XL1010-BD

Low Noise Amplifier 20.0-38.0 GHz

Rev. V1

Mimix Broadband

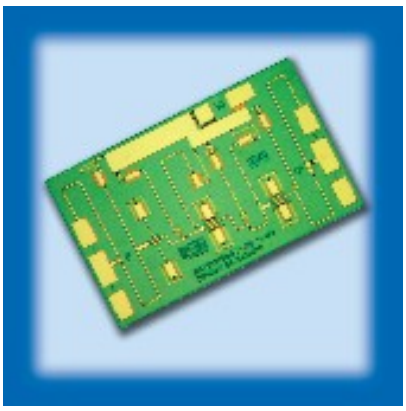
Features

- 17.0 dB Small Signal Gain
- 3.0 dB Noise Figure
- Single, Positive Bias Supply
- 100% On-Wafer RF Testing
- RoHS* Compliant and 260°C Reflow Compatible

Description

M/A-COM Tech's three stage 20.0-38.0 GHz GaAs MMIC low noise amplifier has a small signal gain of 17.0 dB with a noise figure of 3.0 dB. The device uses M/A-COM Tech's GaAs PHEMT device model technology, and is based upon electron beam lithography to ensure high repeatability and uniformity. The device is well suited to multiple receiver applications which require broadband performance with simple bias requirements.

Chip Device Layout



Ordering Information

Part Number	Package
XL1010-BD-000X	Where "X" is RoHS compliant die packed in "V" – vacuum released gel paks or "W" – waffle trays
XL1010-BD-EV1	evaluation module

Absolute Maximum Ratings

Parameter	Absolute Max.
Supply Voltage (Vd)	+7.0 VDC
Supply Current (Id1,2,3)	70 mA
Input Power (Pin)	+12.0 dBm
Storage Temperature (Tstg)	-65 to +165 ºC
Operating Temperature (Ta)	-55 to MTTF Graph[1]
Channel Temperature (Tch)	MTTF Graph[1]

(1) Channel temperature directly affects a device's MTTF. It is recommended to keep channel temperature as low as possible to maximize lifetime.

Electrical Specifications: 20-38 GHz (Ambient Temperature T = 25°C)

Parameter	Units	Min.	Typ.	Max.
Input Return Loss (S11)	dB	-	12.0	-
Output Return Loss (S22)	dB	-	15.0	-
Small Signal Gain (S21)	dB	-	17.0	-
Gain Flatness (ΔS21)	dB	-	+/-2.0	-
Reverse Isolation (S12)	dB	-	45.0	-
Noise Figure (NF)	dB	-	3.0	-
Output Power for 1dB Compression (P1dB)	dBm	-	TBD	-
Drain Bias Voltage (Vd)	VDC	3.0	4.0	5.0
Supply Current (Id)	mA	-	45	60

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

Gallium Arsenide Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these class 2 devices.