



RF-LAMBDA

The power beyond expectations

R13G25GSA

Low Noise Amplifier 13-25GHz NF: 3.5dB



- Microwave Point-to-Point Radios
- Millimeterwave Point-to-Point Radios
- VSAT & SATCOM
- Noise Figure : 3.5 dB
- Gain: 20 dB
- Single Supply : +3V @ 41mA
- Small Size: 1.06 x 2.02 mm

Electrical Specifications, $T_A = +25^\circ \text{C}$, $V_{dd} = +3\text{V}$

Parameter	Min.	Typ.	Max.	Units
Frequency Range		13 - 25		GHz
Gain	16	21	26	dB
Gain Variation Over Temperature		.03	.04	dB/ $^\circ \text{C}$
Noise Figure		3.5	4.5	dB
Input Return Loss	6	13		dB
Output Return Loss	6	14		dB
Reverse Isolation	39	45		dB
Output Power for 1dB Compression (P1dB)	1	5		dBm
Saturated Output Power (Psat)	3	8		dBm
Output Third Order Intercept (IP3)	8	13		dBm
Supply Current (Idd)(Vdd = +3V)		41	55	mA

Absolute Maximum Ratings

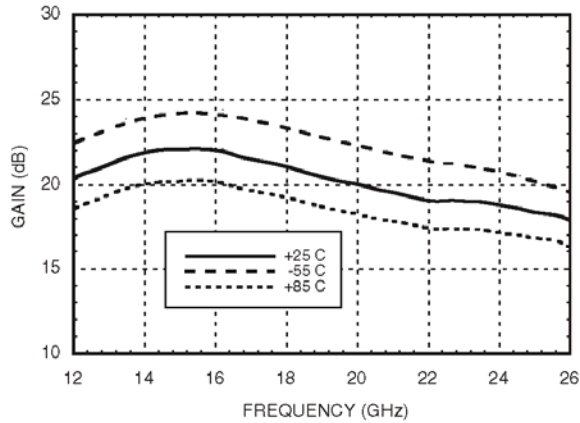
Drain Bias Voltage (Vdd)	+5.5 Vdc
RF Input Power (RFIN)(Vdd = +3 Vdc)	-5 dBm
Channel Temperature	175 $^\circ \text{C}$
Continuous Pdis (T = 85 $^\circ \text{C}$) (derate 3.62 mW/ $^\circ \text{C}$ above 85 $^\circ \text{C}$)	0.326 W
Thermal Resistance (channel to die bottom)	276 $^\circ \text{C/W}$
Storage Temperature	-65 to +150 $^\circ \text{C}$
Operating Temperature	-55 to +85 $^\circ \text{C}$



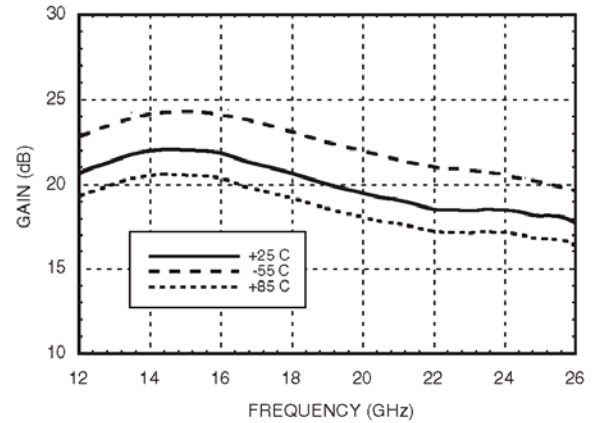
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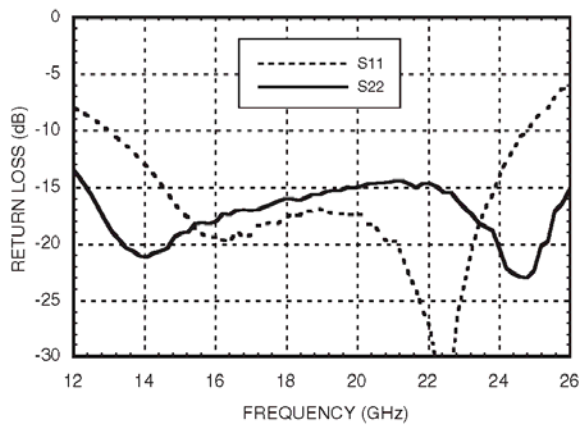
Gain vs. Temperature @ Vdd = +3V



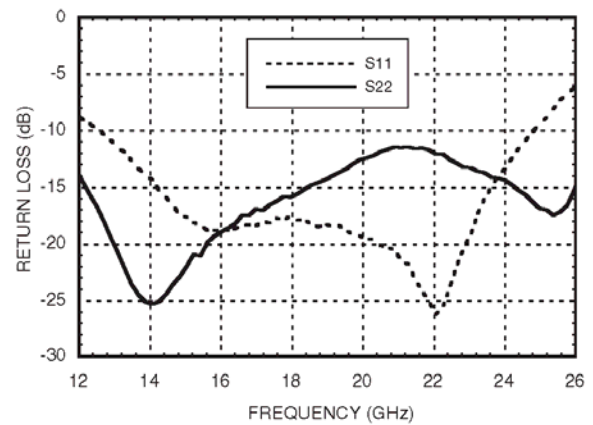
Gain vs. Temperature @ Vdd = +5V



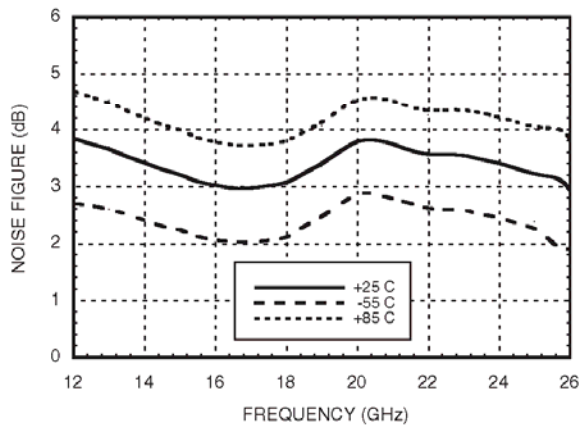
Return Loss @ Vdd = +3V



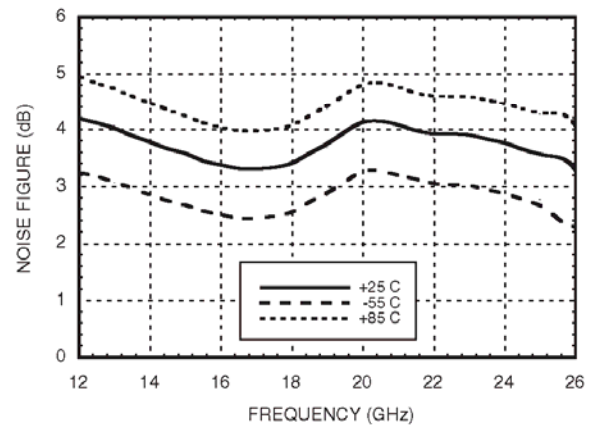
Return Loss @ Vdd = +5V



Noise Figure vs. Temperature @ Vdd = +3V

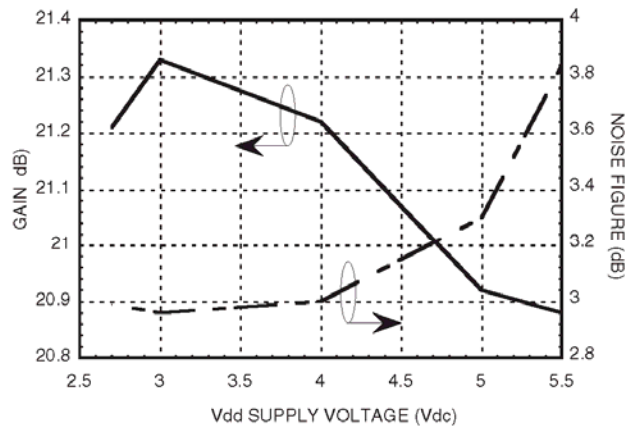


Noise Figure vs. Temperature @ Vdd = +5V

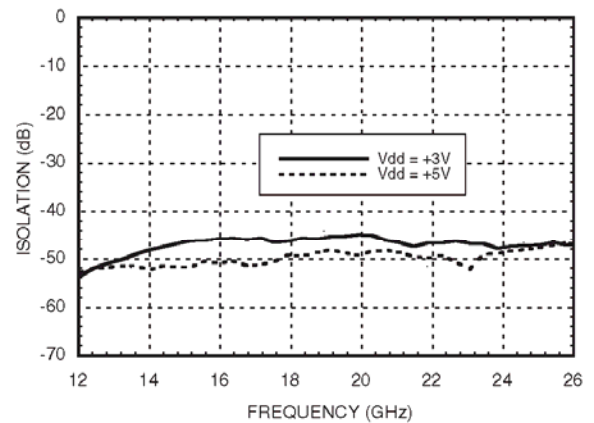




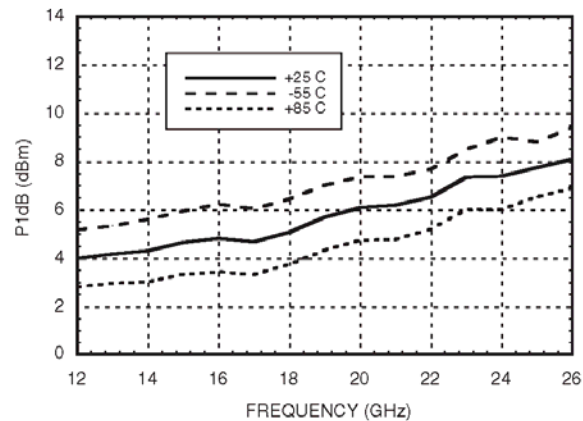
**Gain & Noise Figure
vs. Supply Voltage @ 18 GHz**



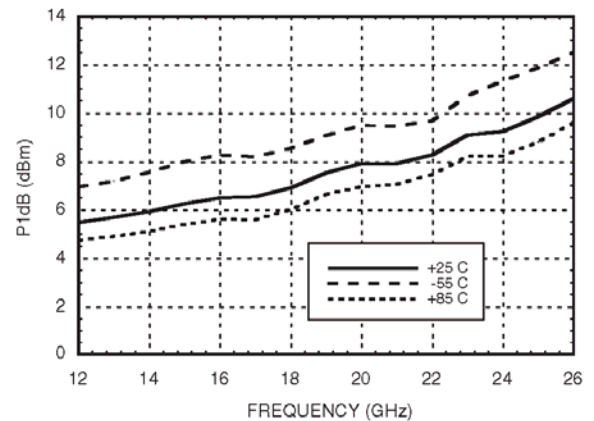
Isolation



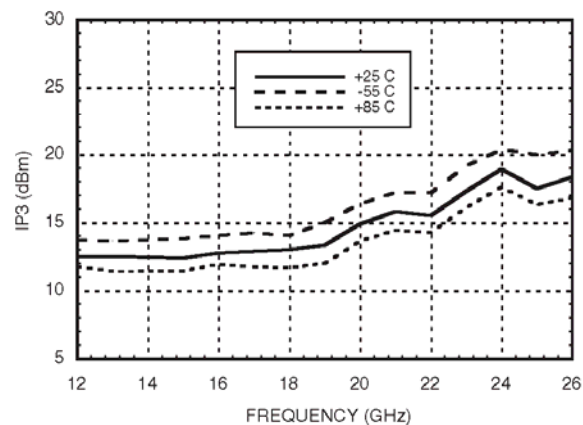
Output P1dB @ Vdd = +3V



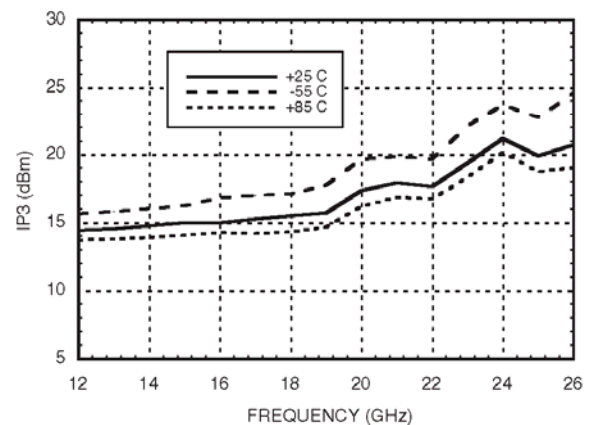
Output P1dB @ Vdd = +5V



Output IP3 @ Vdd = +3V



Output IP3 @ Vdd = +5V

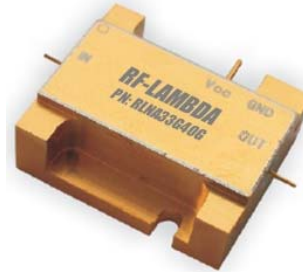
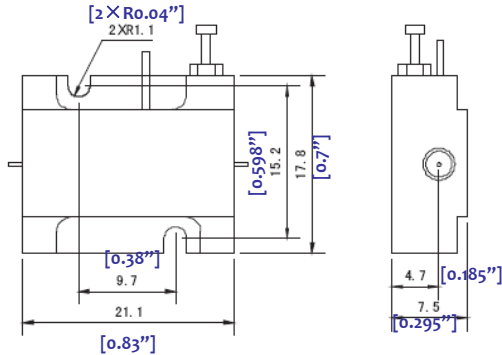




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Heat Sink required during operation. (Heat Sink sold separately)

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