

EMD1706QFN4 Driver Amplifier Module

DC-24 GHz GaAs PHEMT MMIC Driver Amplifier



Technical Characteristics

Product Features

- 15.0 dB Gain @ 10 GHz
- +23.0 dBm P1dB Output Power @ 10 GHz
- +8V @ 130 mA typical supply voltage
- Hermetically Sealed
- Die available upon request



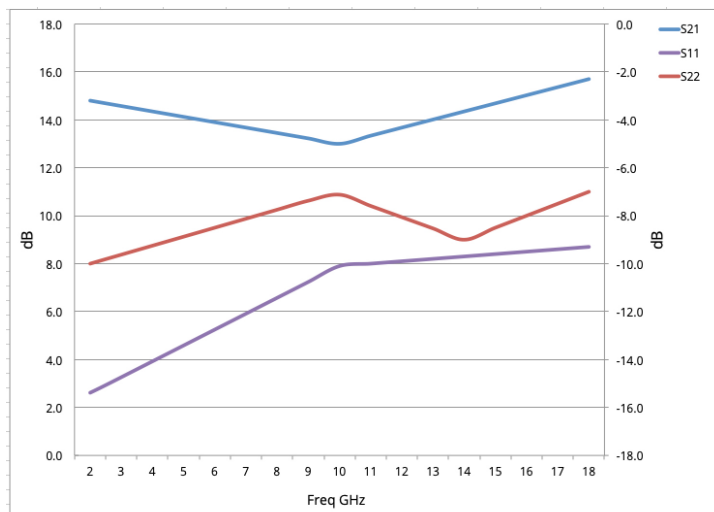
Eclipse Microdevices EMD1706 is a GaAs MMIC PHEMT Distributed general purpose driver amplifier. This MMIC is ideal for applications that requires a typical P1dB output power of +23 dBm up to 20 GHz, while requiring only 130mA from a + 8 Volt supply. Gain flatness of this device is less than 0.8 dB from DC to 22 GHz. The EMD1706 comes in a small RoHS compliant 4mm QFN leadless package and has excellent RF and thermal properties ideal for commercial and industrial applications.

Electrical Specifications @ +25°C, Vdd=8V, Ids=130mA

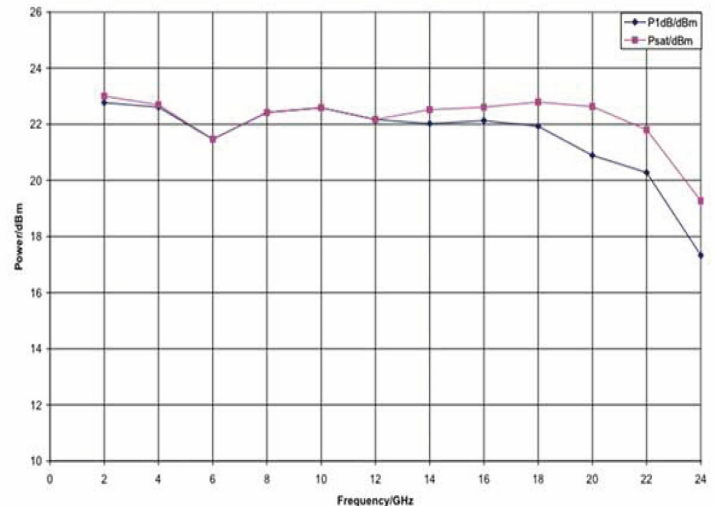
Parameters	Freq. (GHz)	Min.	Typical	Max.	Units
Gain	2.0		14.8		dB
	10.0		13.0		dB
	18.0		15.7		dB
Gain Flatness	DC to 10.0 GHz		±0.20	±0.40	dB
	10.0 to 20.0		±0.45	±0.80	dB
Gain Variation Over Temperature				0.02	dB/°C
Noise Figure			4.5		dB
Input Return Loss	2.0		-15.4		dB
	10.0		-10.1		dB
	18.0		-15.6		dB
Output Return Loss	2.0		-16.8		dB
	10.0		-9.3		dB
	18.0		-9.7		dB
1dB Compression Point	2.0		23.0		dBm
	8.0		22.5		dBm
	14.0		22.0		dBm
	20.0		21.0		dBm
Saturated Output Power	2.0		23.0		dBm
	8.0		23.5		dBm
	14.0		22.5		dBm
	20.0		23.0		dBm

Note: Data taken from testing 529 parts (175 from ea. lot).
 Conditions: Vdd = +8 VDC, Vgg adjusted to set Idd = 130mA
 S21 can be increased by 0.5dB at each frequency by setting Idd = 150mA

1706 in plastic - S-parameters



1706 in plastic - Power performance



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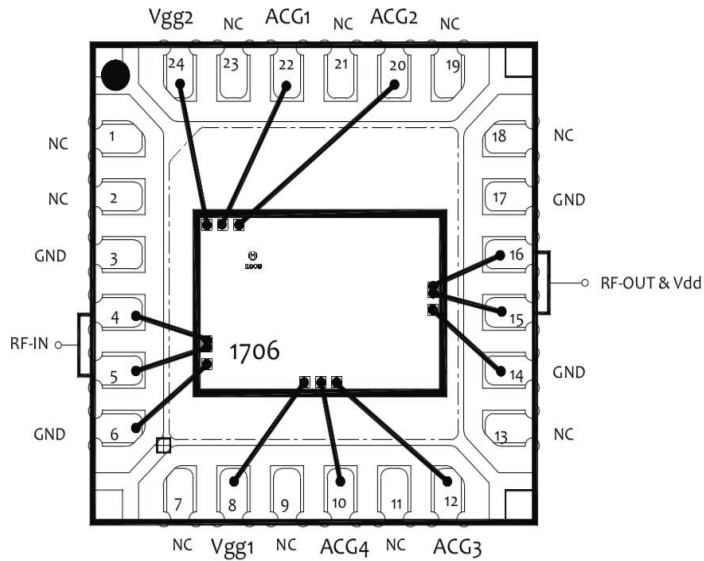
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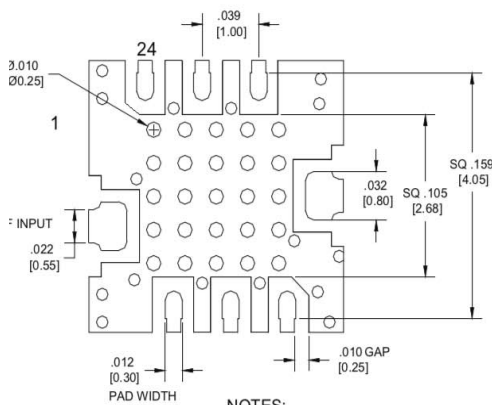
Absolute Maximum Rating

RF Input Power: +18 dBm
 Drain Voltage(Vdd): +8.0 VDC
 Gate Voltage(Vgg): -2 to 0 Volts
 Max Tj 85°C: +110°C
 Storage Temp: -55 to +150°C
 Operating Temp: -40 to +85°C

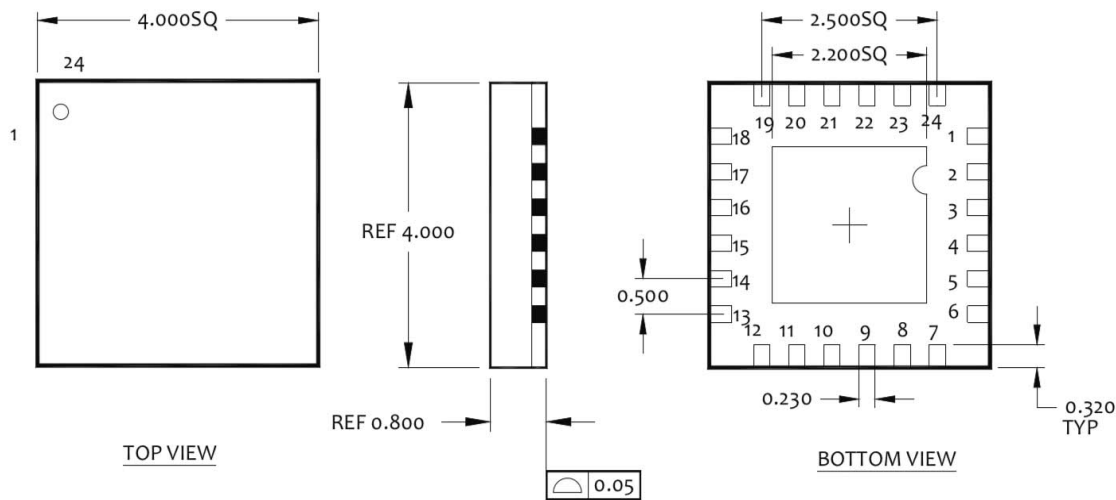
Functional Block Diagram



RECOMMENDED PCB LAYOUT



- NOTES:
 1. MATERIAL: ROGERS 4350, 10 MIL THICK
 2. DIMENSIONS ARE IN INCHES[MM]



About EclipseMDI

ECLIPSE Microdevices 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 features leading state-of-the-art process technologies and with manufacturing facilities for high-volume production of innovative RFIC's.

Quality products that serve the industry. Today and tomorrow.

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