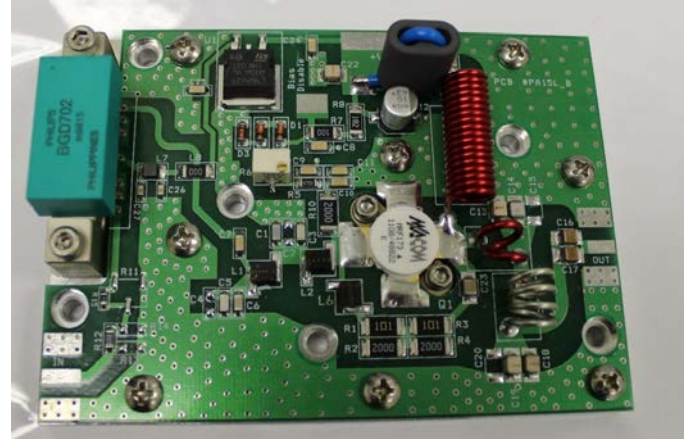


Model P50FM42 FM Pallet Amplifier Module

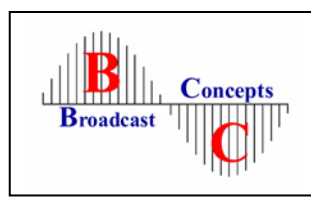
This amplifier module is ideal for driver stages in FM Broadcast transmitters.

- **86– 110MHz**
- **28Volts**
- **Pout: 50W CW minimum**
- **40dB Gain Class AB**
- **MACOM MRF173 Mosfet**
- **Made in the USA**
- **PA can be driven to full power with most network analyzers, signal generators and low power VCO's.**

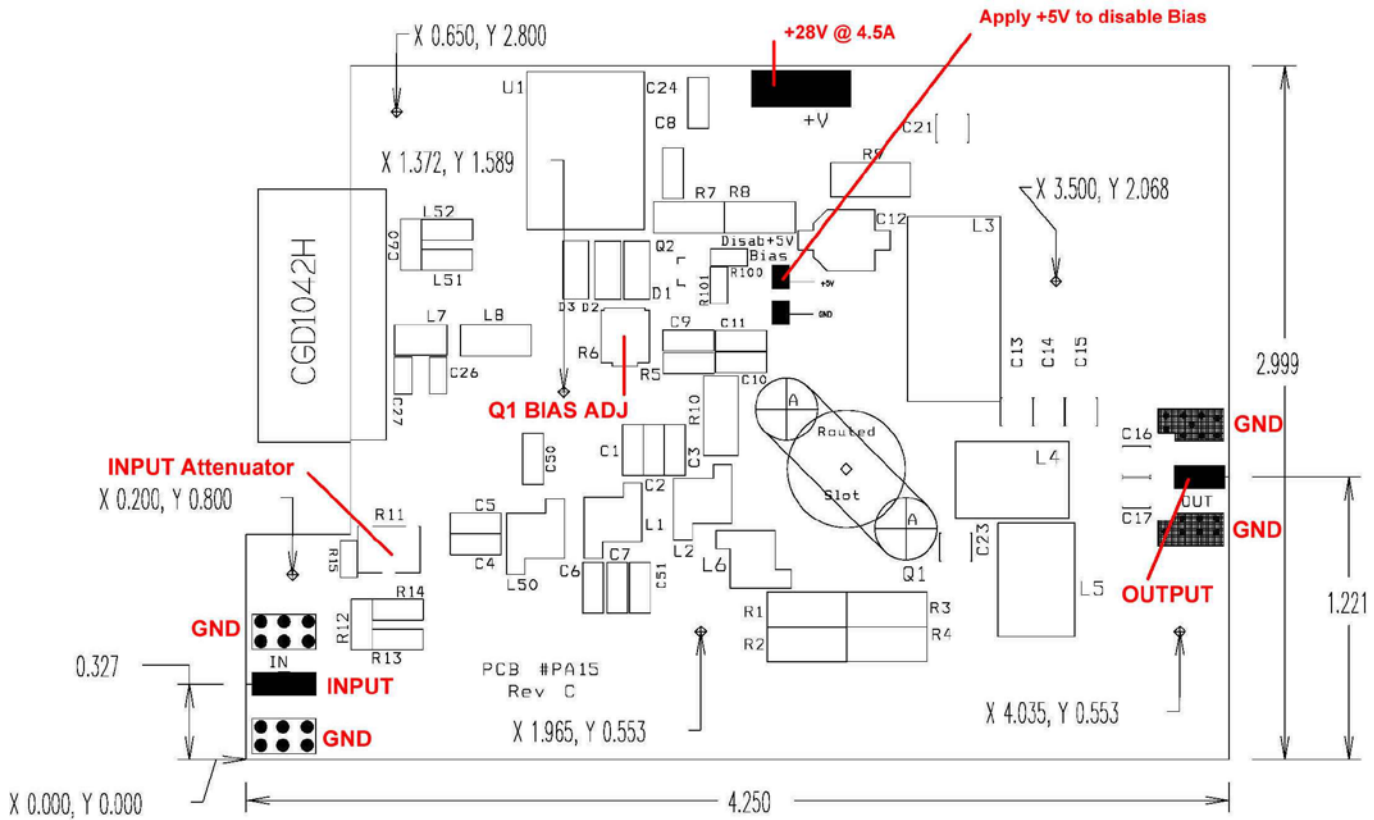


Dimension (L x W x H inch) [4.25" x 3.0" x 0.75"]

Electrical Specifications: 28VDC 25C				
Characteristics	min	typ	max	unit
Operating Frequency range	86		110	MHz
Power Input		10	13	dBm
Input return loss	-12	-15		dB
Power Gain	40	42	44	dB
Collector Efficiency @ 50W CW	40	50		%
Supply Voltage	24	28	30	V dc
Insertion Phase variation (unit to unit)		+/-5.0		degrees
Power gain (unit to unit)		+/-0.5		dB
F2 Second Harmonic		-40dB		dB
F3 Third Harmonic		-50dB		dB
Bias Current: Factory set to 1.0A	0.9	1.0	1.1	A dc
Bias Disable voltage	2.8	3.5	5	VDC
Frequency Response S21 p-p		+/- 1		dB
Current Requirements for 50W CW	4.0	4.5	5.0	ADC
Output Power	50	55	60	WATTS
VSWR Withstanding @ 50W CW	-	-	3:1	VSWR



Amplifier Drawing: Figure 1



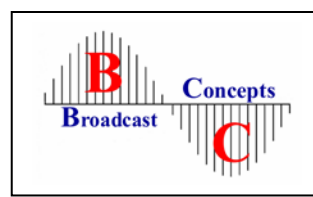
Download a DXF drawing: <http://broadcastconcepts.com/80watt/fmdriver/P50FM42A.DXF>

Heatsink Mounting/Hardware

Tips for Mechanical Mounting:

- 1 All mounting holes designated in (X, Y) format are 0.156 inch thru and they are designed for a #6 Screws or metric equivalent. Stainless Steel mounting hardware is recommended, grade 18-8 or better. A lock washer of same material should also be used.
- 2 Ensure mounting surface is flat to better than 0.0025"
- 3 Use a thin layer of thermal compound on the backside of the PA - no more than 0.001" - 0.002" thickness!
- 4 Torque all screws to 10-12 in-lbs

Warning: Failure to use a proper heat sink will reduce product service life and may cause the transistors to burn out. This type of failure is not covered by warranty. This product can be ordered with a custom heat sink. Please contact factory for more information.



Bias Settings:

The factory bias settings are 500mA @ 28V for Q1. The NXP CATV class A driver stage and its associated voltage regulator consume 0.5A. This results in a total current draw of 1.0 Amps at 28 volts when no RF drive is present. Do not attempt to adjust the bias on Q1.

Electrical notes:

The bias disable function operates when +5V (TTL HIGH) is applied to the bias disable pad shown in Q1. Generally more than +3V is enough to disable the bias. This function only disables the bias on the MRF173 only. The CGD1042H input stage is always active.

The Input Attenuator R11 is not normally populated as this option is not frequently used. If you need this function we can install it at no cost at time of purchase. (The installation procedure involves removing R1 and soldering the trimmer into place)

If coax cables are used to make RF connections please note that it is not necessary to pick up ground on both sides of the center conductor trace. Two ground pads at the input and output are provided to make installation easier. Do not twist braids of coaxial cables. Direct solder shield/braid to ground pad and center conductor to center traces.

Ground “-“ contact should be made to the heat sink that the pallet is mounted on. Install ground wire as close to the pallet as possible. If chassis ground is good then connect “-“ directly to the chassis. It is not necessary to connect ground return directly to the pallet.

Make the +28V connection using #16 AWG wire.

RF overdrive and high VSWR may damage the pallet. Care must be taken to avoid these conditions. Our 1 year limited warranty covers failures from defects in workmanship only.