Low Noise Amplifier
3.5GHz~7GHz

Features

- Gain: 16.5dB Typical
- Noise Figure: 2.0dB Typical
- P1dB Output Power: +16dBm Typical
- Supply Voltage: +5V

RoHS Compliant

Typical Applications

- Wireless Infrastructure
- RF Microwave & VSAT
- Military & Aerospace

Electrical Specifications, TA = +25 ℃, Vcc = +5V

Parameter	Min.	Typ.	Max.	Units
Frequency Range	3.5		7	GHz
Gain	16	16.5		dB
Gain Flatness		±0.5	±0.8	dB
Gain Variation Over Temperature (-45 ~ +85)			±1.5	dB
Noise Figure		2.0	3.2	dB
Input VSWR		1.9		: 1
Output VSWR		2.0		: 1
Output 1dB Compression Point (P1dB)	14	16		dBm
Saturated Output Power (Psat)		19		dBm
Output Third Order Intercept (IP3)		28		dBm
Supply Current (Vcc=+5V)		60	70	mA
Isolation S12		-43		dB
Weight	1.06			ounces
Impedance	50			Ohms
Input / Output Connectors	SMA-Female			
Finish	Standard: Gold 40 micron; Nickel 220 micron thickness			
	Option: Gold 80 micron; Nickel 180 micron thickness			
Material	Aluminum			
Package Sealing	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

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Absolute Maximum Ratings

Operating Voltage	+6V
RF Input Power	+20dBm

Biasing Up Procedure

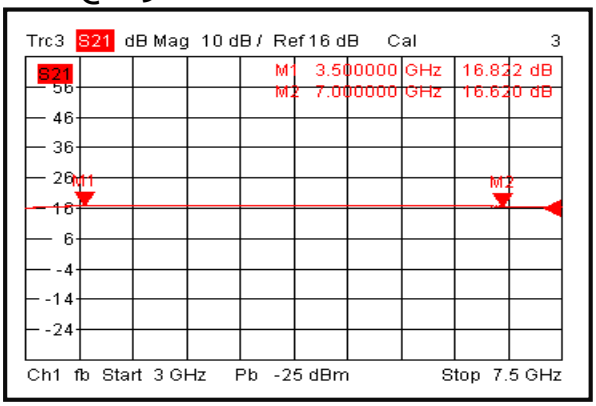
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +5V biasing
Power OFF Procedure	
Step 1	Turn off +5V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

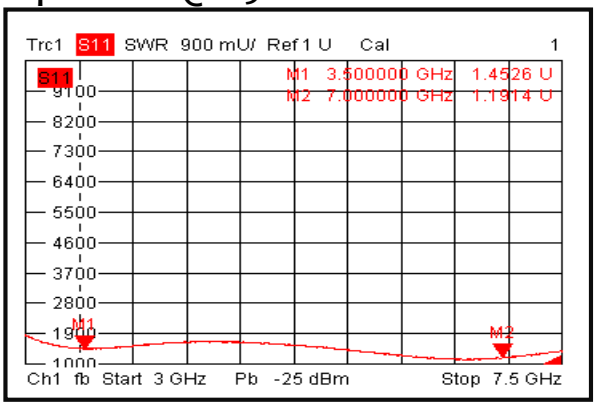
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ for 72 Hours
Shock		1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude		Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883	MIL-STD-883 (For Hermetically Sealed Units)

Typical Performance Plots

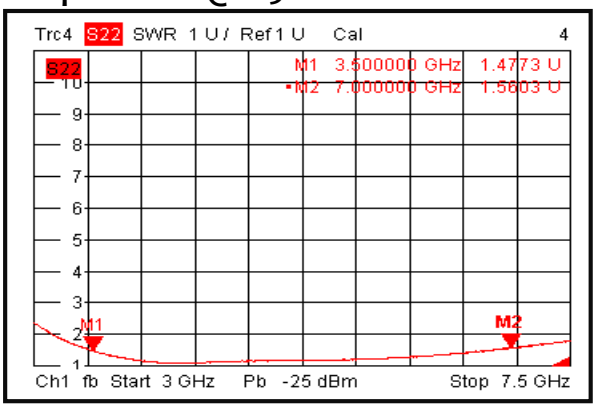
Gain @+25℃



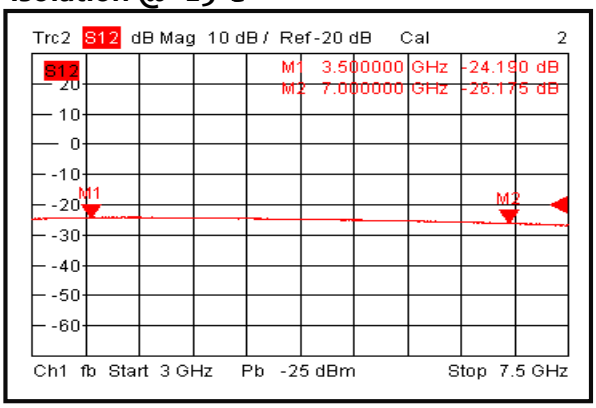
Input VSWR @+25℃



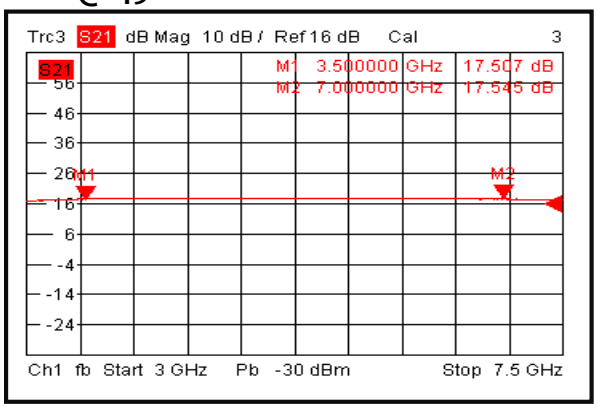
Output VSWR @+25℃



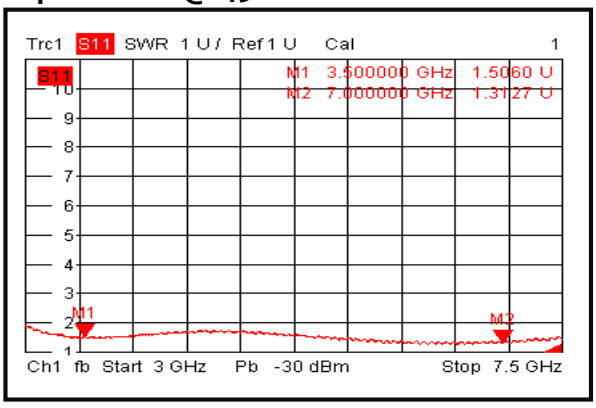
Isolation @+25℃



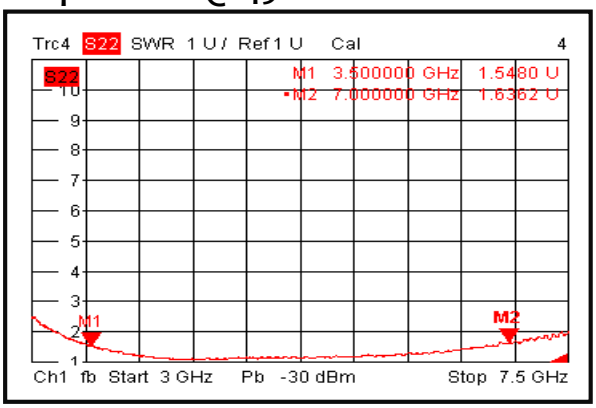
Gain @-45℃



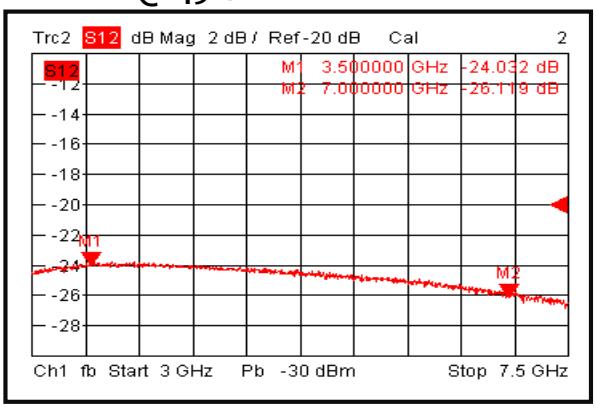
Input VSWR @-45℃



Output VSWR @-45℃



Isolation @-45℃



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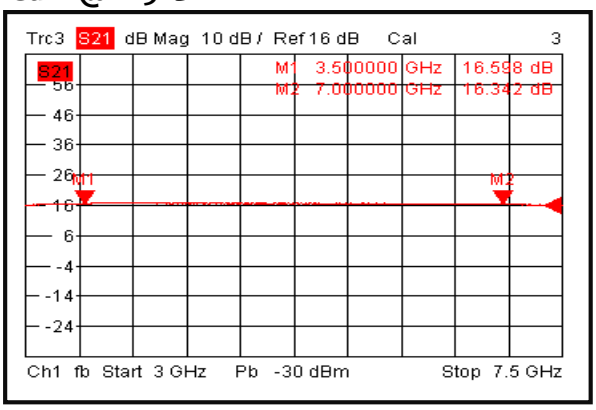
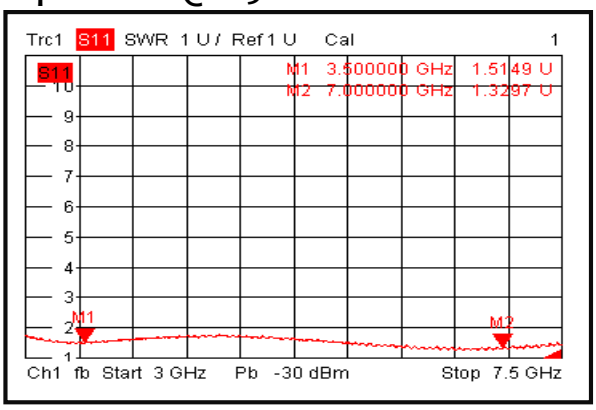
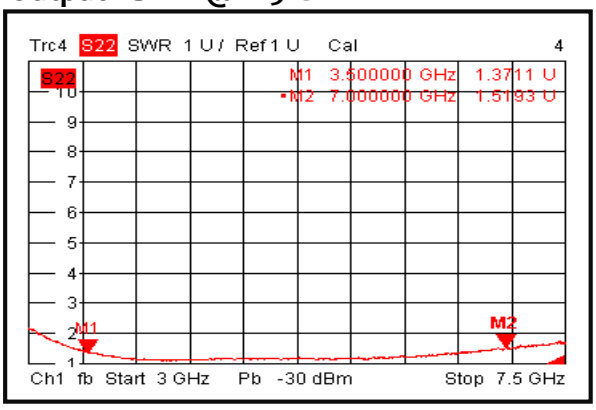
Gain @+85℃



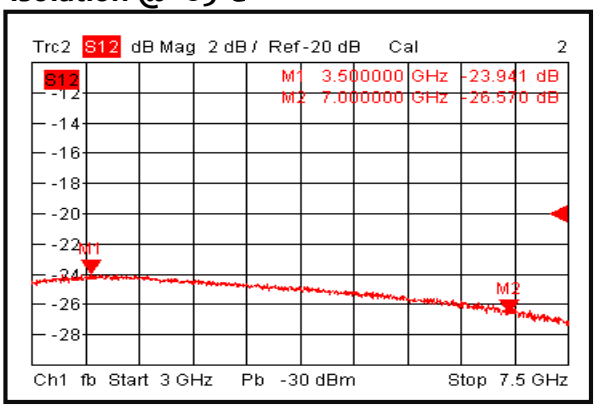
Input VSWR @+85℃



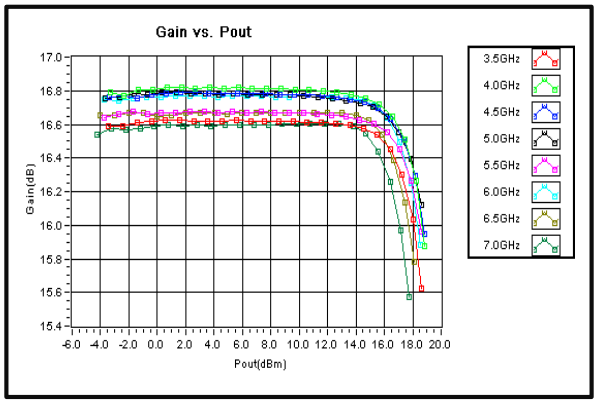
Output VSWR @+85℃



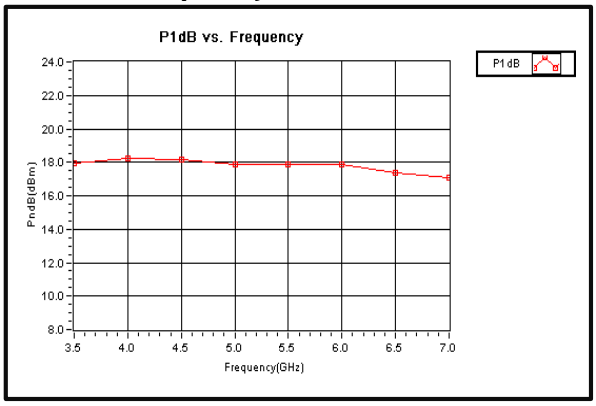
Isolation @+85℃



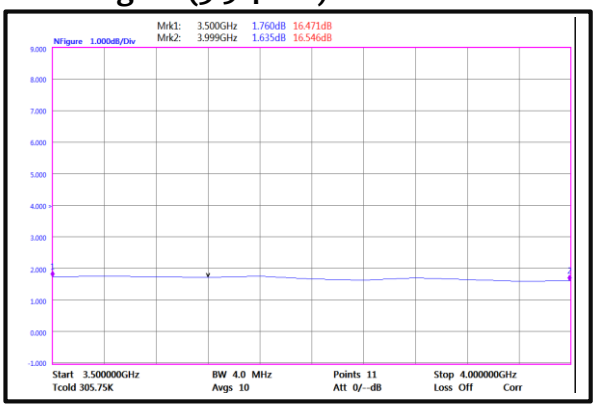
Gain vs. Output Power



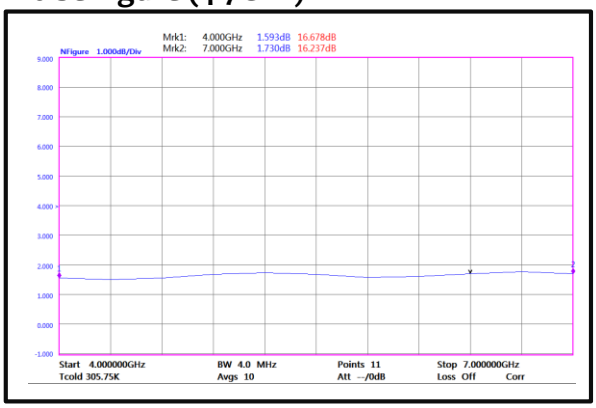
P1dB vs. Frequency



Noise Figure (3.5-4GHz)



Noise Figure (4-7GHz)



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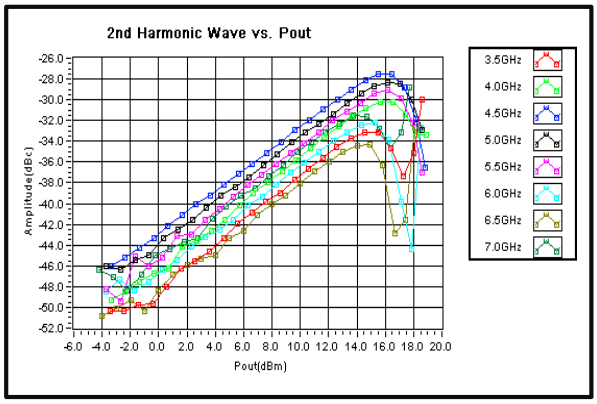
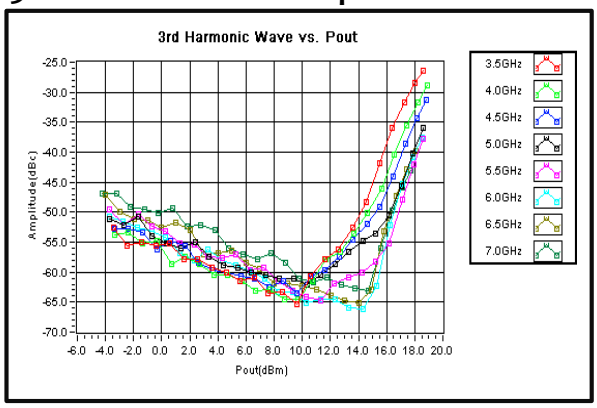
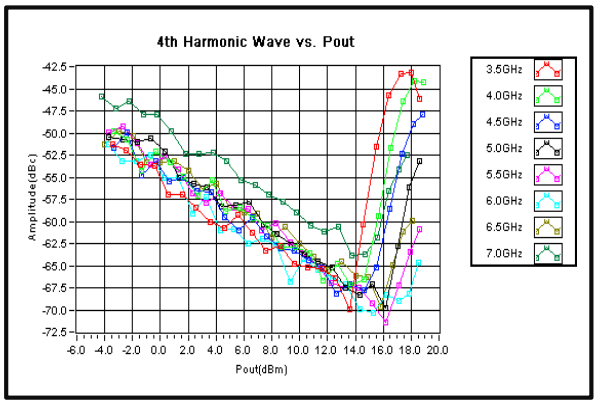
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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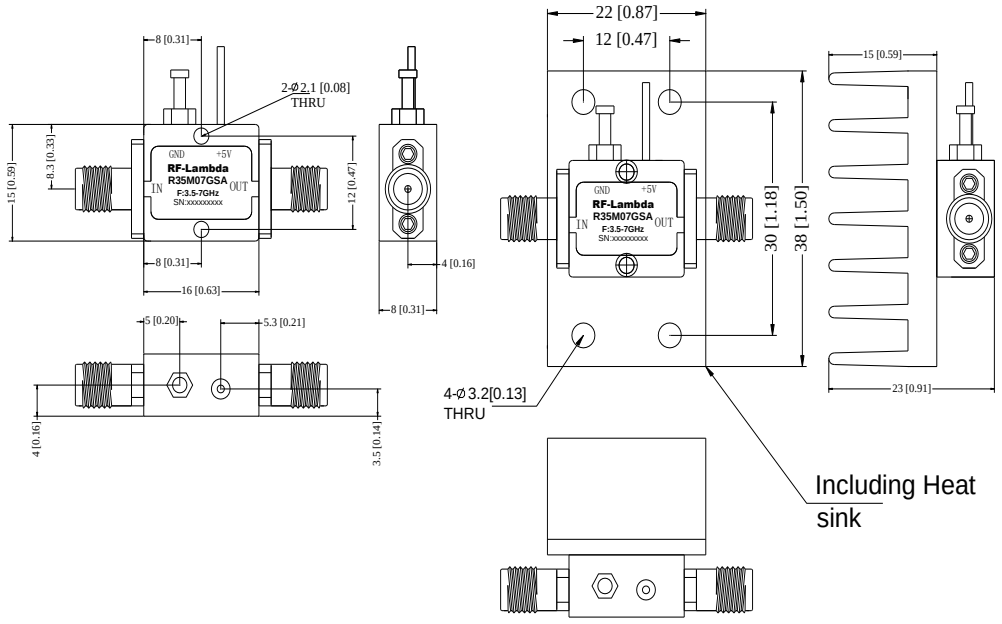
Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Ordering Information

Part No.	ECCN	Description
R35M07GSA	EAR99	3.5-7GHz Low Noise Amplifier

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