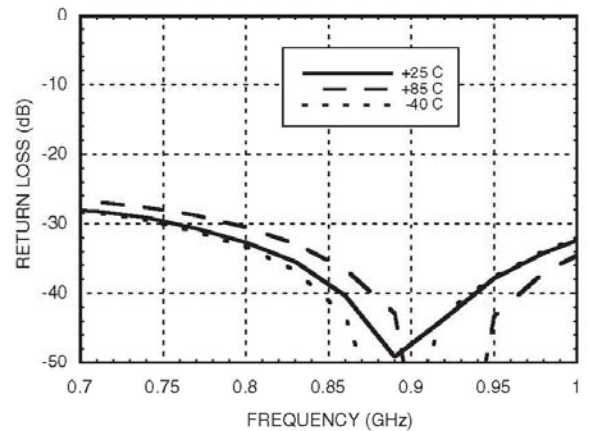
Bypass Mode

Insertion Loss vs. Temperature



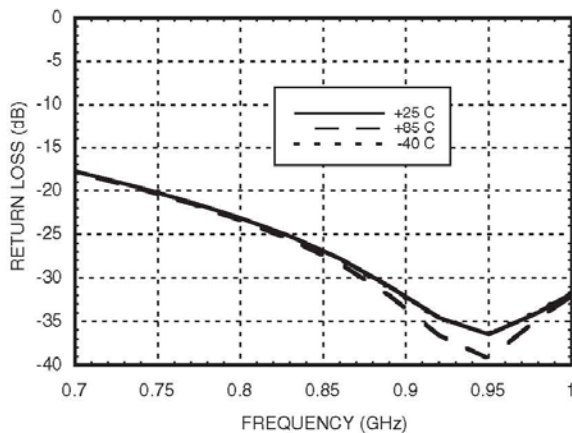
Bypass Mode

Input Return Loss vs. Temperature



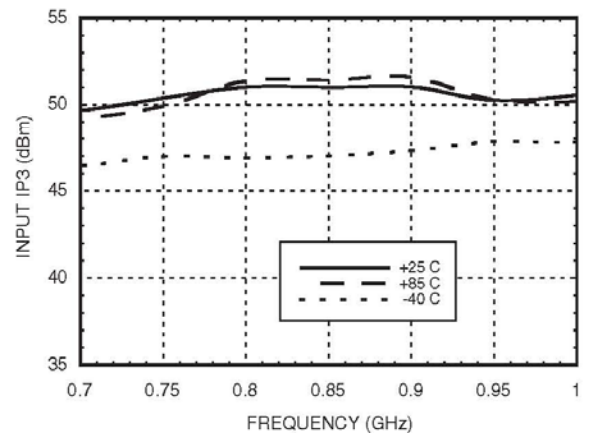
Bypass Mode

Output Return Loss vs. Temperature



Bypass Mode

Input IP3 vs. Temperature

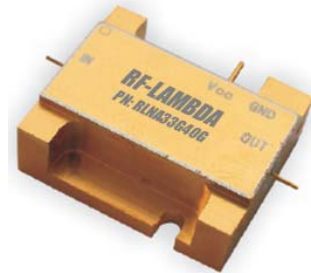
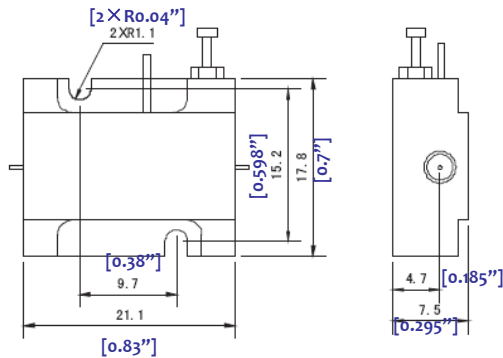




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Heat Sink required during operation. (Heat Sink sold separately)

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