

# EMD1715QFN4 Low Noise Amplifier

DC-20 GHz GaAs PHEMT MMIC Distributed Amplifier



Eclipse Microdevices EMD1715 is a GaAs MMIC PHEMPT distributed general purpose low noise amplifier. This LNA has a small signal gain of 14 dB with noise figure less than 2.3 dB at 6 GHz. This device is ideal for applications that require a typical P1dB output power of +20dBm up to 12 GHz, while requiring only 103mA from a + 5 Volt supply.

## Technical Characteristics

### Product Features

2.7 dB Noise Figure Gain @ 10 GHz
14.5 dB Gain @ 10 GHz
+20.0 dBm P1dB Output Power
+5V @ 103 mA typical supply voltage
Low Cost QFN 4mm leadless RoHS/Hermetically sealed

### Max. Ratings

RF Input Power:	+18.0 dBm
Drain Voltage (Vdd):	+8.0 VDC
Gate Voltage (Vgg):	-2.0 to 0 VDC
Max. T <sub>j</sub> 85° C:	+110°C
Storage Temperature:	-55 to +150°
Operating Temperature:	-40 to +85°

## Electrical Specifications @ +25°C, Vdd= 5.0, Ids= 103mA

Parameters	Freq. (GHz)	Min.	Typical	Max.	Units
Gain	2.0		14.5		dB
	8.0		14.0		dB
	14.0		14.5		dB
	20.0		15.0		dB
Gain Flatness	DC to 20.0 GHz		+/- 0.20		dB
	20.0 to 40.0		+/- 0.45	+/- 0.80	dB
Gain Variation Over Temperature				.02	dB/°C
Noise Figure	2.0		4.0		dB
	8.0		1.8		
	14.0		2.4		
	20.0		3.1		
Input Return Loss			11.0		dB
Output Return Loss			10.0		dB
1dB Compression Point	2.0		20.5		dBm
	8.0		20.5		dBm
	14.0		19.5		dBm
	20.0		16.0		dBm
Saturated Output Power	2.0		21.5		dBm
	8.0		21.5		dBm
	14.0		21.0		dBm
	20.0		19.0		dBm
3rd Order Intercept Point			28.0		dBm

### About EclipseMDI

ECLIPSE MDI is located in San Jose, California. ECLIPSE has been developing high performance analog semiconductors for use in wireless radio frequency (RF), microwave, and millimeter wave for commercial and industrial applications. ECLIPSE has formed a strategic alliances - with foundries that feature leading state-of-the-art process technologies and with manufacturing facilities for high-volume production of innovative RFIC's.

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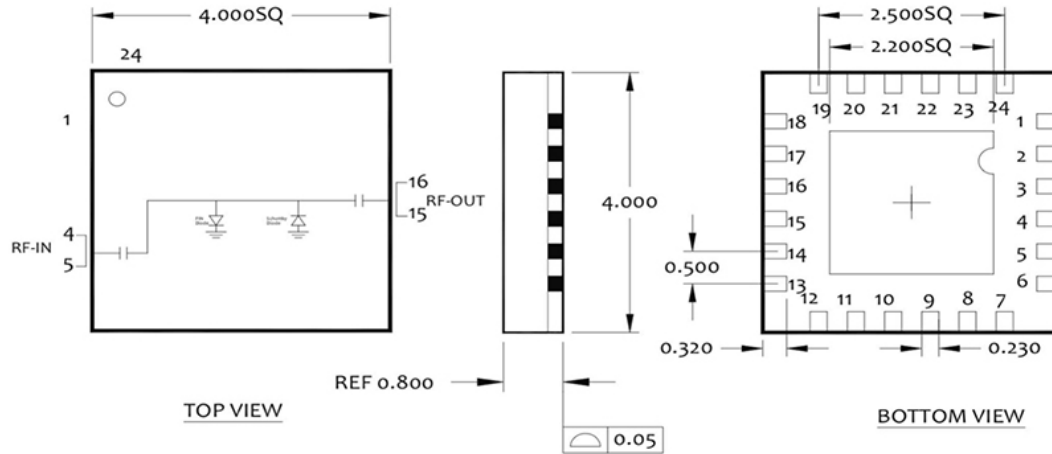
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# EMD1715QFN4 Low Noise Amplifier

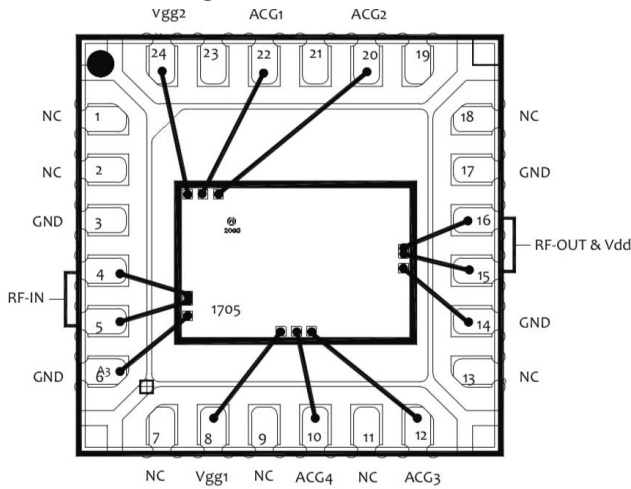
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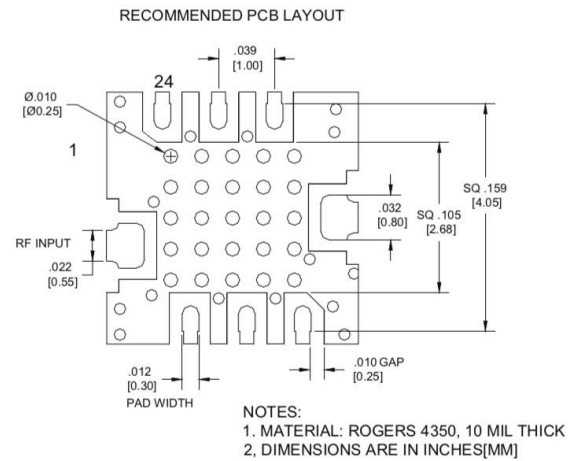
## Outline Drawing



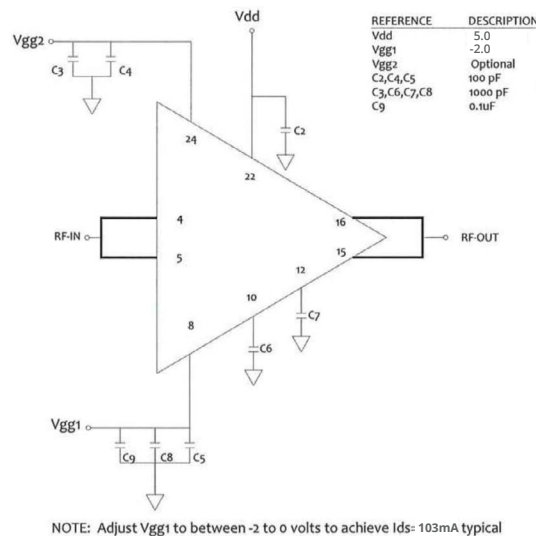
## Functional block diagram



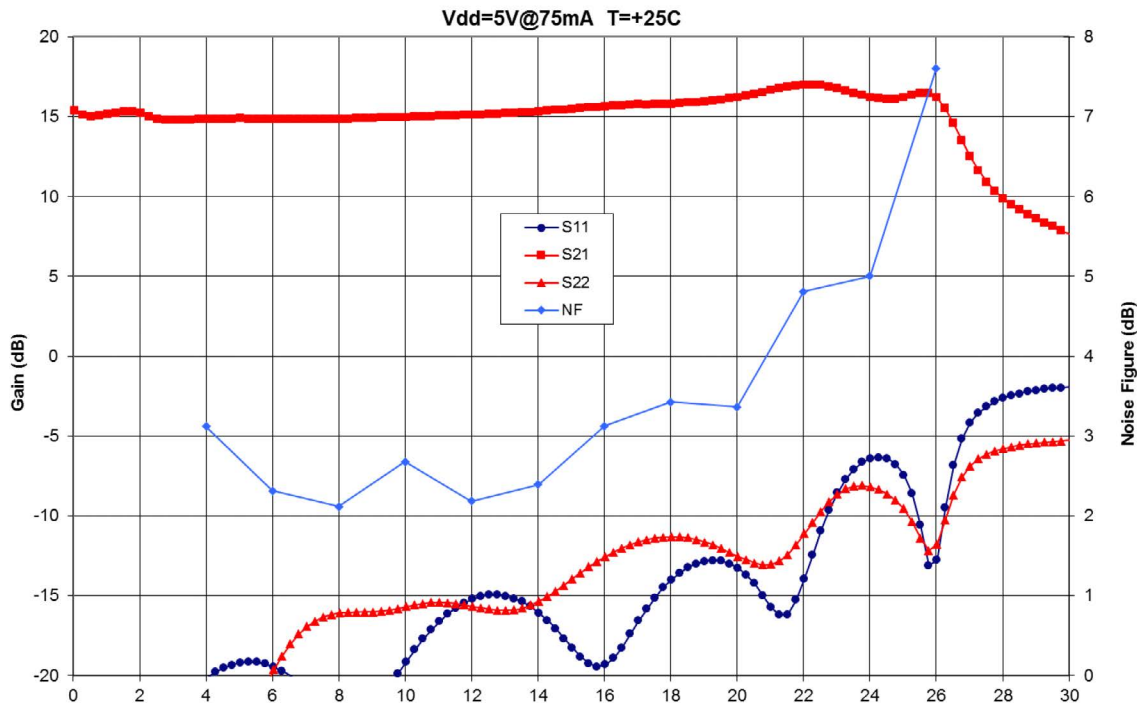
## Recommended PCB layout



## Application Circuit



## S-parameters/Noise Figure



## Power Out

