



# PP54-88-400

## 54-88 MHz – 400W

### Solid State Broadband

### High Power Pallet Amplifier

The PP54-88-400 is a 400W pallet amplifier for the 54-88 MHz band. Superior performance is provided offering high gain, efficiency and power in a small pallet footprint using Gold LD MOS transistors available on the market today. Matched for 50 ohms input and output, the PP54-88-400 provides 19 dB typical gain with NTSC Full-Field Red Power output in excess of 400 Watts at 32 VDC.



### Specifications

(Vsupply=+28V Vdc, Idq=1.6A, Freq=54-88MHz)  
 Performance data is listed for +28Vdc. Operation at +32Vdc allows 400 watts broadband .

Parameter	Min.	Typ	Max.	Unit
Frequency	54		88	MHz
Pout P1dB	350	400		Watts
Gain	18	19		dB
Gain Variation		± 1.0		dB
Power In		5	6.3	Watts
Drain Current (@ 250W Avg)		20		Amps
Efficiency (@ 250W Avg)	25	44		%
Input VSWR		1.2:1	1.5:1	
2 <sup>nd</sup> Harmonic		-30		dBc
3 <sup>rd</sup> Harmonic		-12		dBc
Baseplate Operating Temp.	0		+65	°C
Size	6.5 'x4"x1.5"			

### Features

- 400 Watts Pk-Synk @32V
- 18 dB Gain min.
- No circuit tuning or RF assembly
- Amplifier disable input
- Combined Aural/Video Operation at full rated power

### Maximum Ratings

Parameter	Value
Input Voltage	+32 VDC
Bias Current	3.0 Amp
Drain Current	24.0 Amp
Load Mismatch All Phase Angles	5:1 (3 seconds max, drain current limited to 24A)
Baseplate Temp	+65°C
Storage Temp	-40° - +105°C

PMT RF Products • 3107 N. Deer Run Road, Suite 20, Carson City, Nevada 89701 USA.

Tel: +1.775.883.1122 e-mail: [sales@pmtrf.com](mailto:sales@pmtrf.com) web: <http://www.pmtrf.com>

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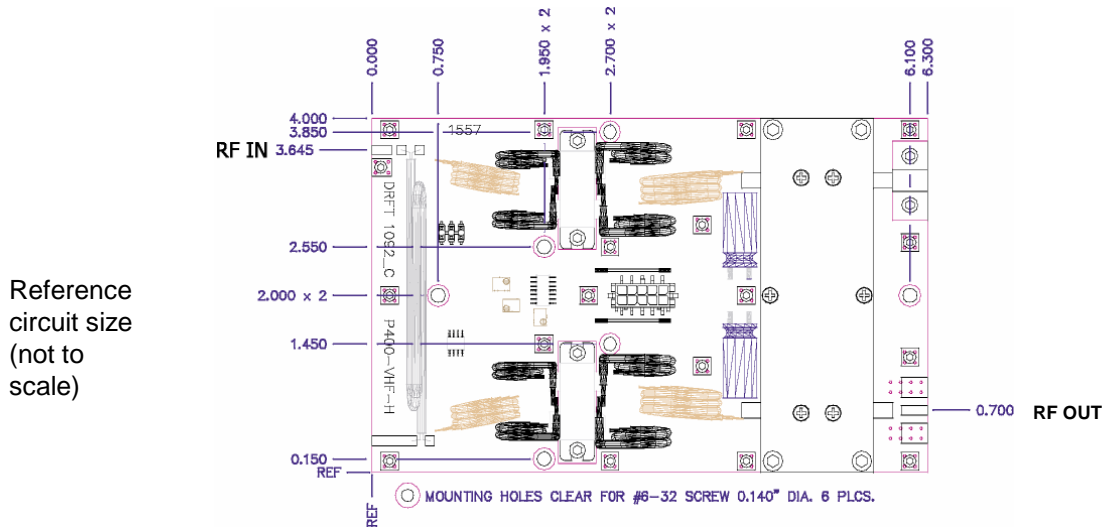


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#### Reference Circuit



#### Tips for Mechanical Mounting:

- 1 All holes are clear for #6 Screw. 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 0.003" / "
- 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

#### Considerations for Mechanical Mounting:

Considerations for proper thermal design include

Total power dissipated = Total DC Power Consumed x (1-Efficiency)

Ambient Airflow

Thermal Resistance of Heat Sink

For this PA, typical DC efficiency is 40%. At 400W Pk power output, 200W Average, +32.0V DC operation, 544 total watts are consumed, which leaves 344W dissipated power. If we assume an input air temperature of +25°C, and a maximum desired baseplate temperature of 55°C, this leaves a temperature differential between baseplate and ambient air of 30°C. The desired thermal resistance for heatsink mounting surface to air is therefore 30°C/344W = 0.09°C/W. Since the baseplate is aluminum, it is important to find a heat sink that is sized at the same outline as the PA which can give this thermal resistance. For example, a 230mm x 127mm heat sink with serrated fins, 70mm in length, (40 fins across 127mm dimension) with an air velocity of 4 m / s achieves this value.

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Revision History:	1/1/07	Data Sheet
Previous Versions:	-	
Page	Subjects (major changes since last revision)	
Rev. 2	Product Name Change	3/9/09

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If there is any information within this document that you feel is wrong, unclear or Missing, please give us your feedback as it will help us to continuously improve The quality of this document. Please send your suggestions (including a reference To this document) to:  
[Bob.Todd@PMTRF.com](mailto:Bob.Todd@PMTRF.com)  
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