



RF-LAMBDA

The power beyond expectations

R34M04GSA

Low Noise Amplifier 3.1-3.9GHz NF: 1dB



- Fixed Wireless and LTE/WiMAX/4G
- BTS & Infrastructure
- Repeaters and Femtocells
- Public Safety Radio
- Access Points
- Noise Figure: 1 dB
- Gain: 18 dB
- Output IP3: +33 dBm
- Single Supply: +3V to +5V
- 50 Ohm Matched Input/Output
- 16 Lead 3x3mm QFN Package: 9 mm²

Electrical Specifications

TA = +25 ° C, Rbias = 820# for Vdd = 5V, Rbias = 47k # for Vdd = 3V [1]

Parameter	Vdd = +3V			Vdd = +5V			Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Frequency Range	3.1 - 3.9			3.1 - 3.9			MHz
Gain	13	17		15.5	18		dB
Gain Variation Over Temperature		0.01			0.01		dB/ ° C
Noise Figure		1	1.3		1	1.3	dB
Input Return Loss		25			30		dB
Output Return Loss		13			16		dB
Output Power for 1 dB Compression (P1dB)	12	15		16	19		dBm
Saturated Output Power (Psat)		16.5			20.5		dBm
Output Third Order Intercept (IP3)		26			33		dBm
Supply Current (Idd)		41	55		65	90	mA

Absolute Maximum Ratings

Drain Bias Voltage (Vdd)	+5.5V
RF Input Power (RFIN) (Vdd = +5 Vdc)	+10 dBm
Channel Temperature	150 ° C
Continuous Pdis (T= 85 ° C) (derate 11.1 mW/ ° C above 85 ° C)	0.72 W
Thermal Resistance (channel to ground paddle)	90 ° C/W
Storage Temperature	-65 to +150 ° C
Operating Temperature	-40 to +85 ° C
ESD Sensitivity (HBM)	Class 1A



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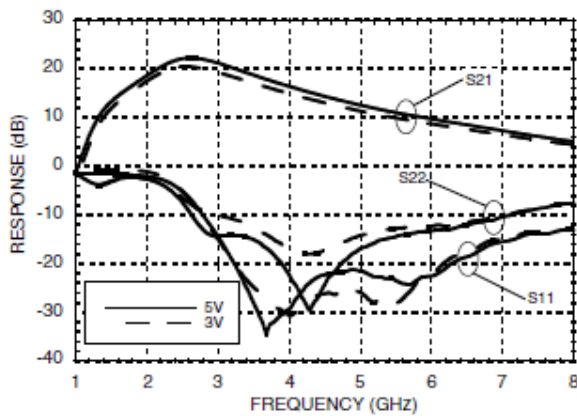
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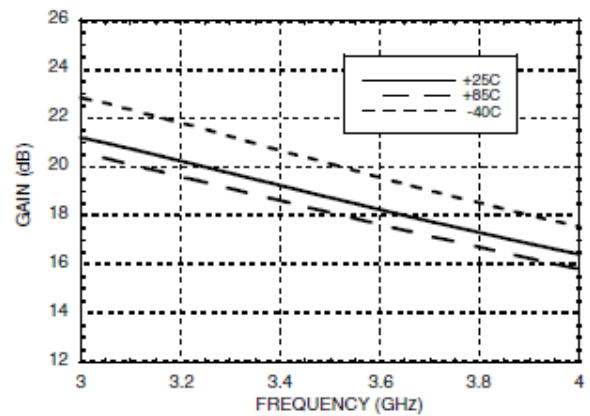
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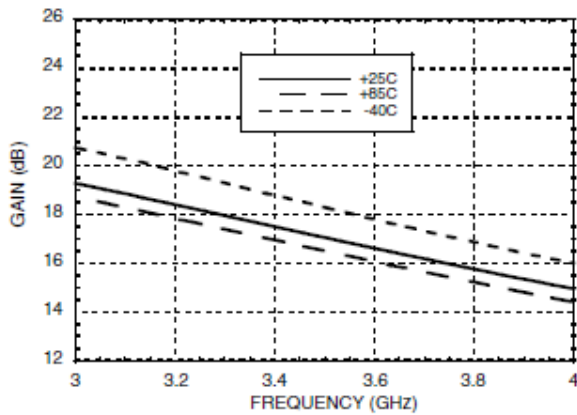
Broadband Gain & Return Loss [1] [2]



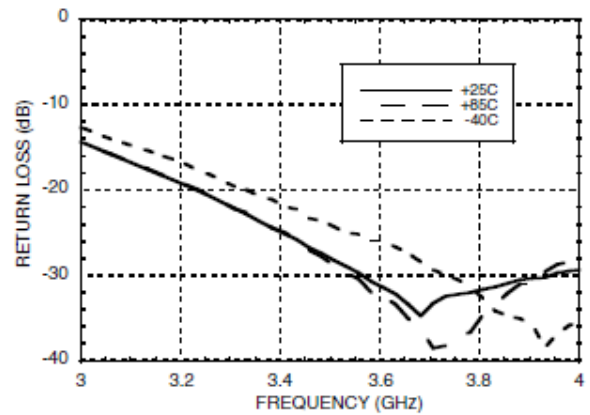
Gain vs. Temperature [1]



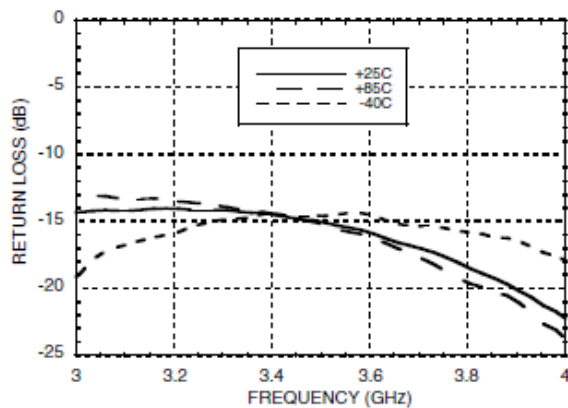
Gain vs. Temperature [2]



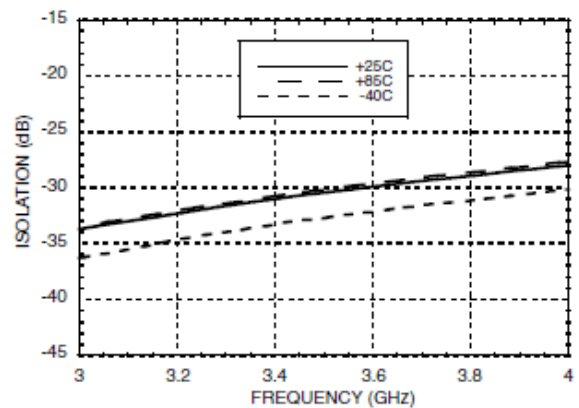
Input Return Loss vs. Temperature [1]



Output Return Loss vs. Temperature [1]

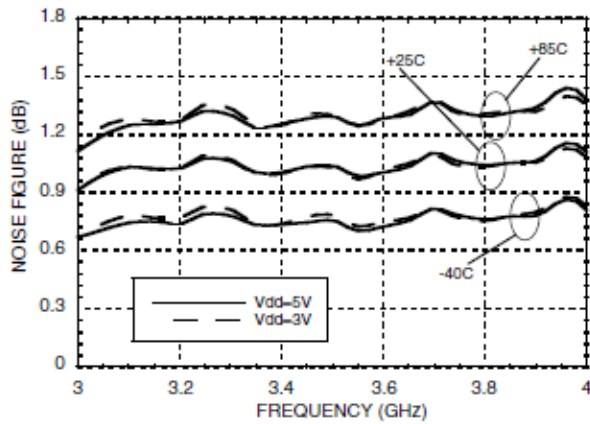


Reverse Isolation vs. Temperature [1]

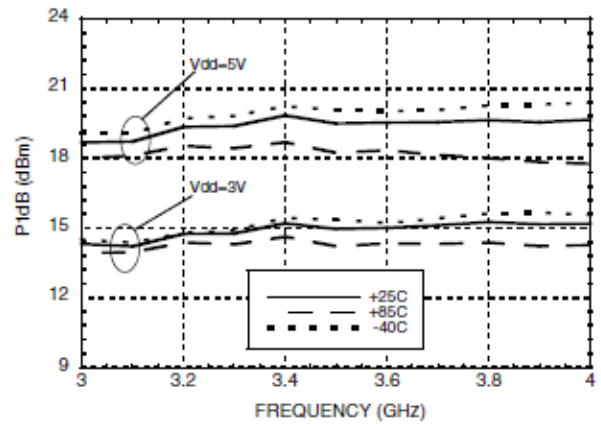




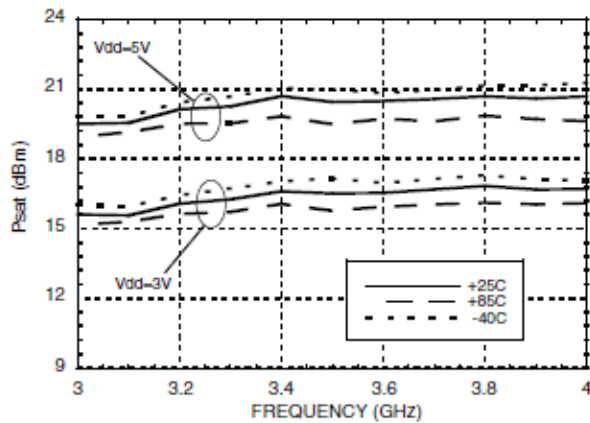
Noise Figure vs. Temperature [1] [2] [4]



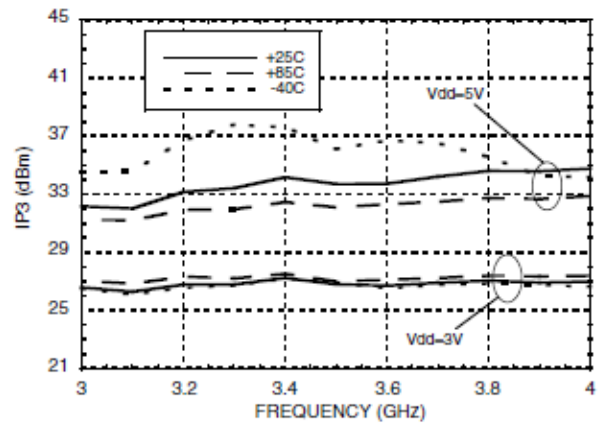
P1dB vs. Temperature [1] [2]



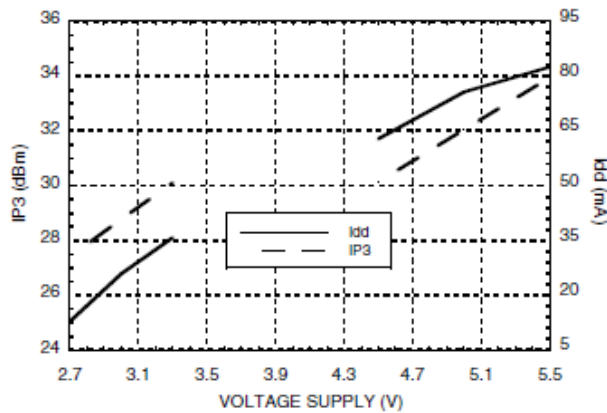
Psat vs. Temperature [1] [2]



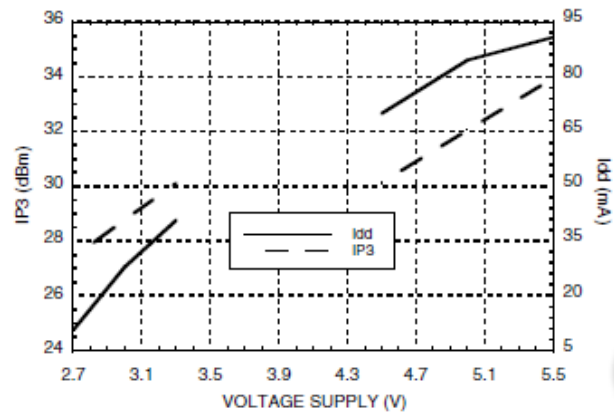
Output IP3 vs. Temperature [1] [2]



Output IP3 and Supply Current vs. Supply Voltage @ 3300 MHz [3]

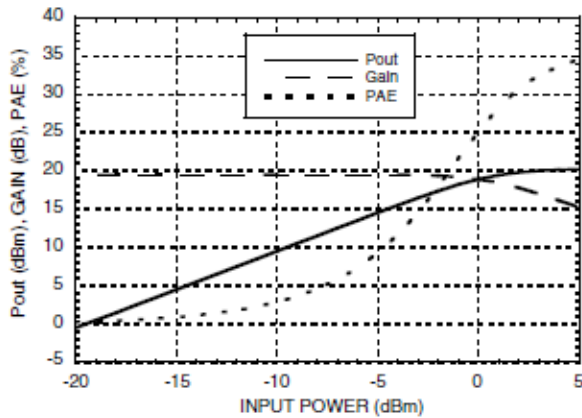


Output IP3 and Supply Current vs. Supply Voltage @ 3800 MHz [3]

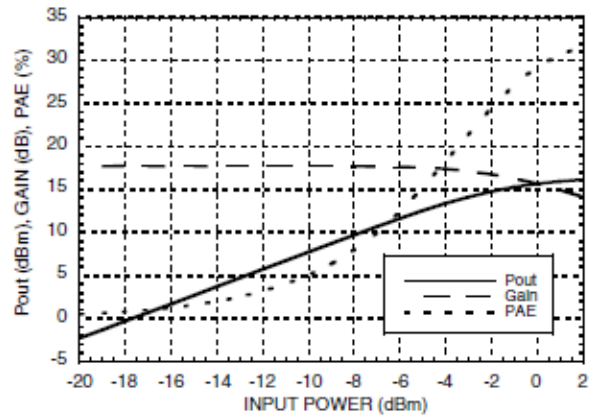




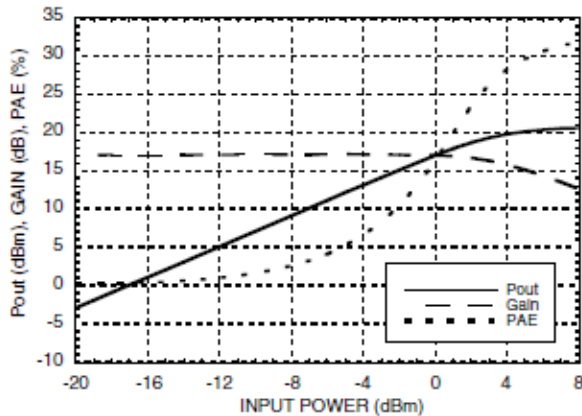
Power Compression @ 3300 MHz [1]



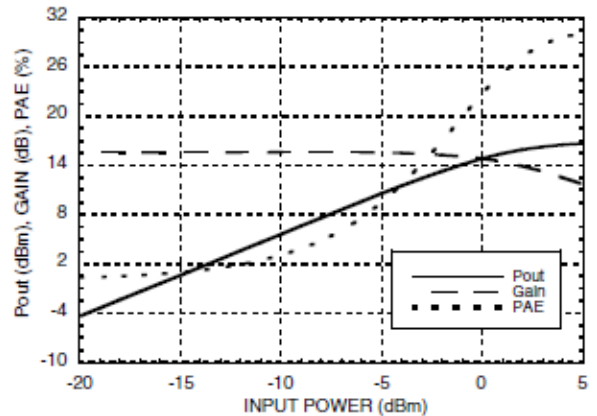
Power Compression @ 3300 MHz [2]



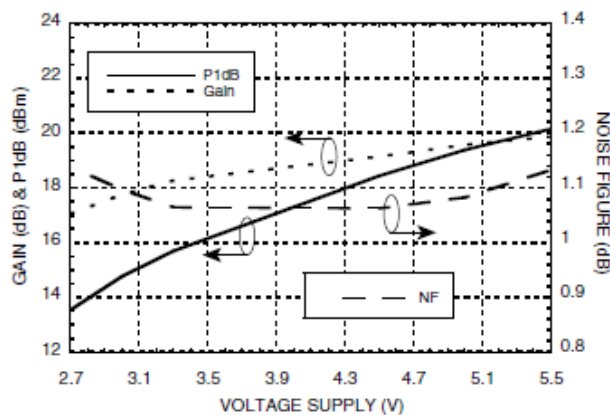
Power Compression @ 3300 MHz [1]



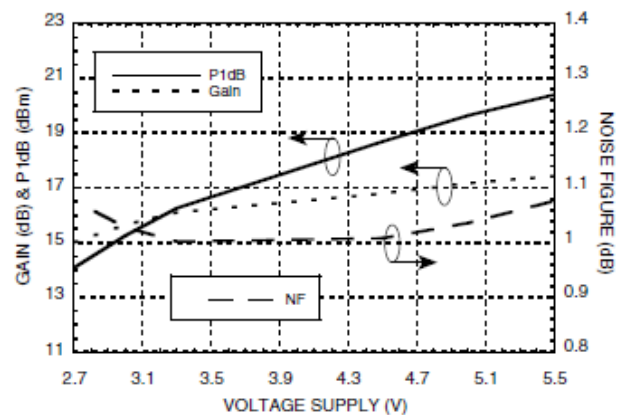
Power Compression @ 3800 MHz [2]



Gain, Power & Noise Figure vs. Supply Voltage @ 3300 MHz [3]



Gain, Power & Noise Figure vs. Supply Voltage @ 3800 MHz [3]





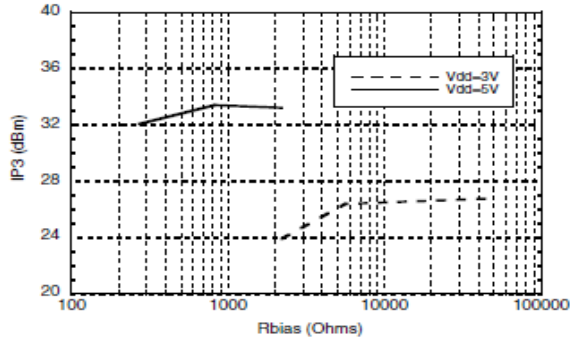
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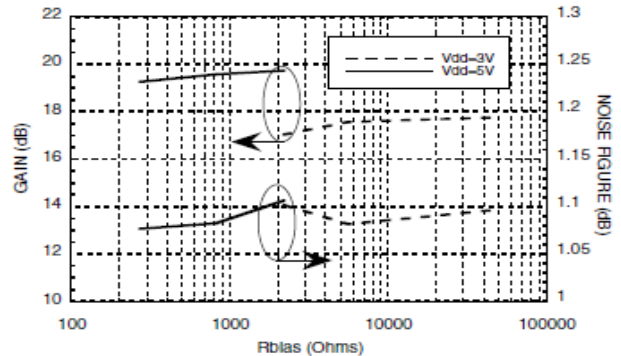
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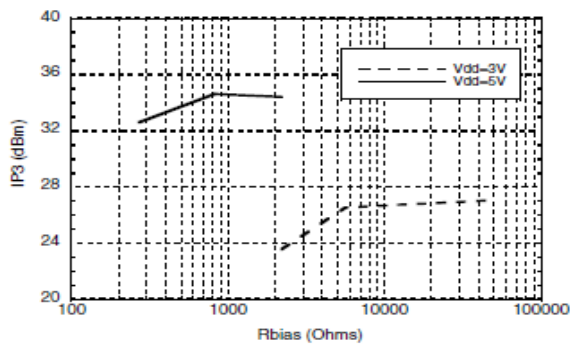
Output IP3 vs. Rbias @ 3300 MHz



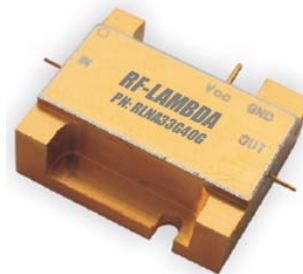
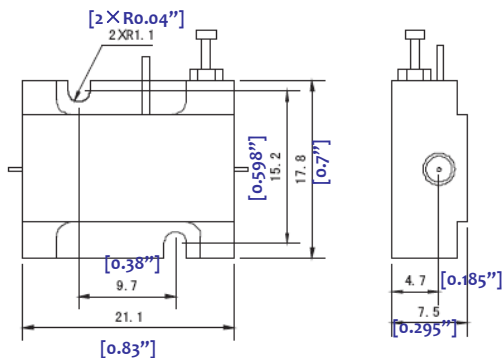
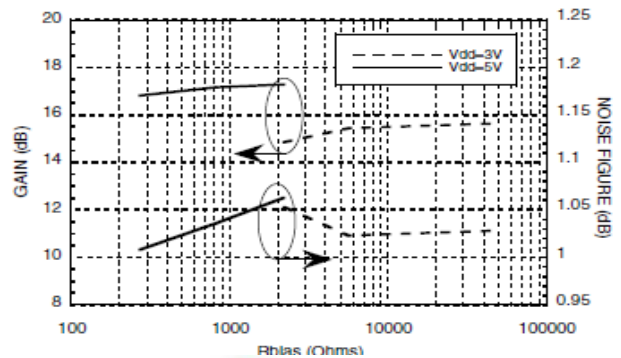
Gain, Noise Figure & Rbias @ 3300 MHz



Output IP3 vs. Rbias @ 3800 MHz



Gain, Noise Figure & Rbias @ 3800 MHz



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

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