

300 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} : 300 W min
- $I_{quiescent}$ 50mA
- Gain : 23 dB typ
- Class B
- Devices: MRF6V2300NBR1 or equivalent
- Configuration Single End
- Connectorized version available on request



Dimension (L x W x H): 101 x 45 x 38mm [4" x 1.8" x 1.5"]

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

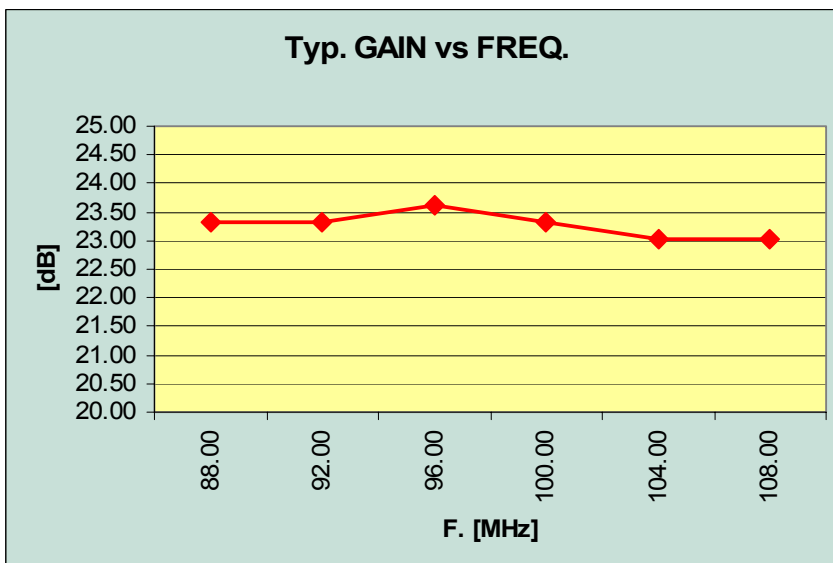
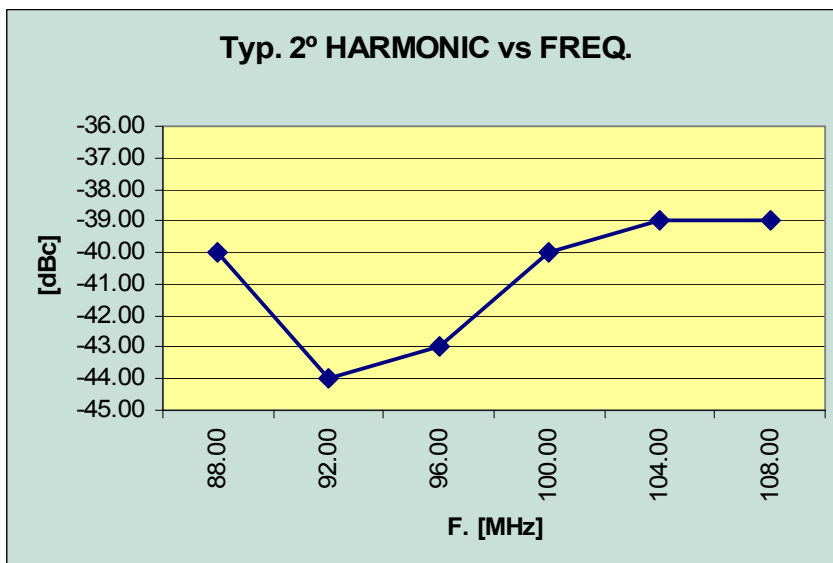
ABSOLUTE MAXIMUM RATINGS (Device Flange T = 70 °C)

Symbol	Parameter	Value	Unit
V_S	Drain Voltage Supply	50	V dc
I_S	Supply Current	12	A dc
VSWR	Load Mismatch (all phase angles, $T_c=40^\circ\text{C}$, $I_d=10\text{A}$)	3:1	
T_{stg}	Storage Temperature Range	-30 + 100	$^\circ\text{C}$
T_c	Operating Temperature	-10 +60	$^\circ\text{C}$

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

ELECTRICAL CHARACTERISTICS				
Characteristics	Min	Typ.	Max	Unit
Operating Frequency Range	87.5		108	MHz
Fundamental Output Power	300			W
Power Input		1.4	2.5	W
Power Gain (300W output)	21.5	23		dB
I Drain		8.2	9	A
Collector Efficiency (Load 50 Ω)	70	78		%
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

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PHYSICAL LAYOUT AND HEATSINK MOUNTING/HARDWARE

1. HEATSINK TOOLING

- Planarity: typical value 0.8μ
- Roughness: better than 0.03 mm

2. THERMAL COMPOUND

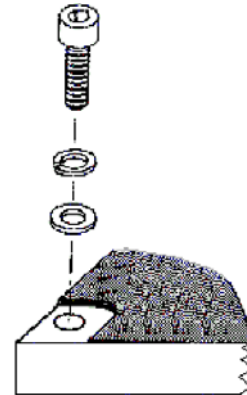
- Paste with silicones
- Thickness: optimum between 0.06 mm and 0.15 mm, on the whole back surface of the amplifier.

3. SCREWS

- M3 hexagon socket head cap screws or equivalent.
- The recommended Torque is 0.6 N-m for M3 or 4-40 type screws as indicated on Freescale Semiconductor Application Note AN3263 Rev. 0.
- The screw tightening must be done at ambient temperature.

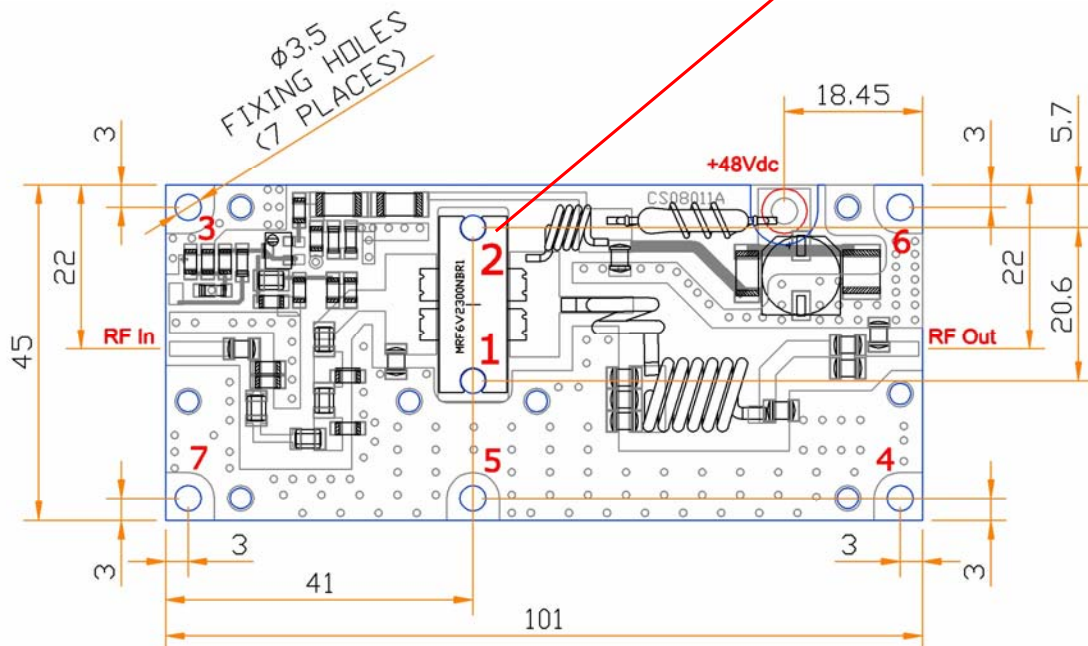
4. TIGHTENING ORDER

- See next figure:



WARNING: when mounting this mechanical component, please add thermal compound between its bottom part and the device surface, as described in point 2 of this paragraph.

NOTE: ensure a minimum air flow on the components surface of the pallet.



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