FM1K-108

PRELIMINARY

1000 W - FM Amplifier

Designed for FM radio transposers and transmitters, this amplifier incorporates microstrip technology and LDMOS device to enhance ruggedness and reliability.

- **87.5 ÷ 108 MHz**
- **48 Volts**
- **Input/Output 50 Ω**
- **P_{out} : 1000 W min**
- **I quiescent 200mA**
- **Gain : 22 dB typ**
- **High linearity. Digital operation ready**
- **Devices: last LDMOS generation**
- **Single End Configuration**
- **Over drive self protected**
- **Output High Mismatch self protected**

Dimension (L x W x H): 250 x 180 x 53 mm [9.842" x 7.080" x 2.086"]

This picture is a mere example, it does not bind the provided product

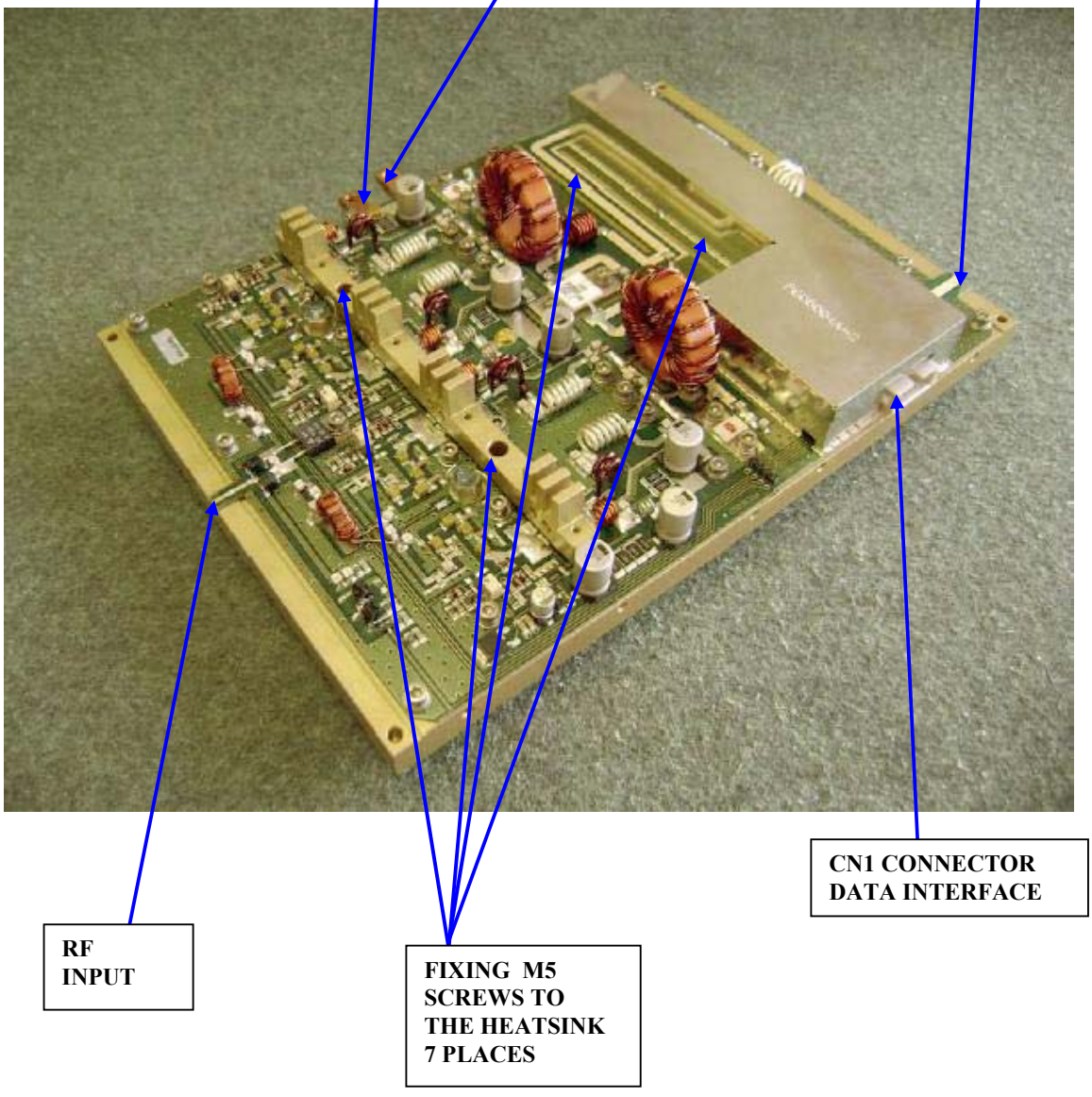
ABSOLUTE MAXIMUM RATINGS (Base Plate T = 65 °C)

Symbol	Parameter	Value	Unit
V_S	**Drain Voltage Supply**	55	**V dc**
I_S	**Supply Current**	40	**A dc**
VSWR	**Load Mismatch** (all phase angles, Tc=40°C, Id=10A)	3:1	
Tstg	**Storage Temperature Range**	-30 + 100	**°C**
Tc	**Operating Temperature**	-10 +50	**°C**

ELECTRICAL SPECIFICATIONS (Base Plate T. = 45 °C, 50Ω loaded, Vd = 48 V)

ELECTRICAL CHARACTERISTICS				
Characteristics	**Min**	**Typ.**	**Max**	**Unit**
Operating Frequency Range	87.5		108	MHz
Fundamental Output Power	1000			W
Power Input		5	8	W
Power Gain (1000W output)	20.5	22		dB
I Drain		30	36	A
Collector Efficiency (Load 50Ω)	69	74		%
Input VSWR		1.3:1	1.7:1	
Insertion Phase Variation (Unit to Unit)		±10		Degrees
Power Gain Variation (Unit to Unit)		±1		dB
F2 Second Harmonic	-35	-40		dB
F3 Third Harmonic		-40		dB

Conctat Res-Ingenium, +39 0763 316333 Fax +39 0763316002- or visit www.res-ingenium.com for a complete listing.


PS BAR (+48V)
GND BAR
RF OUTPUT
RF INPUT
FIXING M5 SCREWS TO THE HEATSINK 7 PLACES
CN1 CONNECTOR DATA INTERFACE

PIN FUNCTION TABLE

CN1	Function	Note / Parameters
Pin 1	Ground	
Pin 2	Ground	
Pin 3	Ground	
Pin 4	Ground	
Pin 5	Maximum Reflected Power	Factory setting = 100W. / 5V = Alarm; 0V = OK
Pin 6	Input Level	
Pin 7	Output Power	DC directly related to the O/P with+/- 5% Accuracy
Pin 8	Reflected Power	DC directly related to the R/P with+/- 5% Accuracy
Pin 9	Maximum Output Power	Factory setting = 1100W. / 5V = Alarm; 0V = OK
Pin 10	Heatsink temp	DC directly related to temp. with+/- 5% Accuracy
Pin 11	RF Enable	At +5V the O/P is reduced by 10dB
Pin 12	Maximum Heatsink temperature	Factory setting +65C. / 5V = Alarm; 0V = OK
Pin 13	PA working properly:	5V = OK; 0V = Alarm
Pin 14	Overdrive	Factory setting 8W P/Input. / 5V = Alarm; 0V = OK

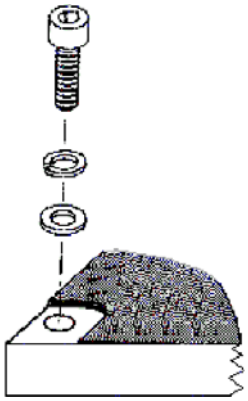
PHYSICAL LAYOUT AND HEATSINK MOUNTING/HARDWARE

1.HEATSINK TOOLING
-Planarity: typical value 0.8µ
-Roughness: better than 0.03 mm

2.THERMAL COMPOUND
-Paste with silicones
-Thickness: optimum between 0.06 mm and 0.15 mm, on the whole back surface of the amplifier.

3.SCREWS
-M3 and M5 x 30 hexagon socket head cap screws.
-The recommended Torque is 0.9 N-m for M3 or 4-40 type screws and 1.3 N/m for M5 x 30.
- The screw tightening must be done at ambient temperature.

4.TIGHTENING ORDER
-See next figure:



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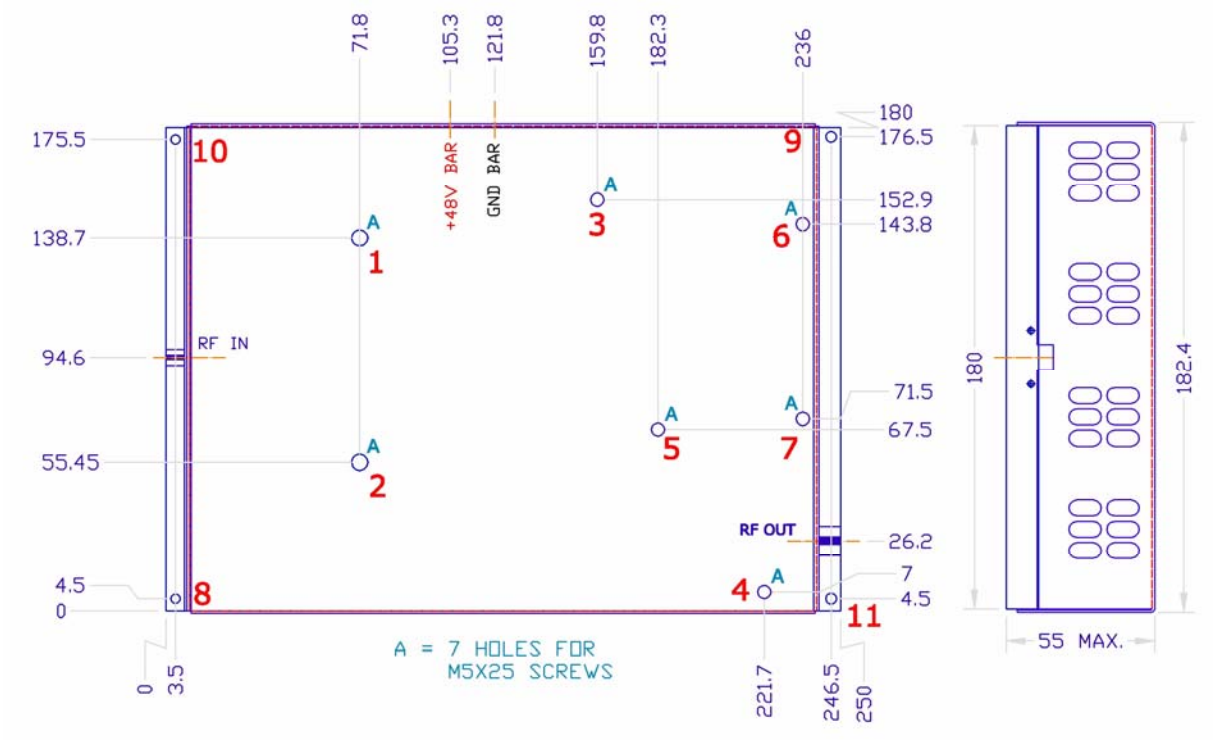

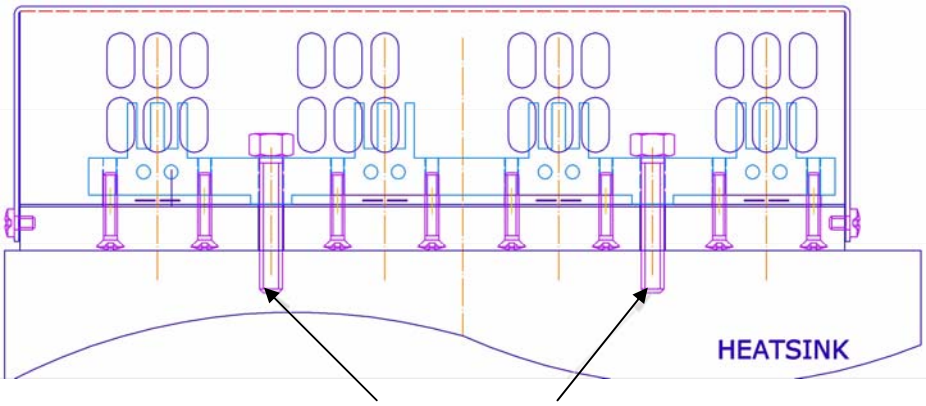

M5 X 25 SCREWS (7 PLACES)

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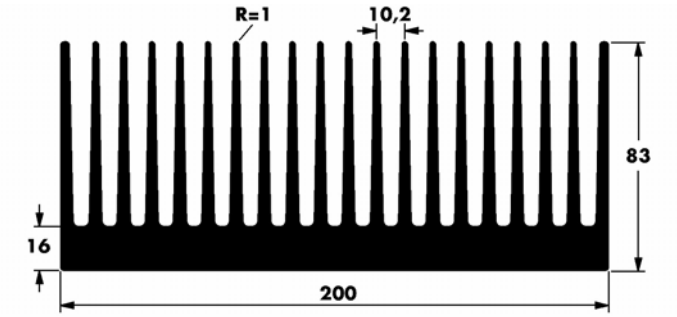

SUGGESTED HEATSINK:

Model: PADA 8320 or equivalent
Dimensions: 200x250x83 [mm] (7.9x9.9x3.3inch)
20 fins, step 10.2mm
Air Flow: 180 m^3/h

Res-Ingenium
Via dei Vasari, 17
Zona Industriale Fontanelle di Bardano
05018 Orvieto (TR)
Italy
Telephone: +39 0736 316333
Fax: +39 0763 316002
Internet: res-ingenium.com
E-Mail: map@res-ingenium.com

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