



## Low Noise Amplifier 13-25GHz NF: 3.5dB



- Point-to-Point Radios
- Point-to-Multi-Point Radios & VSAT
- Test Equipment & Sensors
- Military End-Use
- Noise Figure: 3.5 dB
- Gain: 22 dB
- Single Positive Supply: +3V @ 43 mA
- 50 Ohm Matched Input/Output
- RoHS Compliant 4x4 mm SMT Package

**Electrical Specifications,  $T_A = +25^\circ C$ ,  $V_{dd} = +3V$ ,  $I_{dd} = 43 mA$**

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	13 - 18			18 - 22			22 - 25			GHz
Gain	19	22		17	20		16	19		dB
Gain Variation Over Temperature		0.025	0.035		0.025	0.035		0.025	0.035	dB/ ° C
Noise Figure		3.5	4.0		3.5	4.0		3.5	4.5	dB
Input Return Loss		15			15			10		dB
Output Return Loss		15			20			15		dB
Output Power for 1 dB Compression (P1dB)		7			8			9		dBm
Saturated Output Power (Psat)		9			11			11.5		dBm
Output Third Order Intercept (IP3)		16			19			20		dBm
Supply Current (Idd) (Vdd = +3V)		43			43			43		mA

### Absolute Maximum Ratings

Drain Bias Voltage (Vdd)	+5.5 Vdc
RF Input Power (RFIN)(Vdd = +3.0 Vdc)	0 dBm
Channel Temperature	175 ° C
Continuous P <sub>diss</sub> (T= 85 ° C) (derate 3.62 mW/° C above 85 ° C)	0.326 W
Thermal Resistance (channel to ground paddle)	276 ° C/W
Storage Temperature	-65 to +150 ° C
Operating Temperature	-40 to +85 ° C

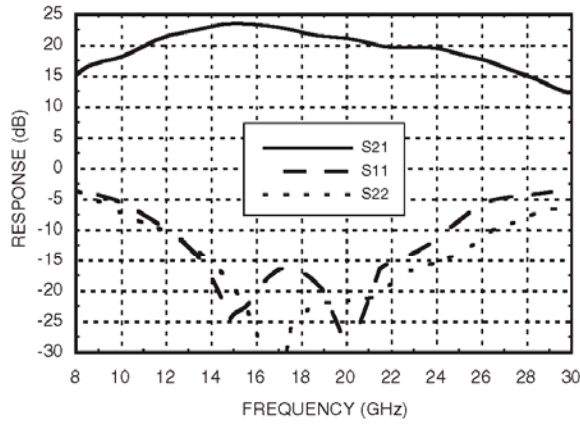
### Typical Supply Current vs. Vdd

Vdd (Vdc)	Idd (mA)
+2.7	42
+3.0	43
+3.3	44

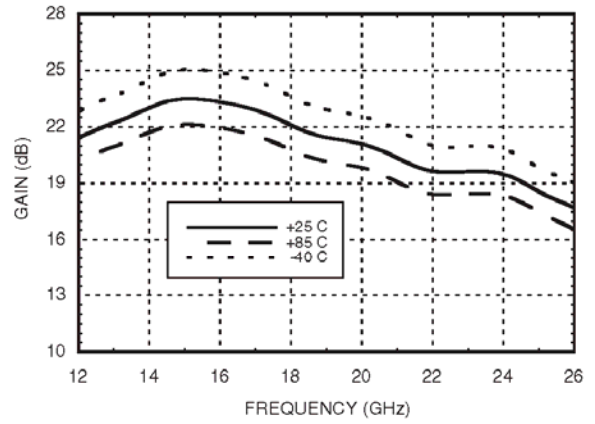




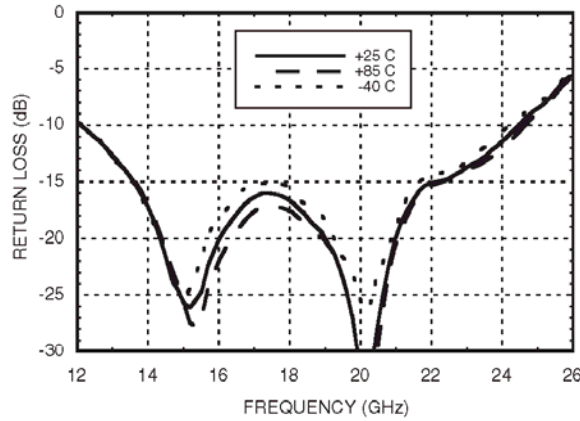
### Broadband Gain & Return Loss



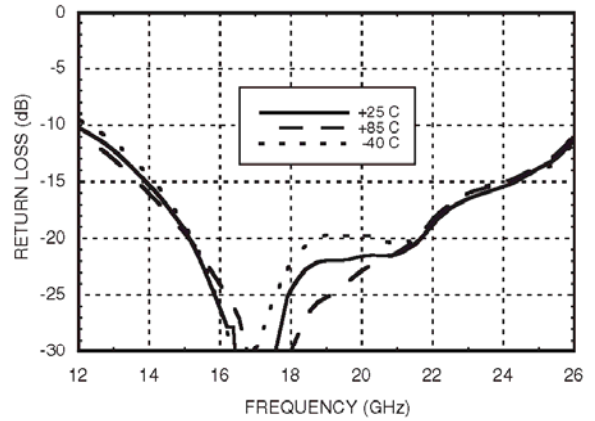
### Gain vs. Temperature



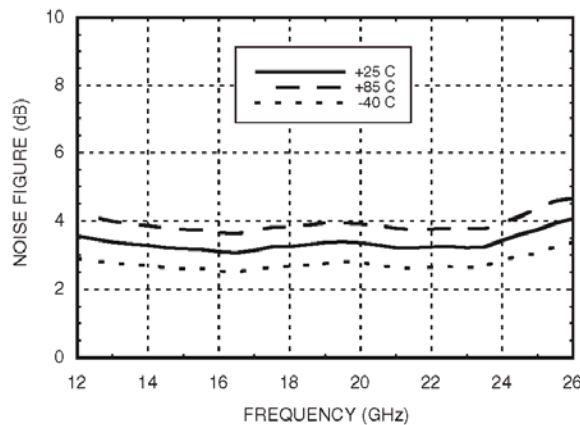
### Input Return Loss vs. Temperature



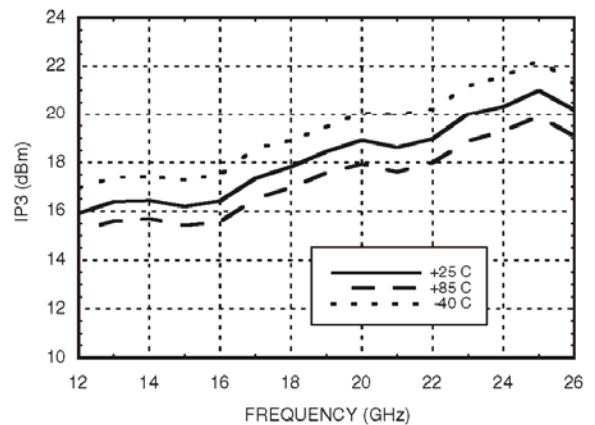
### Output Return Loss vs. Temperature



### Noise Figure vs. Temperature

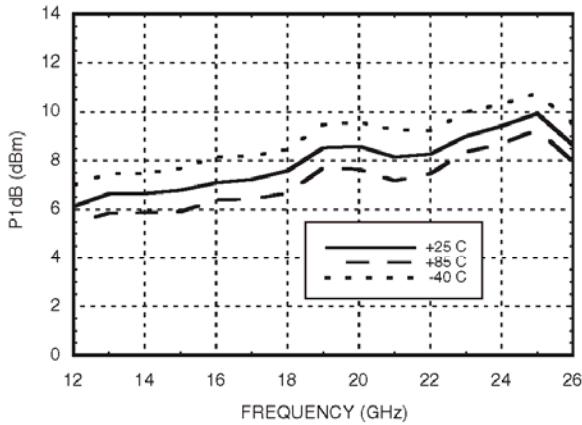


### Output IP3 vs. Temperature

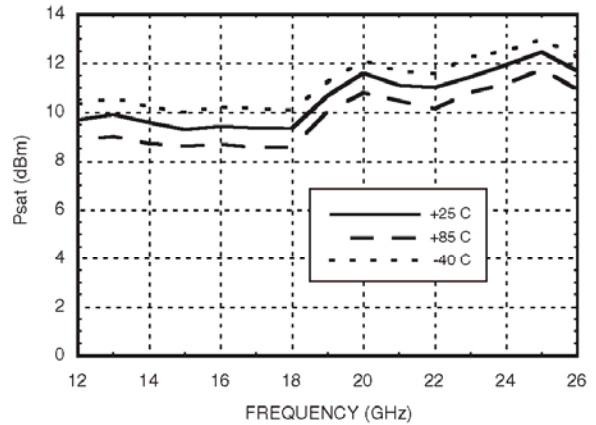




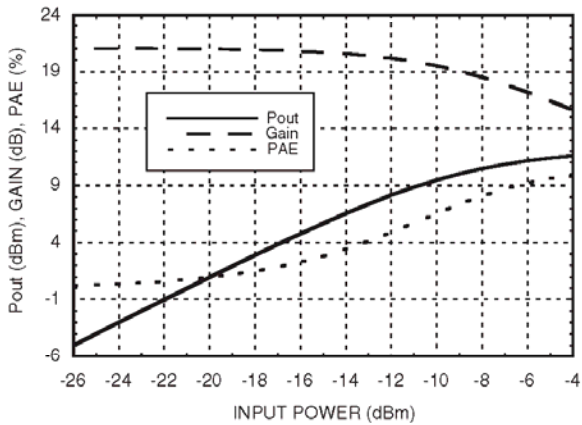
**P1dB vs. Temperature**



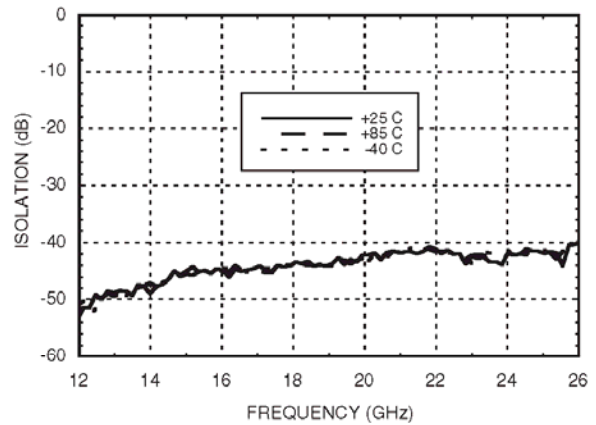
**Psat vs. Temperature**



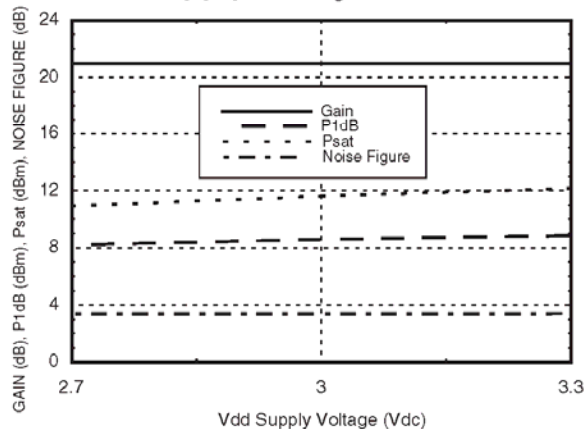
**Power Compression @ 20 GHz**



**Reverse Isolation vs. Temperature**



**Gain, Power & Noise Figure vs. Supply Voltage @ 20 GHz**

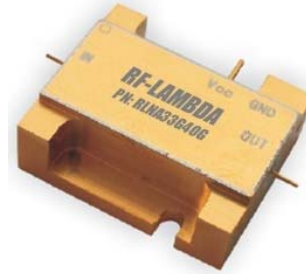
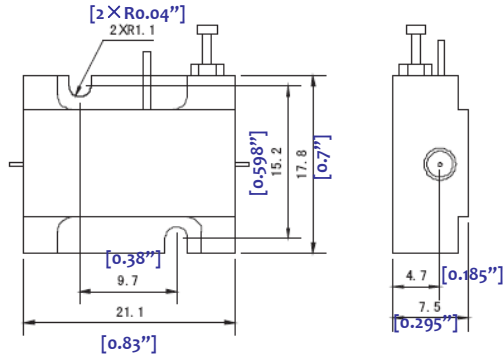




# RF-LAMBDA

The power beyond expectations

R13G25GSB



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

## Important Notice

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.

RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.

Low Noise Amplifier 13-25GHz NF: 3.5dB