



RF-LAMBDA

The power beyond expectations

R21G29GSA

Low Noise Amplifier 21-29GHz NF: 2.5dB



- Point-to-Point Radios
- Point-to-Multi-Point Radios & VSAT
- Test Equipment & Sensors
- Military End-Use
- 2.5 dB Noise Figure
- 13 dB Gain
- +3V @ 35 mA Supply
- 50 Ohm Matched Input/Output
- RoHS Compliant 3x3 mm SMT Package

Electrical Specifications, $T_A = +25^\circ \text{C}$, $V_{dd} = +3\text{V}$, $I_{dd} = 35 \text{ mA}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	21 - 24			24 - 26			26 - 29			GHz
Gain	10.5	13.5		10	13		9	12		dB
Gain Variation Over Temperature		0.016	0.025		0.016	0.025		0.016	0.025	dB/ ° C
Noise Figure		3.25	5		3	3.5		2.5	3	dB
Input Return Loss		10			11			9		dB
Output Return Loss		14			10			9		dB
Output Power for 1 dB Compression (P1dB)		8			8.5			8.5		dBm
Saturated Output Power (Psat)		11			11.5			11.5		dBm
Output Third Order Intercept (IP3)		19			19			19		dBm
Supply Current (Idd) (Vdd = +3V)		35			35			35		mA

Absolute Maximum Ratings

Drain Bias Voltage (Vdd)	+5.5 Vdc
RF Input Power (RFIN)(Vdd = +3.0 Vdc)	+5 dBm
Channel Temperature	175 ° C
Continuous P _{diss} (T= 85 ° C) (derate 5.43 mW/° C above 85 ° C)	0.489 W
Thermal Resistance (channel to ground paddle)	184 ° C/W
Storage Temperature	-65 to +150 ° C
Operating Temperature	-40 to +85 ° C

Typical Supply Current vs. Vdd

Vdd (Vdc)	Idd (mA)
+2.7	34
+3.0	35
+4.0	38
+5.0	41



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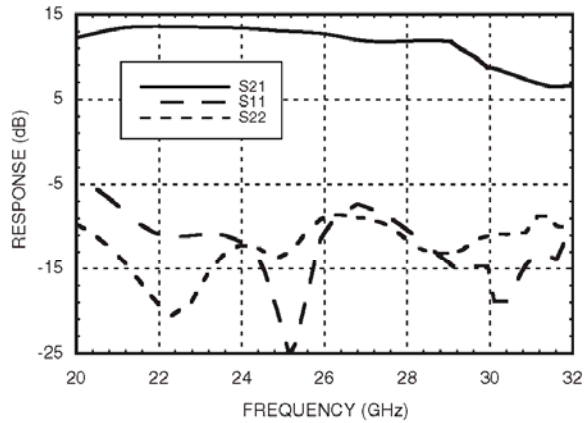


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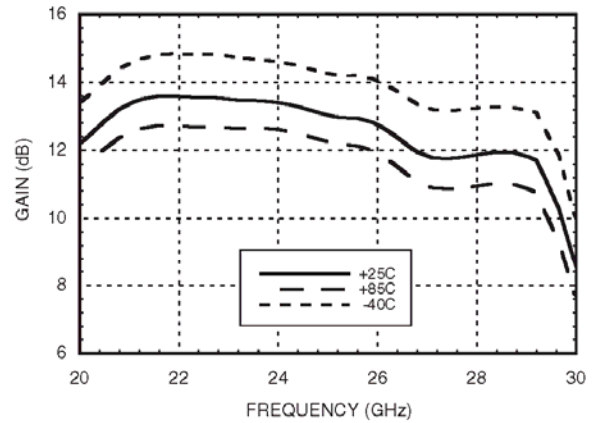
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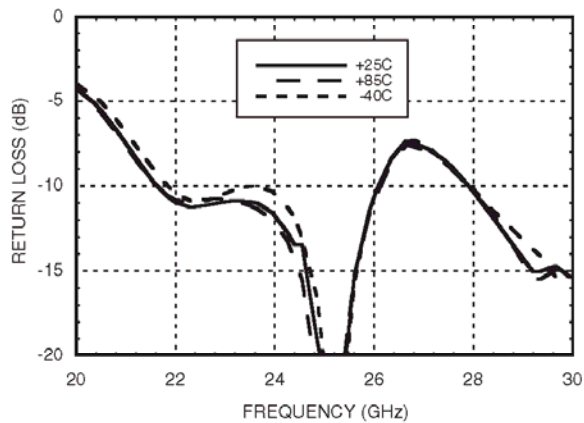
Broadband Gain & Return Loss



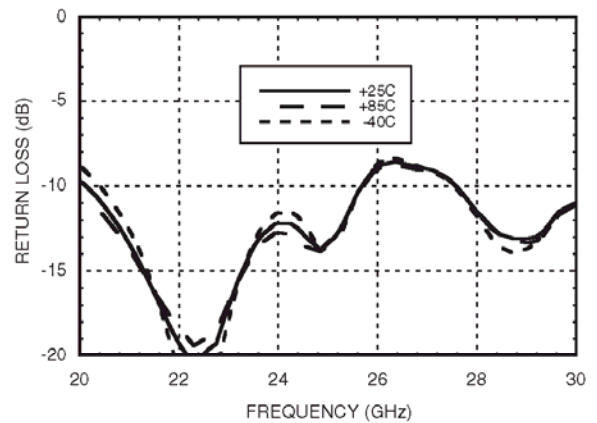
Gain vs. Temperature



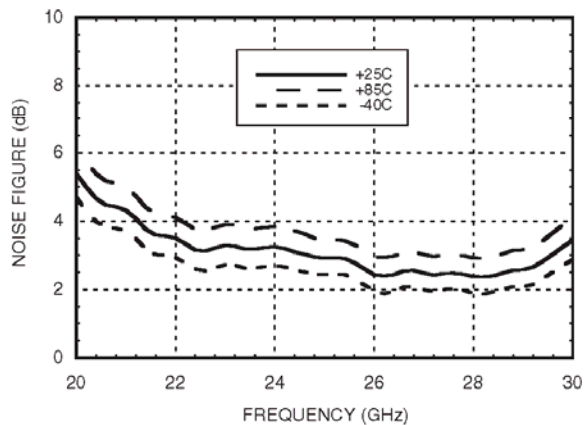
Input Return Loss vs. Temperature



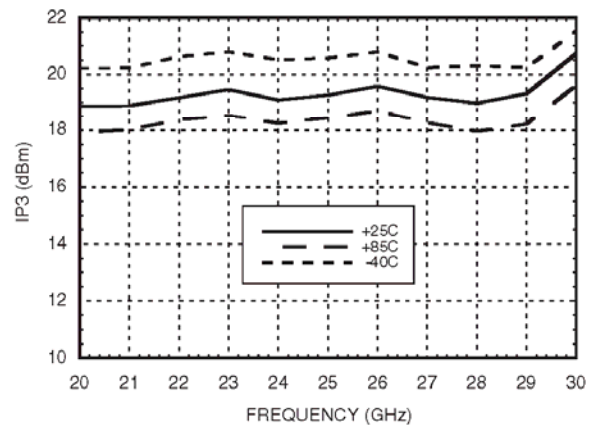
Output Return Loss vs. Temperature



Noise Figure vs. Temperature



Output IP3 vs. Temperature



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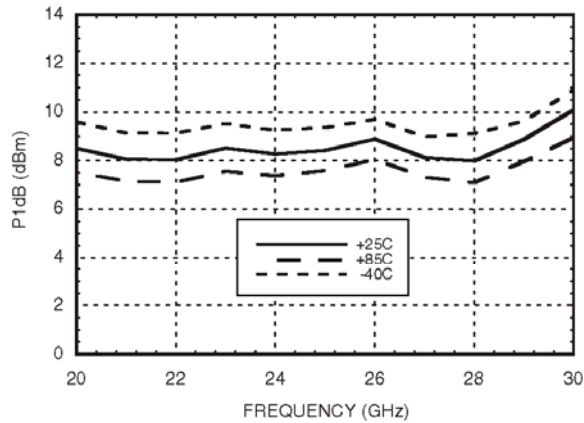
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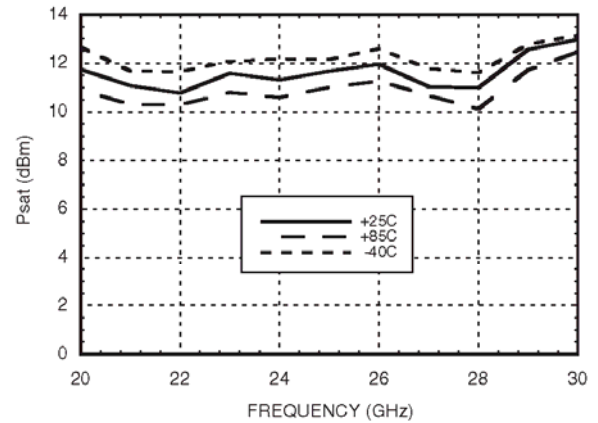
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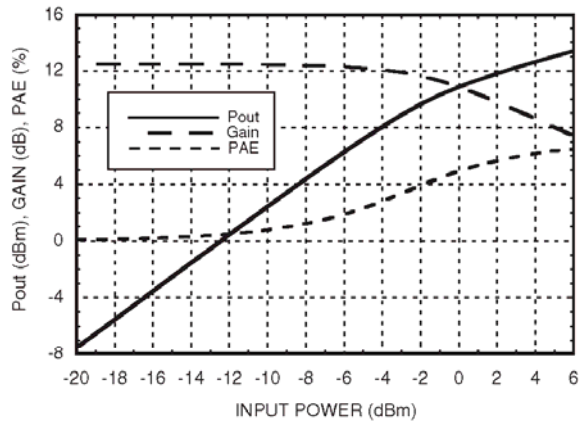
P1dB vs. Temperature



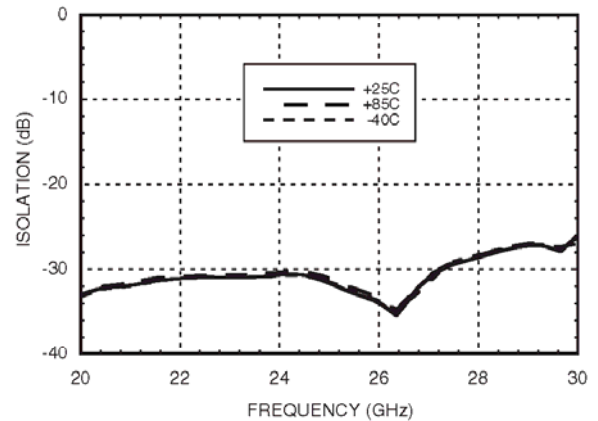
Psat vs. Temperature



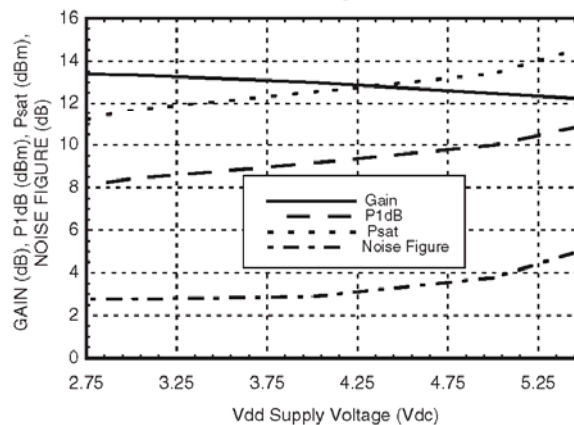
Power Compression @ 25 GHz



Reverse Isolation vs. Temperature



Gain, Power & Noise Figure vs. Supply Voltage @ 25 GHz

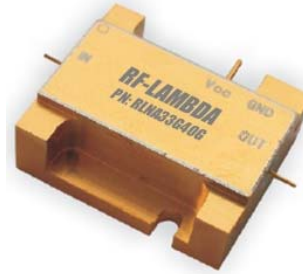
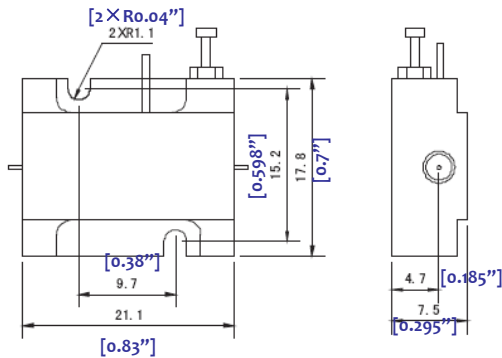




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Heat Sink required during operation. (Heat Sink sold separately)

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