EMD1706QFN4 Driver Amplifier

DC-24 GHz GaAs PHEMT MMIC

Eclipse Microdevices EMD1706QFN4 is a GaAs MMIC PHEMT distributed general purpose driver amplifier. This MMIC is ideal for applications that requires a typical P1dB output power of +22 dBm up to 14 GHz, while requiring only 130mA from a + 8 Volt supply. Gain flatness of this device is less than 2.0 dB from DC to 20 GHz. The EMD1706QFN4 comes in a small RoHS compliant 4mm QFN leadless package and has excellent RF and thermal properties ideal, for commercial and industrial applications.

Technical Characteristics

Product Features
13.0 dB gain @ 10 GHz
+22.3 dBm P1dB output power @ 10 GHz
+8.0V @ 130 mA typical supply voltage
Low cost QFN 4mm leadless RoHS compliant/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_J 85° C:	+110°C
Storage Temperature:	-55 to +150°

Electrical Specifications @ +25°C, Vdd= 8.0, Ids= 130mA

Parameters	Freq. (GHz)	Min.	Typical	Max.	Units
Gain	2		14.8		dB
	8		13.5		dB
	14		14.4		dB
	20		15.8		dB
Gain Flatness	DC to 10.0 GHz		+/- 0.20	+/- 0.40	dB
	10.0 to 20 GHz		+/- 0.45	+/- 0.80	dB
Gain Variation Over Temperature				0.02	dB/°C
Noise Figure			4.5		dB
Input Return Loss	2		15.4		dB
	10		10.1		dB
	18		9.6		dB
Output Return Loss	2		10.2		dB
	8		7.4		dB
	18		6.9		dB
1dB Compression Point	2		23		dBm
	8		22.5		dBm
	14		22		dBm
	20		21		dBm
Saturated Output Power	2		23.4		dBm
	8		22.7		dBm
	14		22.5		dBm
	20		23		dBm

Product Export Classification
ECCN: EAR 99 (NLR)
HTS: 8542.33.0001

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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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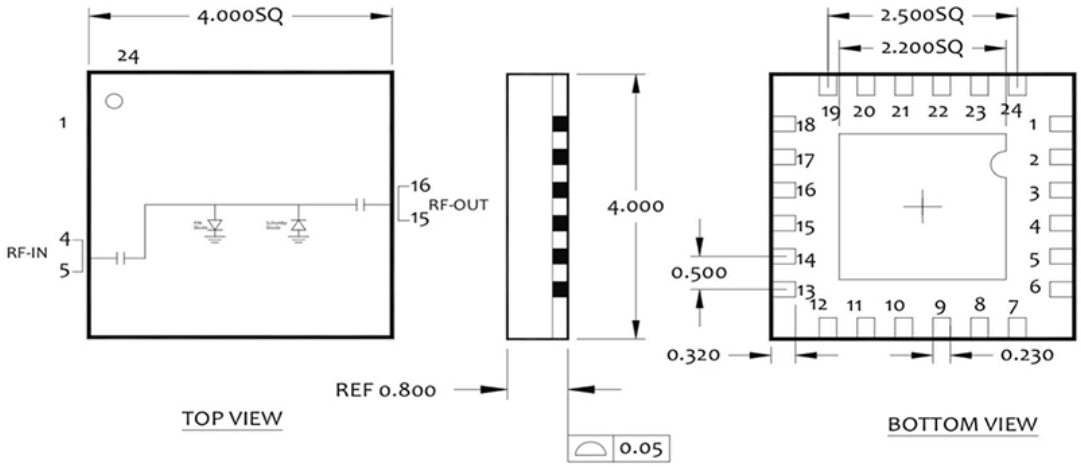
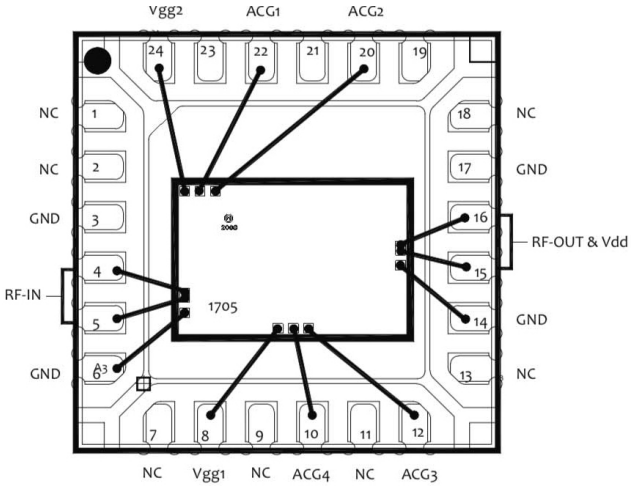
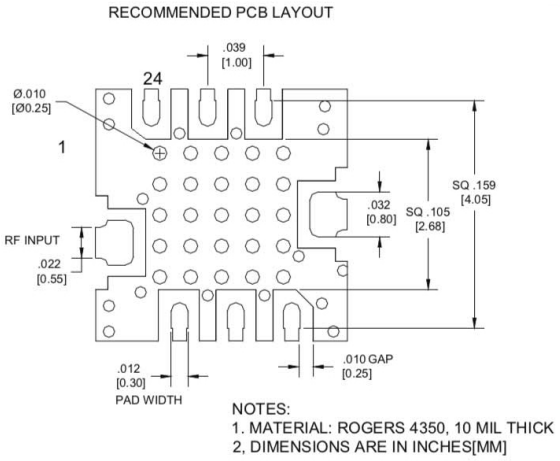
Outline Drawing



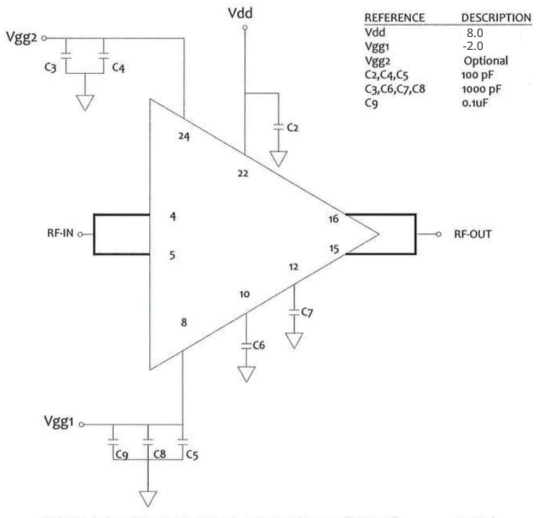
Functional block diagram



Recommended PCB layout



Application Circuit



NOTE: Adjust Vgg1 to between -2 to 0 volts to achieve Ids= 130mA typical

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