



RF-LAMBDA

The power beyond expectations

R55M01GSB

Low Noise Amplifier 550-1200MHz NF: 0.5dB



- Cellular/3G and LTE/WiMAX/4G
- BTS & Infrastructure
- Repeaters and Femtocells
- Public Safety Radio
- Access Points
- Noise Figure: 0.5 dB
- Gain: 16 dB
- Output IP 3: +37 dBm
- Single Supply: +3V to +5V
- 50 Ohm Matched Input/Output
- 16 Lead 3x3mm QFN Package: 9 mm2

Electrical Specifications, $T_A = +25^\circ \text{C}$, $R_{bias} = 3.92k \text{ Ohms}^*$

Parameter	Vdd = +3 Vdc						Vdd = +5 Vdc						Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Frequency Range	698 - 960			550 - 1200			698 - 960			550 - 1200			MHz
Gain	13	16		11	15		13.5	16		11.5	16		dB
Gain Variation Over Temperature		0.003			0.003			0.005			0.005		dB/ ° C
Noise Figure		0.5	0.8		0.5	1.1		0.55	0.85		0.6	1.1	dB
Input Return Loss		28			22			22			17		dB
Output Return Loss		12			14			12			15		dB
Output Power for 1 dB Compression (P1dB)	14	16		12.5	16		18.5	21		16.5	20		dBm
Saturated Output Power (Psat)		17			16.5			21			20.5		dBm
Output Third Order Intercept (IP3)		31			30			37			37		dBm
Supply Current (Idd)		30	45		30	45		88	115		88	115	mA

Absolute Maximum Ratings

Drain Bias Voltage (Vdd)	+6V
RF Input Power (RFIN) (Vdd = +5 Vdc)	+10 dBm
Channel Temperature	150 ° C
Continuous P _{diss} (T= 85 ° C) (derate 8.33 mW/° C above 85 ° C)	0.54 W
Thermal Resistance (channel to ground paddle)	120 ° C/W
Storage Temperature	-65 to +150 ° C
Operating Temperature	-40 to +85 ° C

Typical Supply Current vs. Vdd

Vdd (V)	Idd (mA)
2.7	18
3.0	30
3.3	41
4.5	77
5.0	88
5.5	97



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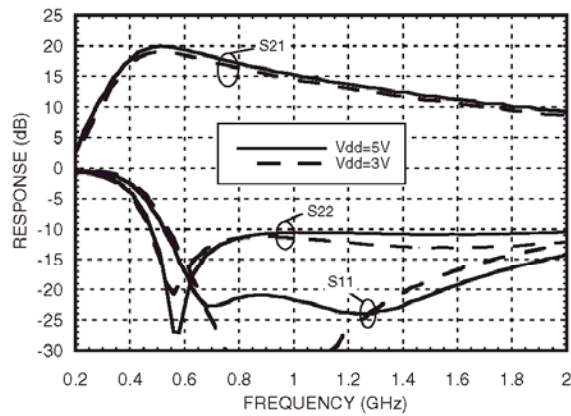


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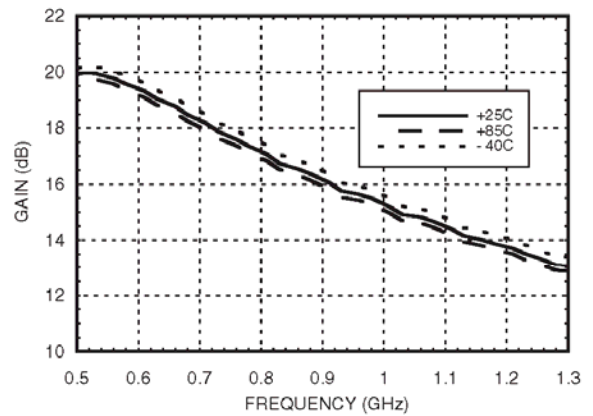
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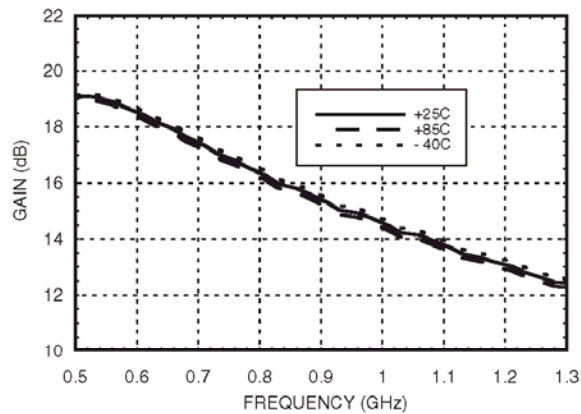
Broadband Gain & Return Loss [1] [2]



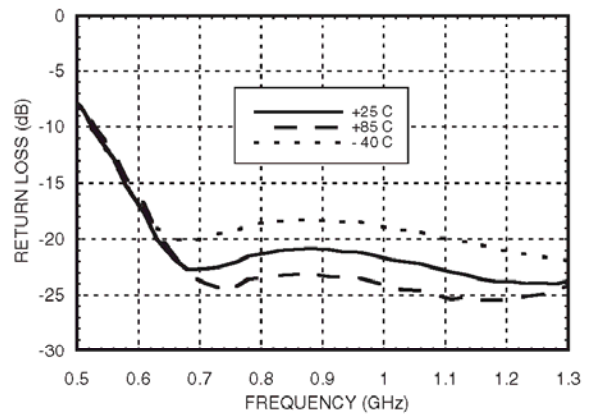
Gain vs. Temperature [1]



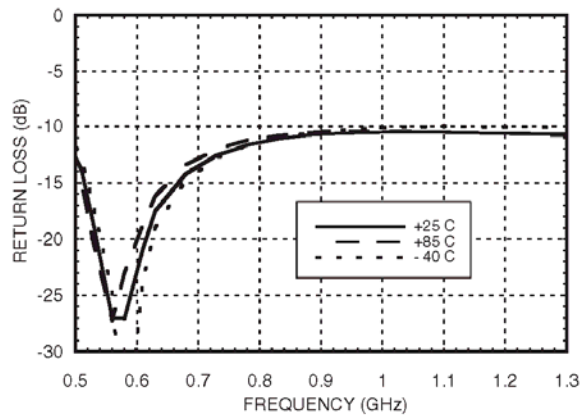
Gain vs. Temperature [2]



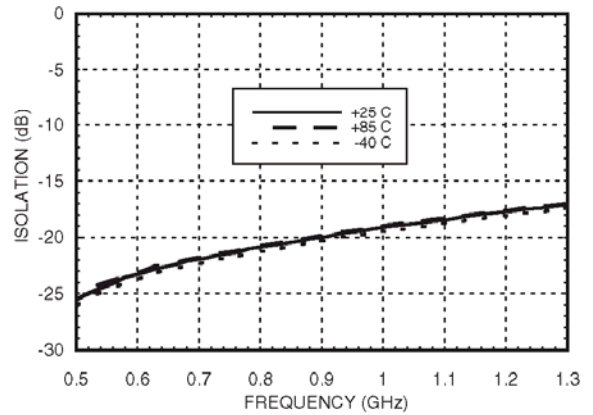
Input Return Loss vs. Temperature [1]



Output Return Loss vs. Temperature [1]



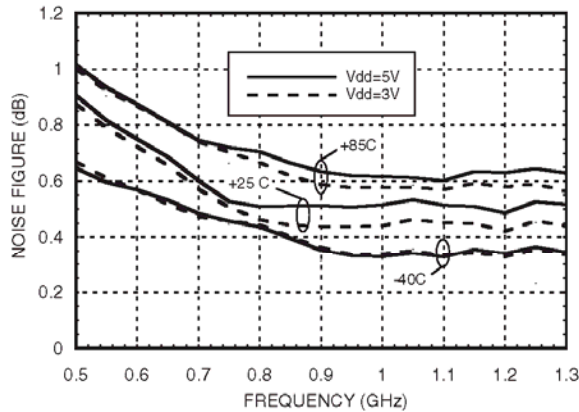
Reverse Isolation vs. Temperature [1]



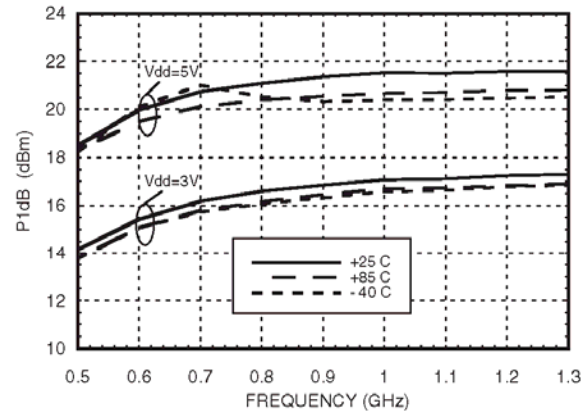
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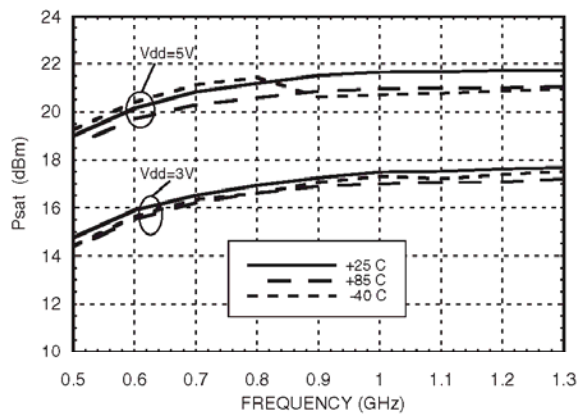
Noise Figure vs. Temperature [1] [2] [4]



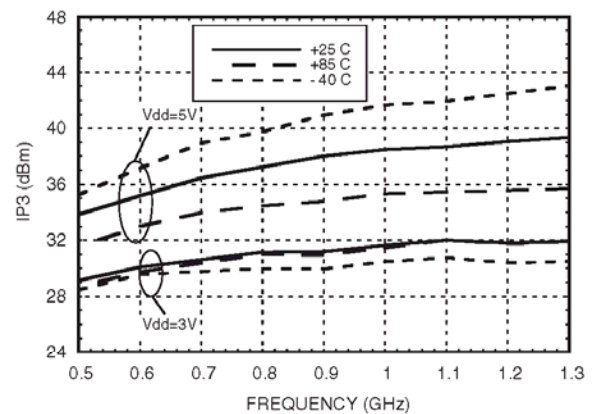
P1dB vs. Temperature [1] [2]



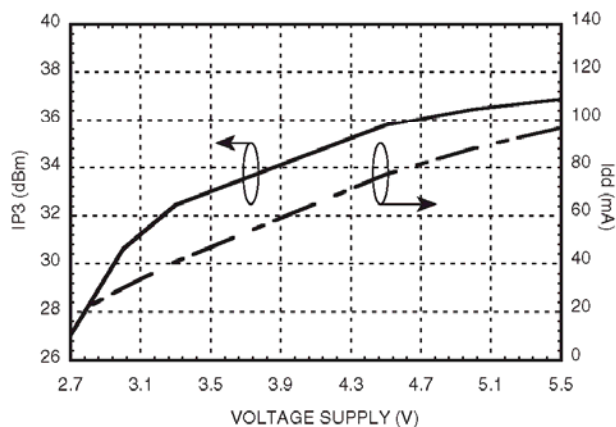
Psat vs. Temperature [1] [2]



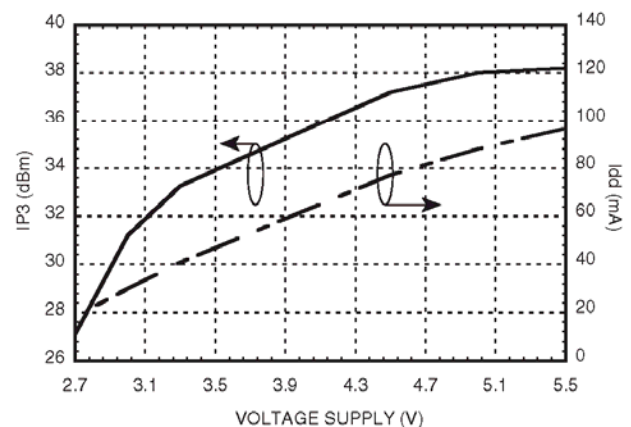
Output IP3 vs. Temperature [1] [2]



Output IP3 and Idd vs. Supply Voltage @ 700 MHz [3]

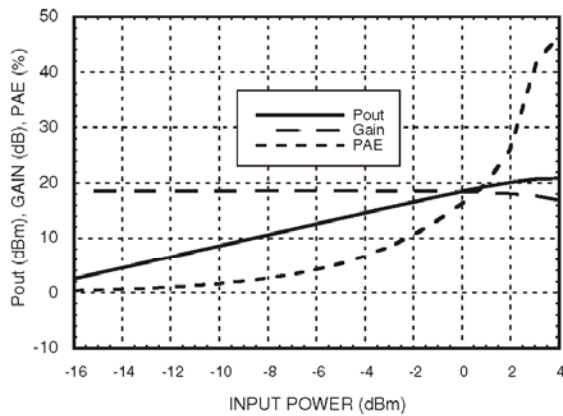


Output IP3 and Idd vs. Supply Voltage @ 900 MHz [3]

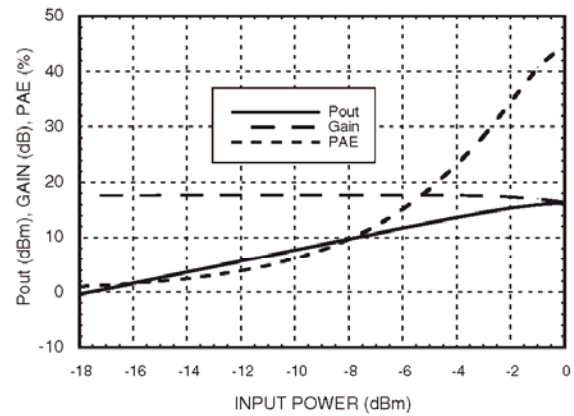




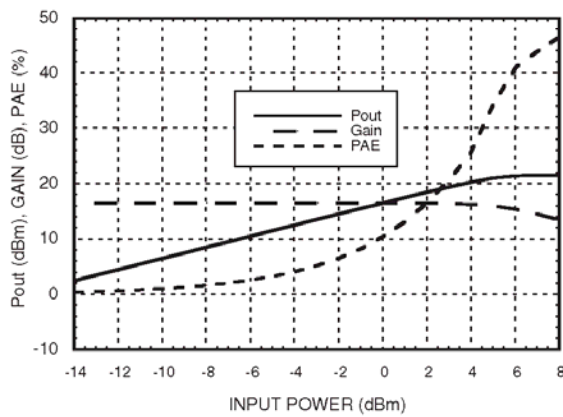
Power Compression @ 700 MHz [1]



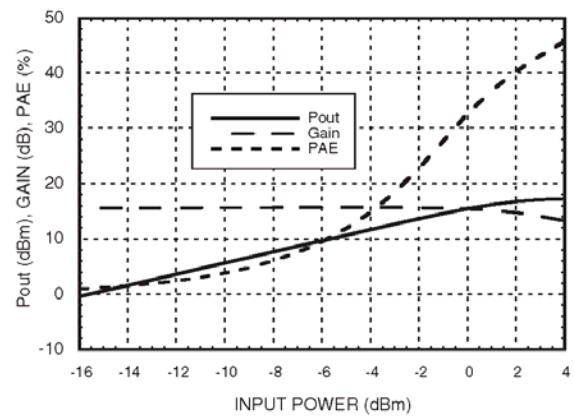
Power Compression @ 700 MHz [2]



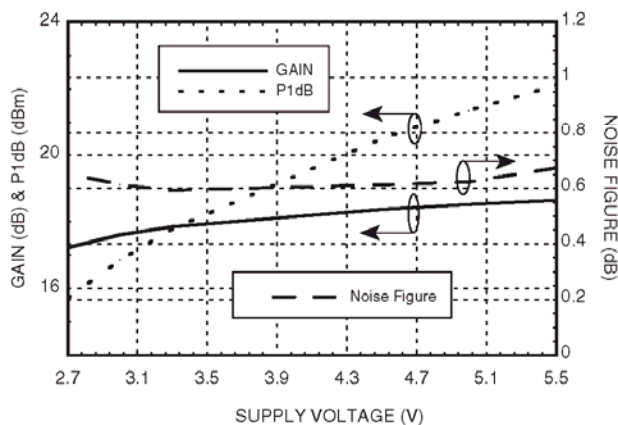
Power Compression @ 900 MHz [1]



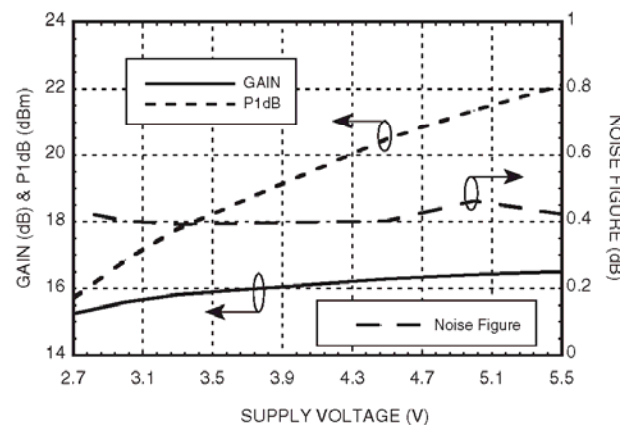
Power Compression @ 900 MHz [2]



Gain, Power & Noise Figure vs. Supply Voltage @ 700 MHz [3]



Gain, Power & Noise Figure vs. Supply Voltage @ 900 MHz [3]



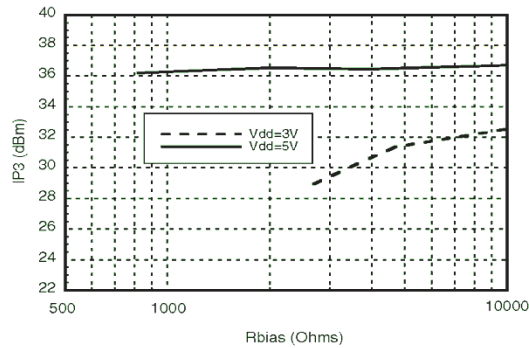


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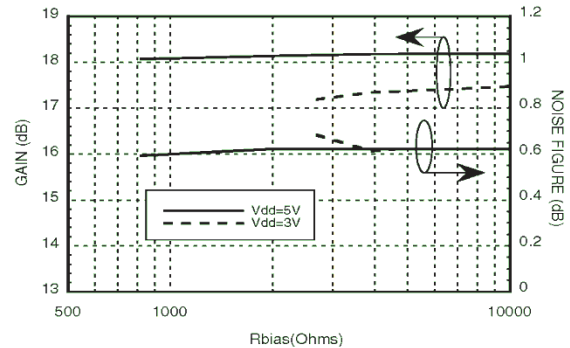
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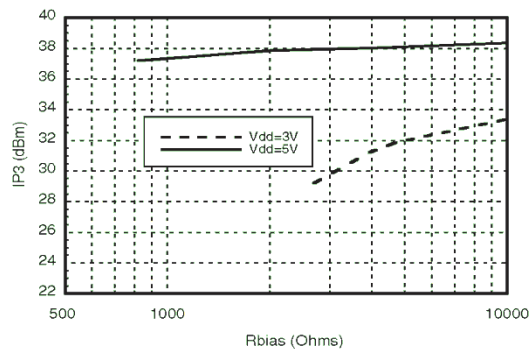
Output IP3 vs. Rbias @ 700 MHz



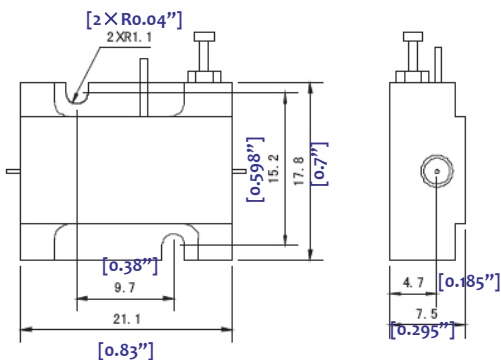
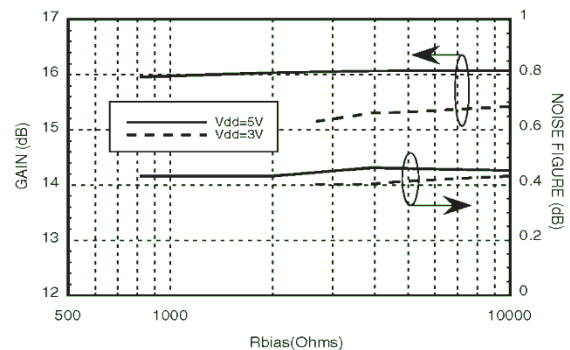
Gain, Noise Figure & Rbias @ 700 MHz



Output IP3 vs. Rbias @ 900 MHz



Gain, Noise Figure & Rbias @ 900 MHz



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

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