APPLICATION	REVISIONS		
USED ON	DESCRIPTION	DATE	APPRVD
EMD1710	**ENGR CHANGE ORDER ECO# 2002**	9.28.16	

ORIGINAL

ORIGINAL COPY

ALL SHEETS ARE THE SAME REVISION UNLESS OTHERWISE SPECIFIED	ALL TEXT AND GRAPHICS COMPUTER GENERATED; DO NOT REVISE MANUALLY UNLESS OTHERWISE SPECIFIED	COMPANY PROCEDURE

- Interpret drawing per ASME Y14.100M-1998
- Dim & Tol IAW ASME Y14.5M-1994
- Dimensions are in inches or inches/metric
- Dimensional limits apply after processes
- Tolerances: Angles ±2°
  3 pl decimals ±.010
  2 pl decimals ± .020
- Drilled hole tolerances shall be IAW AND10387
- Remove all burrs & sharp edges .010 R max
- Surface finish, 63√
- Concentricity machined dia .002 FIM
- Machine tool mismatch: .003 max

SIGNATURES		DATE
DRW BY:	MW	9/29/16
MFR ENGR:		
ENGR: APPR:		9.28.16
QA APPR:	MW	9/29/16

PROCESS OWNER: SALES

ECLIPSEmdi

TITLE

SPECIFICATION

SIZE	CAGE CODE	DOCUMENT NO.	REV
A	1XDA1	730005	A

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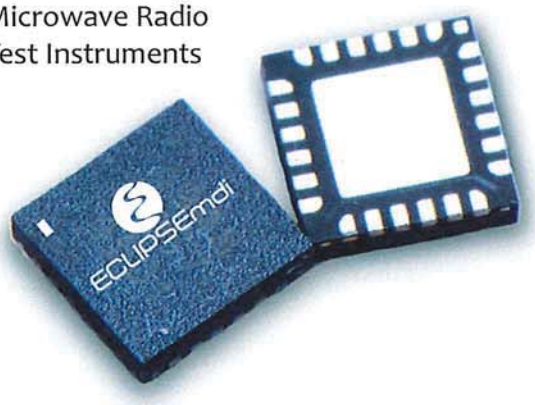
GaAs PHEMT MMIC
Low Noise Distributed Amplifier
QFN4mm
2 to 20 GHz

ECLIPSEmdi microdevices, inc

EMD1710

Typical Applications
- ††General Purpose Application
- ††Commercial and Industrial Application
- ††VSAT
- ††Microwave Radio
- ††Test Instruments



FEATURES
- ◊2.0 dB Noise Figure @ 10 GHz
- ◊12.5 dB Gain @ 10 GHz
- ◊+18.5 dBm P1dB Output Power @ 10 GHz
- ◊+5V @ 83 mA typical supply voltage
- ◊Low Cost QFN 4mm leadless RoHS Compliant package
- ◊ Hermetically Sealed
- ◊Die available upon request

Product Description

Eclipse Microdevices EMD1710 is a GaAs MMIC PHEMPT Distributed General Purpose Low Noise Amplifier. This LNA has a small signal gain of 12 dB with noise figure less than 2.0 dB at 10 GHz. This device is ideal for applications that requires a typical P1dB output power of +18 dBm up to 12 GHz, while requiring only 83mA from a + 5 Volt supply. The EMD1710 comes in a small RoHS compliant 4mm QFN leadless package and this package has excellent RF and thermal properties ideal for commercial and industrial applications.

Document No.: 730005_A

ELECTRICAL SPECIFICATION @ +25 °C, Vdd=5V,Ids=83mA

Parameters	SPECIFICATION				
	FREQ. (GHz)	MIN	TYPICAL	MAX	Units
Gain	2.0 8.0 14.0 20.0	12.5 11.5 11.5 12.8	13.1 12.1 12.6 13.2		dB dB dB dB
Gain Flatness	2.0 to 10.0 10.0 to 20.0		±0.20 ±0.25	±0.40 ±0.40	dB dB
Gain Variation Over Temperature				0.02	dB/°C
Noise Figure	2.0 8.0 14.0 20.0		4.4 2.5 2.4 3.4		dB dB dB dB
Input Return Loss(S11)			11		dB
Output Return Loss(S22)			10		dB
1 dB Compression Point(P1dB)	2.0 8.0 14.0 20.0		18.3 18.9 15.5 15.2		dBm dBm dBm dBm
Saturated Output Power(Psat)	2.0 8.0 14.0 20.0		20.5 20.5 19.5 19.0		dBm dBm dBm dBm
Third-Order Output Intercept Point			28		dBm

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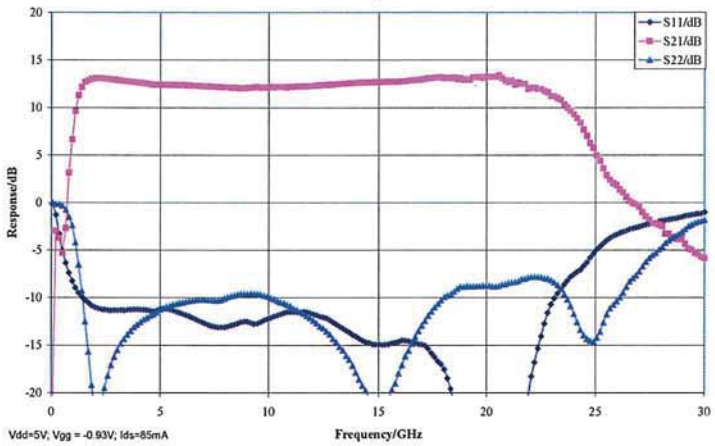
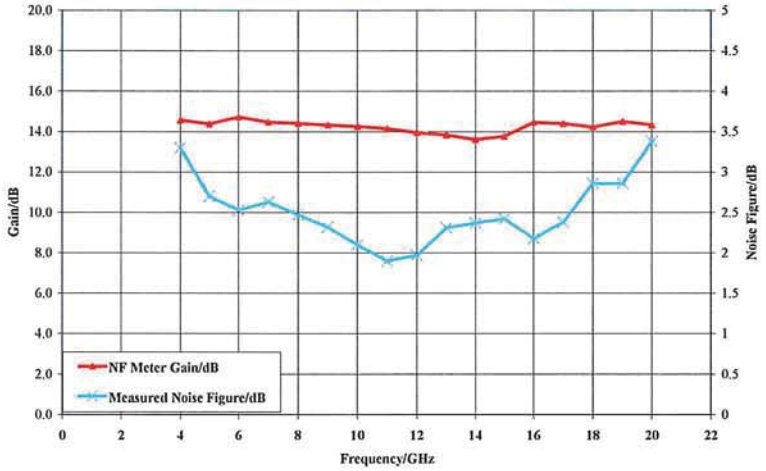
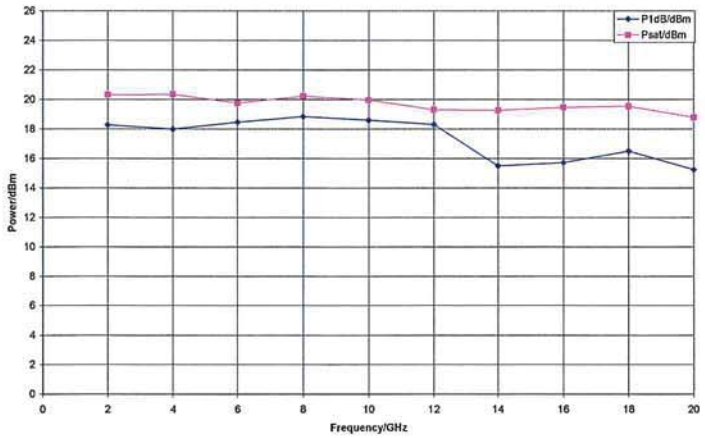
1710 - 2-20GHz Distributed Amplifier - Unit 1 - In Plastic



1710 - Noise Figure Data



1710 in Plastic - Power Performance



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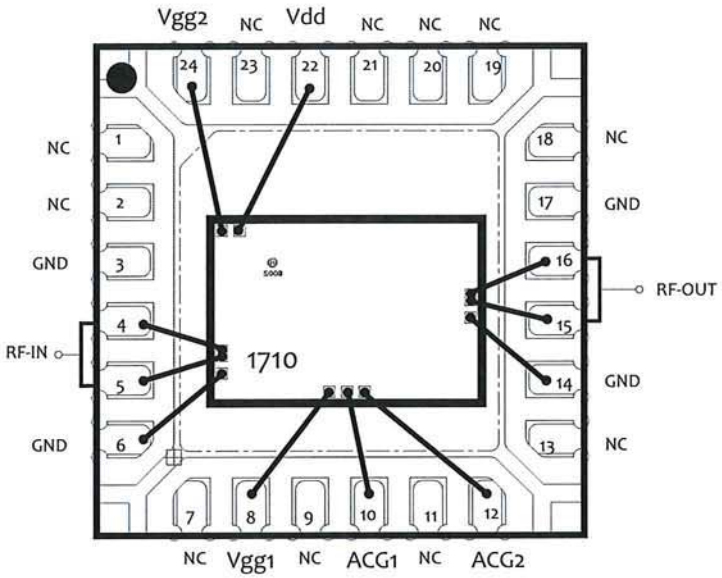
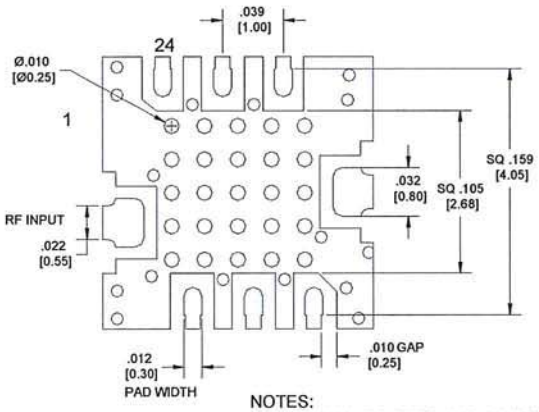
Absolute Maximum Rating

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

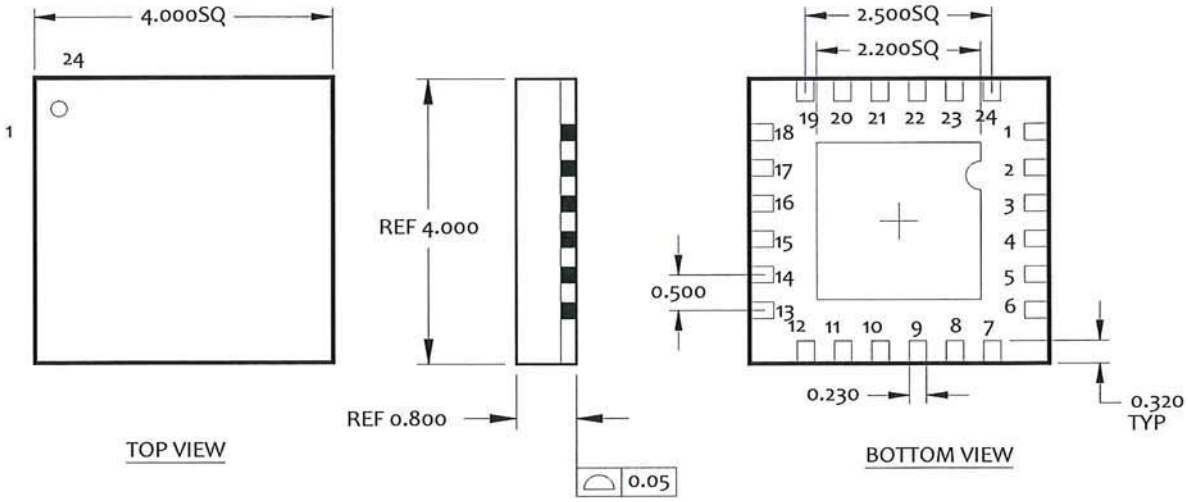
Functional Block Diagram



RECOMMENDED PCB LAYOUT



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



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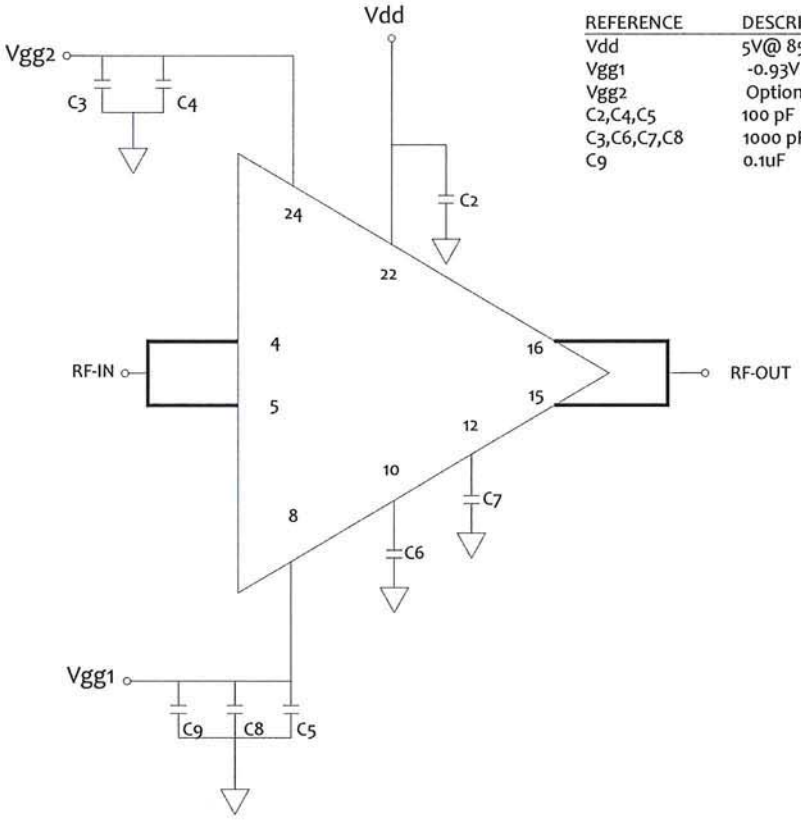
Application Circuit



REFERENCE	DESCRIPTION
Vdd	5V@ 85mA
Vgg1	-0.93V
Vgg2	Optional
C2,C4,C5	100 pF
C3,C6,C7,C8	1000 pF
C9	0.1uF

NOTE: Adjust Vgg1 to between -2 to 0 volts to achieve Ids=85 mA typical

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