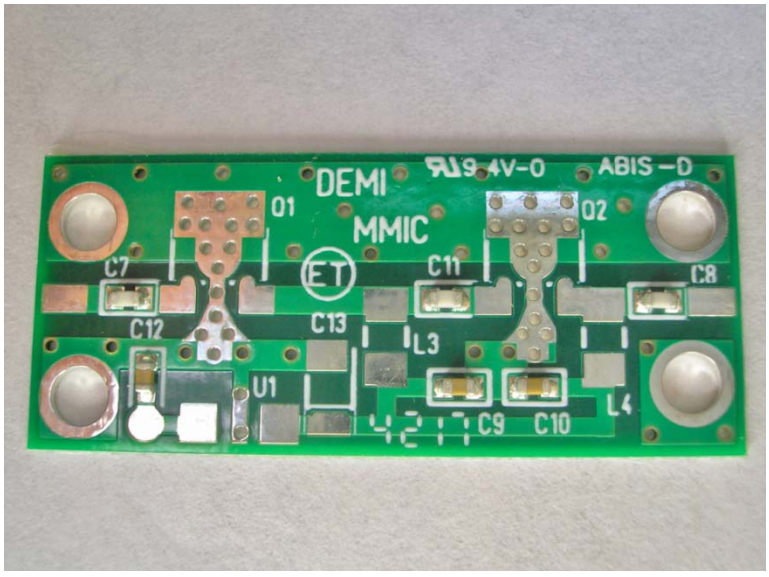
DEM MMIC AMP
Wide Band MMIC Amplifiers

Description:

We have produced a new MMIC circuit board that is designed to fit in our latest LNA amplifier machined enclosure. This circuit board has provisions for two MMIC RF stages and can produce various amplifiers such as Low Noise, basic Line Drivers, or low level TX amplifiers by utilizing any of the MMIC's that we now stock. We will list different MMIC line ups with specifications generic in nature and will provide them as assembled and tested amplifiers, complete kits with enclosures and connectors and PC Board only kits that will interest the VHF/UHF and Microwave enthusiasts of the hobby.



The circuit board is manufactured with an RF grade 0.031" thickness. 1 oz copper and is populated with standard DC blocking and bypassing required through 4 GHz of operation. The board is specifically designed with SOT89 packages in mind but other packages may be utilized. Standard MMIC designs will be utilized and depending on specifications, biasing will be determined with internal regulation or the application of a standard external voltage. Connector choice may be requested with the combination of BNC, SMA or Type "N" for any assembled unit or complete kit.

Pricing will vary depending on the MMIC utilized and if the amplifier is Single or Dual stage. Special RF connections may also vary pricing. It should be understood that these amplifiers are wide band in nature but serve a purpose as drivers in TX amplifiers, IF gain stages, and 2nd stage RX amplifiers. Filtering is suggested if utilizing a MMIC amplifier in a narrow band circuit.

DEM MMICAMP1 Low Noise Receive MMIC Amplifier

Single stage wide band low noise MMIC amplifier that operates between 30 MHz and 3.5 GHz. The active component is the QORVO TQP3M9008 MMIC amplifier. This amplifier is ideal for a 2nd stage low noise receiver amplifier.

Specifications below are all Nominal

IP3:	+36dBm output
Input VSWR:	>15dB 50 - 3500 MHz
Output VSWR:	>15dB 50 – 3500 MHz
Voltage:	+7 - +22 VDC
Current Drain	100 mA nominal

Frequency -MHz	Gain-dB	Noise Figure-dB
30	10.5	3.20
50	18.00	1.60
70	21.00	1.10
144	22.00	0.85
222	22.50	0.80
432	22.00	0.85
902	21.00	0.95
1296	19.50	1.10
2304	17.00	1.30
3456	15.50	1.80

DEM MMICAMP2 Low Level Driver MMIC Amplifier

Single stage wide band low level driver MMIC amplifier that operates between 30 MHz and 3.5 GHz. The active component is the QORVO RFGA2054 MMIC amplifier. This amplifier is ideal for a 1st stage driver amplifier in a Transmit chain.

Specifications below are all Nominal

Maximum Input Power	+15dBm output
Input VSWR:	>13dB 50 - 3500 MHz
Output VSWR:	>13dB 50 – 3500 MHz
Voltage:	+7 - +22 VDC
Current Drain	90 mA

Frequency -MHz	Gain-dB	P1dB
30	8.5	+13
50	15.00	+19
70	17.00	+20
144	19.00	+20
222	20.00	+20
432	20.00	+20
902	19.50	+20
1296	19.00	+20
2304	18.00	+19
3456	17.50	+18

DEM MMICAMP3 Wide Band MMIC Amplifier

Single stage wide band MMIC amplifier that is designed to operate between 1 GHz and 12 GHz. The active component is the RFMD NLB310 MMIC amplifier. This amplifier is ideal for adding output power to any low power wide bandwidth microwave transmitter.

Specifications below are all Nominal

Maximum Input Power	+10dBm
Input VSWR:	>13dB 100 - 12000 MHz
Output VSWR:	>13dB 100 – 12000 MHz
Voltage:	+7 - +22 VDC
Current Drain Max.	70 mA

Frequency -MHz	Gain-dB	P1dB
1000 - 3000	12.0	+13
3000 - 6000	11.0	+13
6000 - 12000	10.0	+12

DEM MMICAMP 4 Low Level Driver MMIC Amplifier

Single stage wide band low level driver MMIC amplifier that operates between 30 MHz and 3.5 GHz. The active component is the Mini Circuits PHA-1 MMIC amplifier. This amplifier is ideal for a 1st stage driver amplifier in a Transmit chain.

Specifications below are all Nominal

Maximum Input Power	+15dBm output
Input VSWR:	>13dB 50 - 3500 MHz
Output VSWR:	>13dB 50 – 3500 MHz
Voltage:	+7 - +22 VDC
Current Drain	150 mA

Frequency -MHz	Gain-dB	P1dB
30	17.8	+19
50	17.3	+20
70	16.7	+21
144	16.4	+22
222	16.0	+22
432	15.9	+21
902	15.0	+21
1296	13.8	+21
2304	13.5	+21
3456	10.00	+21

DEM MMICAMP5 Transverter IF Driver MMIC Amplifier

Single stage wide band MMIC amplifier designed to be utilized between a transceivers transverter port and the TXIF port of any transverter requiring up to 100mw of drive. The active component is the Mini Circuits MAV-11 MMIC and will operate between 10 and 1500 MHz.

Specifications below are all Nominal

Maximum Input Power	+10dBm output
Input VSWR:	>13dB 10 - 1500 MHz
Output VSWR:	>13dB 10 – 1500 MHz
Voltage:	+7 - +22 VDC
Maximum Current Drain:	60 mA

Frequency -MHz	Gain-dB	P1dB
28	13.0	+19
50	12.5	+19
70	12.5	+19
144	12.5	+19
222	12.0	+19
432	12.0	+19
902	11.0	+19
1296	10.0	+19
1500	9.0	+19

DEM MMICAMP6 Wide Band MMIC Amplifier

Dual stage wide band MMIC amplifier that is designed to operate between 1 GHz and 6 GHz. The active components are a RFMD NLB310 and a PHA-1 MMIC amplifier. This amplifier is ideal for adding output power to any low power wide bandwidth microwave transmitting system.

Specifications below are all Nominal

Maximum Input Power	+10dBm
Input VSWR:	>13dB 1000 - 6000 MHz
Output VSWR:	>13dB 1000 – 6000 MHz
Voltage:	+7 - +22 VDC
Current Drain Max.	180 mA +/-

Frequency -MHz	Gain-dB	P1dB
1000 - 2500	>20.0	+18
2500 - 5000	>19.0	+18
5000 - 6000	>18.0	+18

DEM MMICAMP7 Wide Band MMIC Amplifier

Dual stage wide band MMIC amplifier that is designed to operate between 28 and 500 MHz. The active components are aMAR-6 and a GALI-74 MMIC amplifier. This amplifier is ideal for low level transverter ports of ICOM transceivers or anywhere in your system that requires a high gain moderate output amplifier.

Specifications below are all Nominal

Maximum Input Power	-15dBm
Input VSWR:	>13dB 20 - 600 MHz
Output VSWR:	>13dB 20 – 600 MHz
Voltage:	+7 - +22 VDC
Current Drain Max.	+/- 120 mA

Frequency -MHz	Gain-dB	P1dB
20-600	>38.0	+19

DEM MMICAMP8 Wide Band Low Noise MMIC Amplifier

Single stage wide band Low Noise MMIC amplifier that is designed to operate between 30MHz and 1.5 GHz. The active component is a PGA-103 MMIC amplifier. This amplifier is ideal for a 2nd stage amplifier in a receive chain.

Specifications below are all Nominal

Maximum Input Power	+15dBm
Input VSWR:	>10dB 50 - 1500 MHz
Output VSWR:	>10dB 50 – 1500 MHz
Voltage:	+7 - +22 VDC
Max Current Drain Max.	120 mA
Maximum Noise Figure:	0.7 dB

Frequency -MHz	Gain-dB	P1dB
30	>22.0	+19
50	>22.0	+20
70	>22.0	+21
144	>22.0	+22
222	>22.0	+22
432	>22.0	+21
902	>17.0	+21
1296	>13.0	+21