



RF-LAMBDA

The power beyond expectations

R04M96MSA

Low Noise Amplifier 40.0-960MHz NF: 3.5dB



- DTV Receivers
- Multi-Tuner Set Top Boxes
- PVRs & Home Gateways
- Single-ended or Balanced Output
- High Output IP₃: +27 dBm
- Low Noise Figure: 3.5 dB
- Single Positive Supply: +5V
- 75 Ohm Input

Electrical Specifications, 75 Ohm System, $T_A = +25^\circ \text{C}$, $V_{dd} = +5V$

Parameter*	Min.	Typ.	Max.	Units
Frequency Range		0.04 - 0.96		GHz
Gain	2	5		dB
Gain Variation over Temperature		0.01	0.02	dB/ $^\circ \text{C}$
Noise Figure		3.5	5.2	dB
Input Return Loss		8		dB
Output Return Loss		15		dB
Output Power for 1 dB Compression (P1dB)		12.5		dBm
Output Third Order Intercept (OIP3)		27		dBm
Output Second Order Intercept (OIP2)		52		dBm
Amplitude Balance		0.3		dB
Phase Balance		2		deg
Supply Current (I _{dd})		120		mA

Absolute Maximum Ratings

Drain Bias Voltage (V_{dd})	+7V
RF Input Power (RFIN)($V_{dd} = +3 \text{ Vdc}$)	0 dBm
Channel Temperature	150 $^\circ \text{C}$
Continuous Pdiss ($T = 85^\circ \text{C}$) (derate 20 mW/ $^\circ \text{C}$ above 85 $^\circ \text{C}$)	1.32 W
Thermal Resistance (channel to ground paddle)	49 $^\circ \text{C/W}$
Storage Temperature	-65 to +150 $^\circ \text{C}$
Operating Temperature	-40 to +85 $^\circ \text{C}$
ESD Sensitivity (HBM)	Class 1A

Typical Supply Current vs. V_{dd}

V_{dd} (Vdc)	I _{dd} (mA)
3.0	117.1
3.3	117.5
3.6	117.9
4.5	118.5
5.0	119.0
5.5	119.3



ATTENTION
STATIC SENSITIVE DEVICES
 HANDLE ONLY AT
 STATIC SAFE WORK STATIONS

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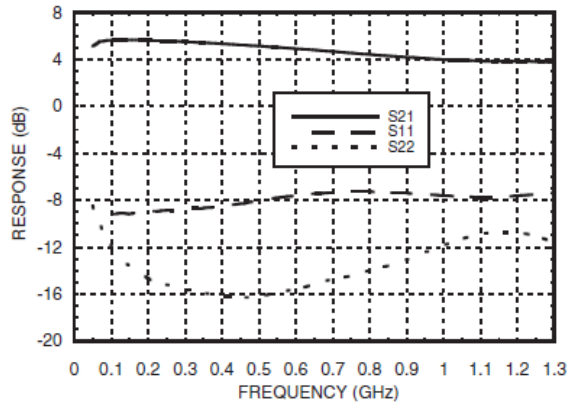
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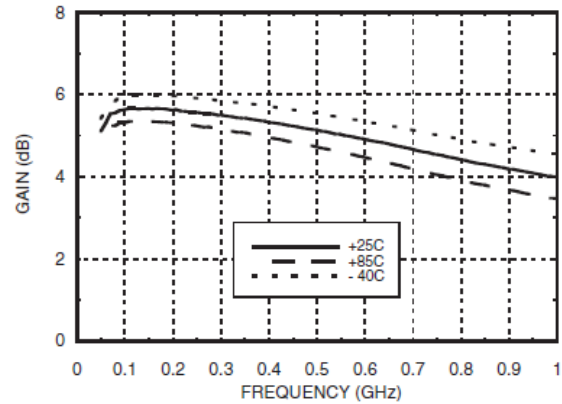
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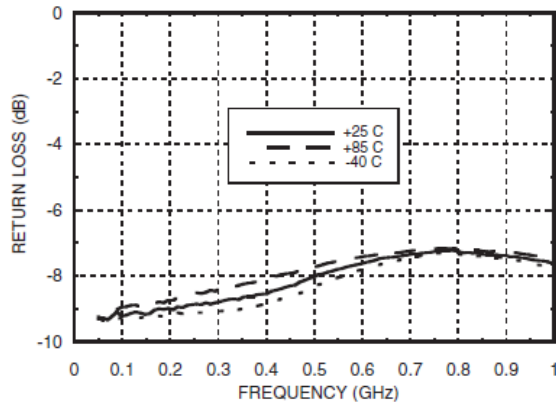
Broadband Gain & Return Loss



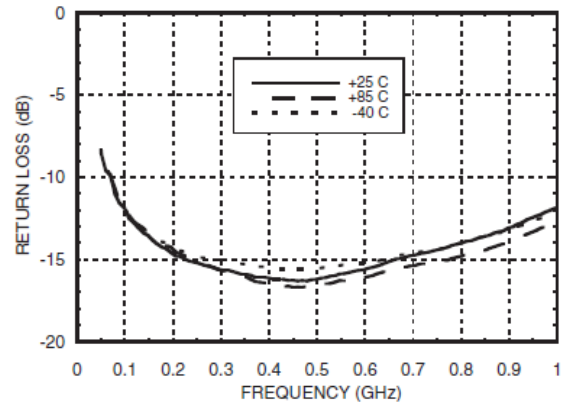
Gain vs. Temperature



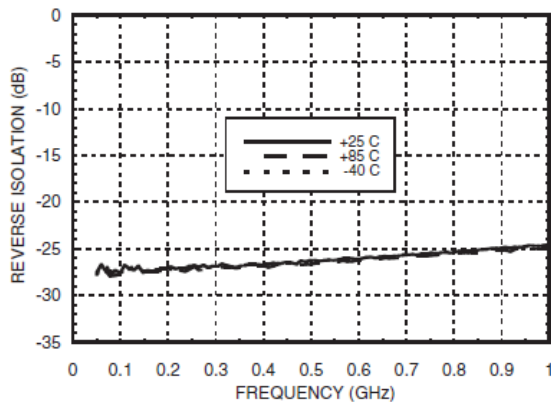
Input Return Loss vs. Temperature



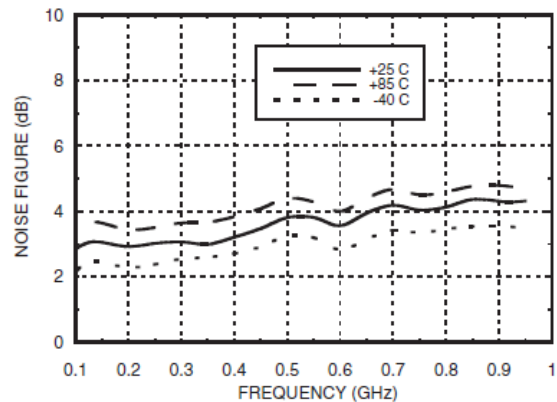
Output Return Loss vs. Temperature



Reverse Isolation vs. Temperature



Noise Figure vs. Temperature





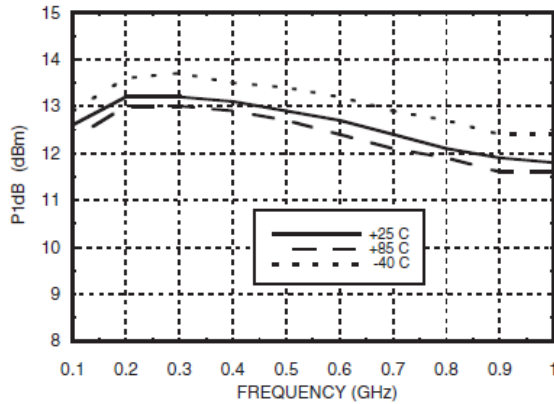
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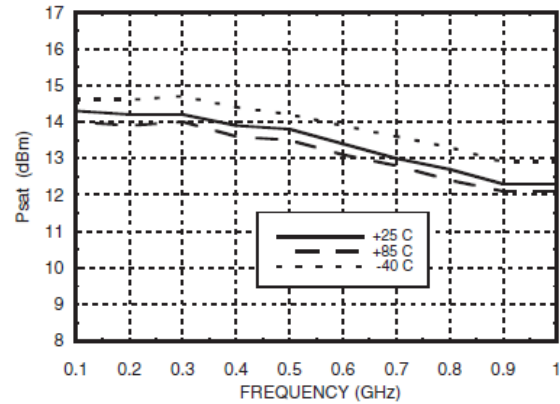
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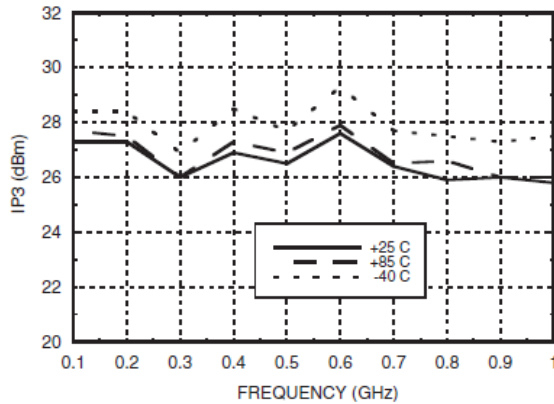
P1dB vs. Temperature



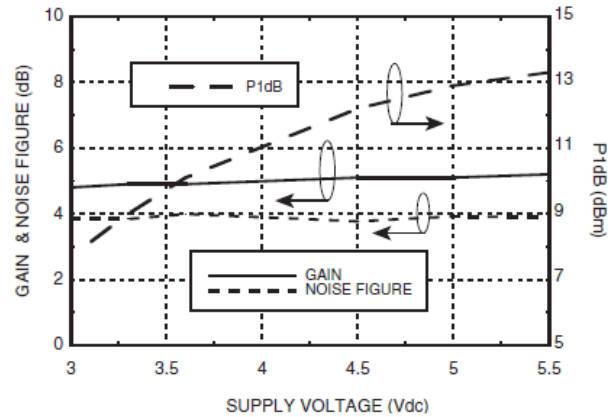
Psat vs. Temperature



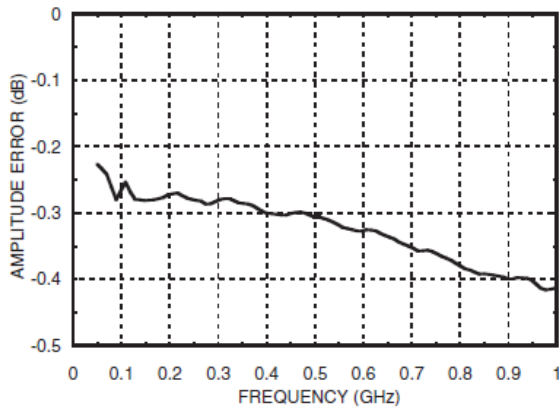
Output IP3 vs. Temperature



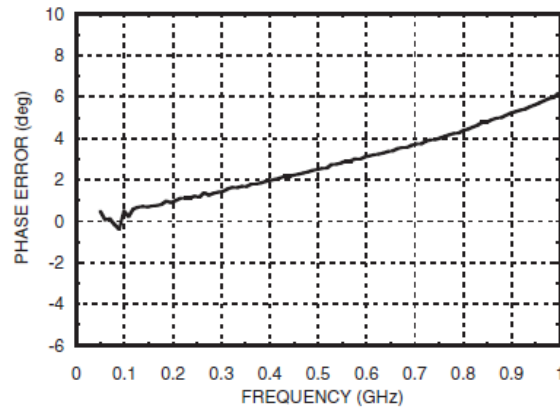
Gain, Noise Figure & P1dB vs. Supply Voltage @ 500 MHz



Amplitude Balance *



Phase Balance *

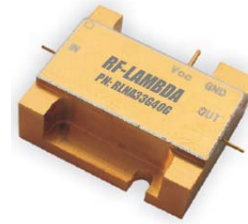
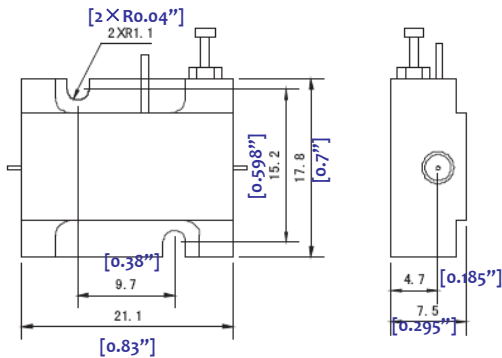




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Heat Sink required during operation. (Heat Sink sold separately)

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