



## Low Noise Amplifier 7-17GHz NF: 1.8dB



- Point-to-Point Radios
- Point-to-Multi-Point Radios & VSAT
- Test Equipment and Sensors
- Military & Space
- Noise Figure: 1.8 dB
- Gain: 20 dB
- OIP3: +20 dBm
- Single Supply: 3V @ 65 mA
- 50 Ohm Matched Input/Output
- Die Size: 2.52 x 1.32 x 0.1 mm

### Electrical Specifications, $T_A = +25^\circ \text{C}$ , $V_{dd} 1, 2, 3 = +3\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	7 - 9			9 - 12			12 - 17			GHz
Gain	17	19.5		18	20.5		18	20.5		dB
Gain Variation Over Temperature		0.02	0.03		0.02	0.03		0.02	0.03	dB/ ° C
Noise Figure		2.5	3.3		2.0	2.6		1.8	2.3	dB
Input Return Loss		8			10			10		dB
Output Return Loss		13			15			17		dB
Output Power for 1 dB Compression (P1dB)	10	13		12	15		13	16		dBm
Saturated Output Power (Psat)		15			16			17		dBm
Output Third Order Intercept (IP3)		20			20			20		dBm
Supply Current (Idd)(Vdd = +3V)		65	88		65	88		65	88	mA

### Absolute Maximum Ratings

Drain Bias Voltage (Vdd1, Vdd2, Vdd3)	+4 Vdc
RF Input Power (RFIN)(Vdd = +3.0 Vdc)	+5 dBm
Channel Temperature	175 ° C
Continuous Pdiss (T= 85 ° C) (derate 14 mW/° C above 85 ° C)	1.25 W
Thermal Resistance (channel to die bottom)	71 ° C/W
Storage Temperature	-65 to +150 ° C
Operating Temperature	-55 to +85 ° C
ESD Sensitivity (HBM)	Class 1A

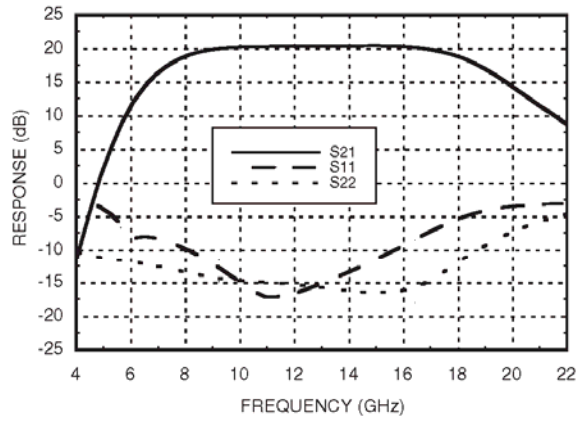
### Typical Supply Current vs. Vdd

Vdd (Vdc)	Idd (mA)
+2.5	61
+3.0	65
+3.5	69

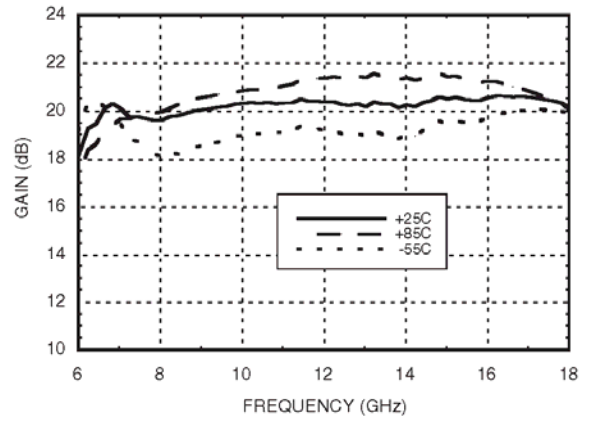




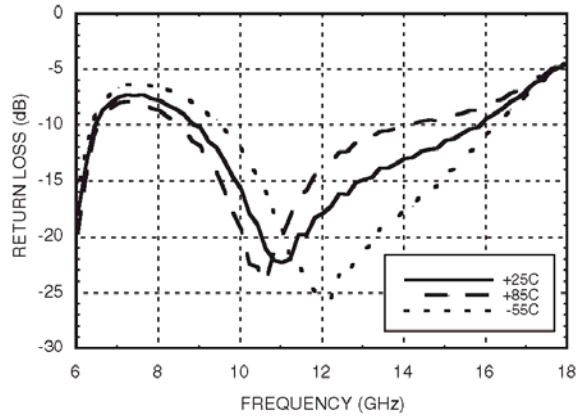
### Broadband Gain & Return Loss



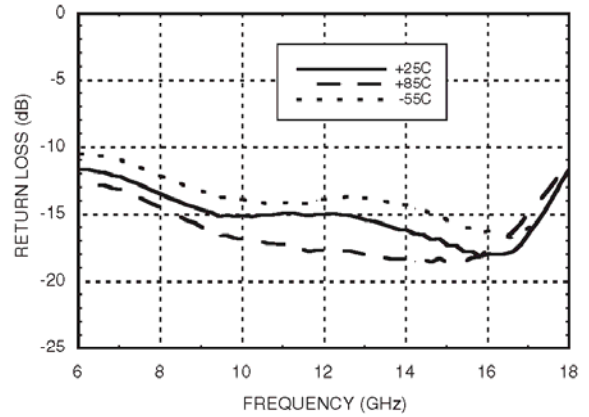
### Gain vs. Temperature



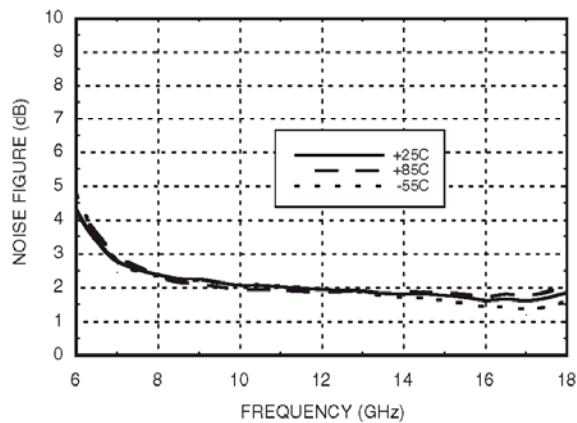
### Input Return Loss vs. Temperature



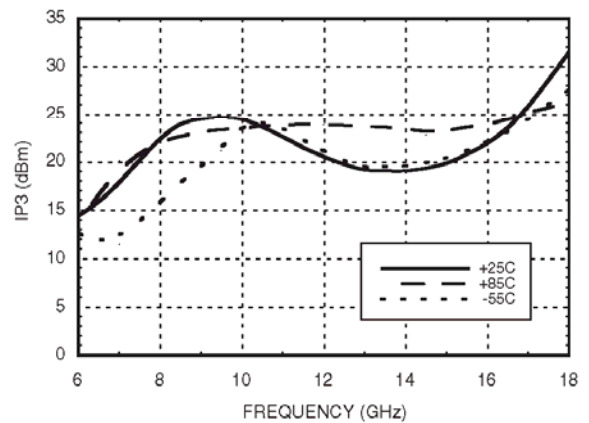
### Output Return Loss vs. Temperature



### Noise Figure vs. Temperature

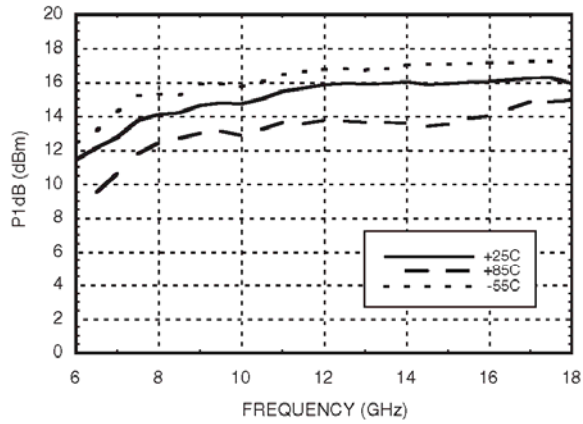


### Output IP3 vs. Temperature

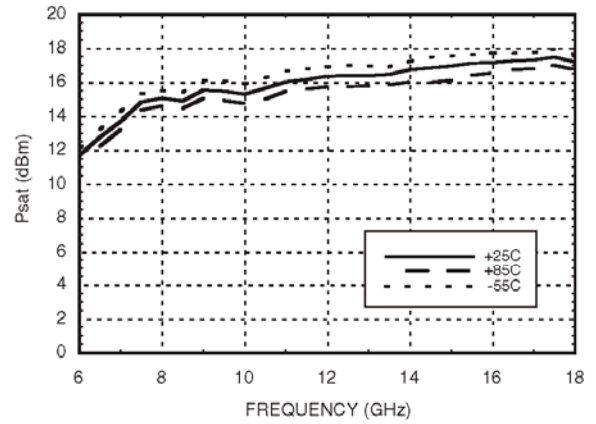




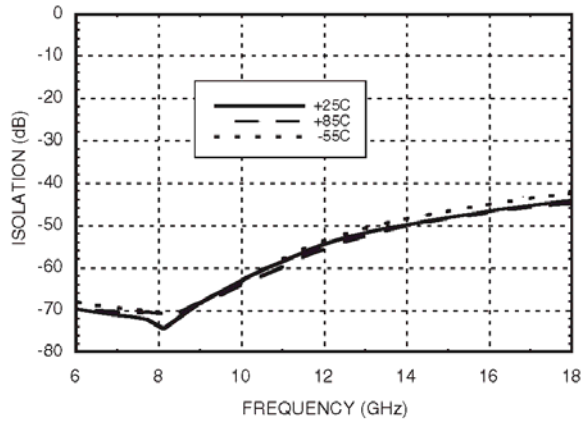
**P1dB vs. Temperature**



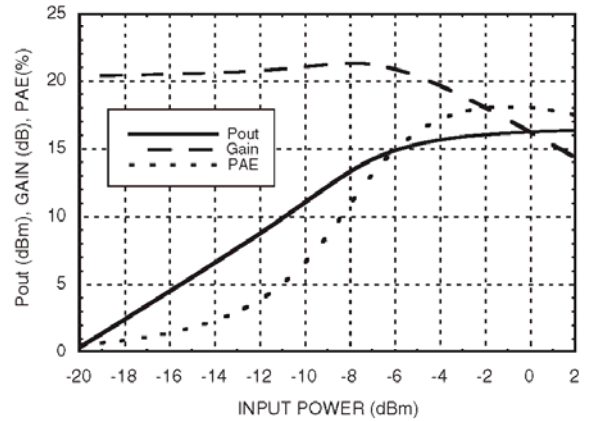
**Psat vs. Temperature**



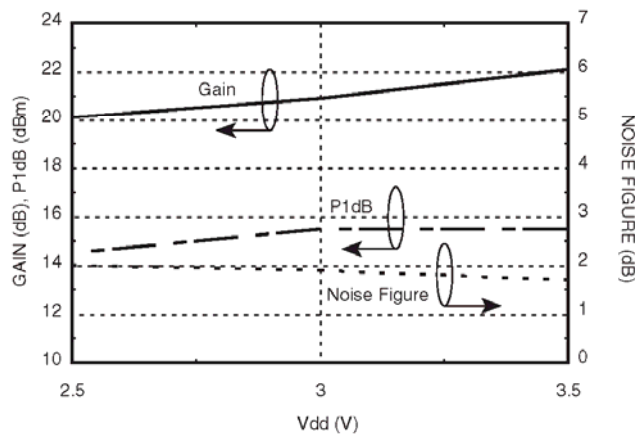
**Reverse Isolation vs. Temperature**



**Power Compression @ 12 GHz**



**Gain, Noise Figure & Power vs. Supply Voltage @ 12 GHz**

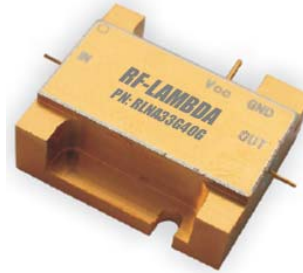
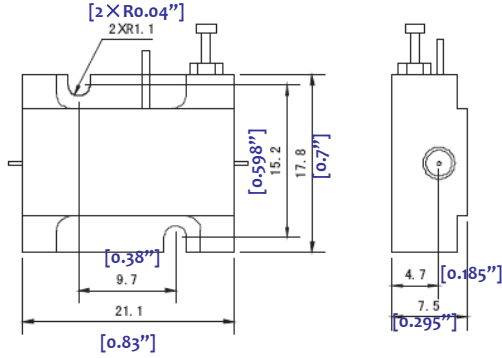




# RF-LAMBDA

The power beyond expectations

R07G17GSA



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

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