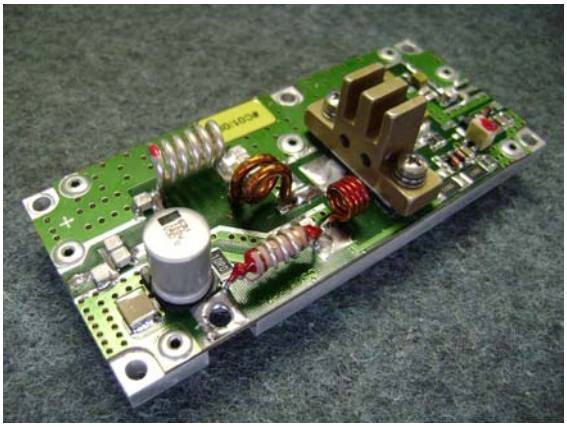
FM310-108

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

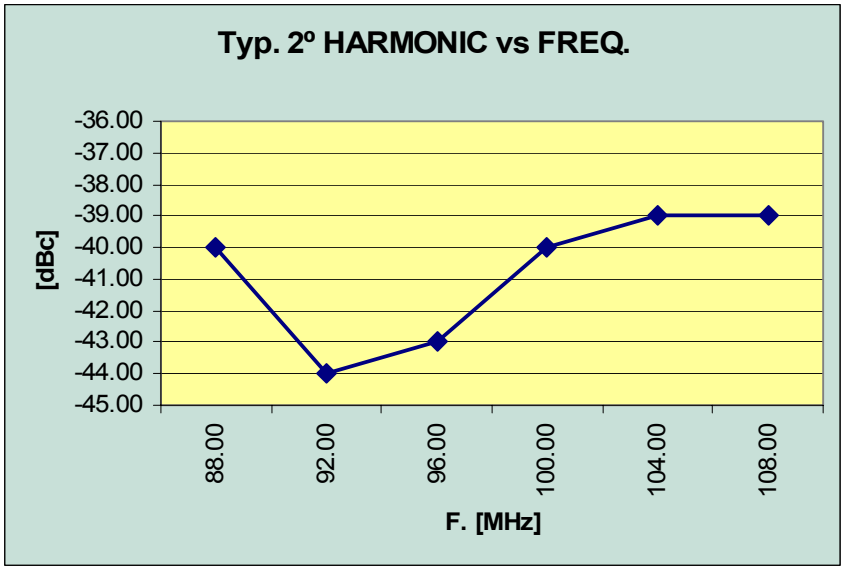
ABSOLUTE MAXIMUM RATINGS (Device Flange T = 70 °C)

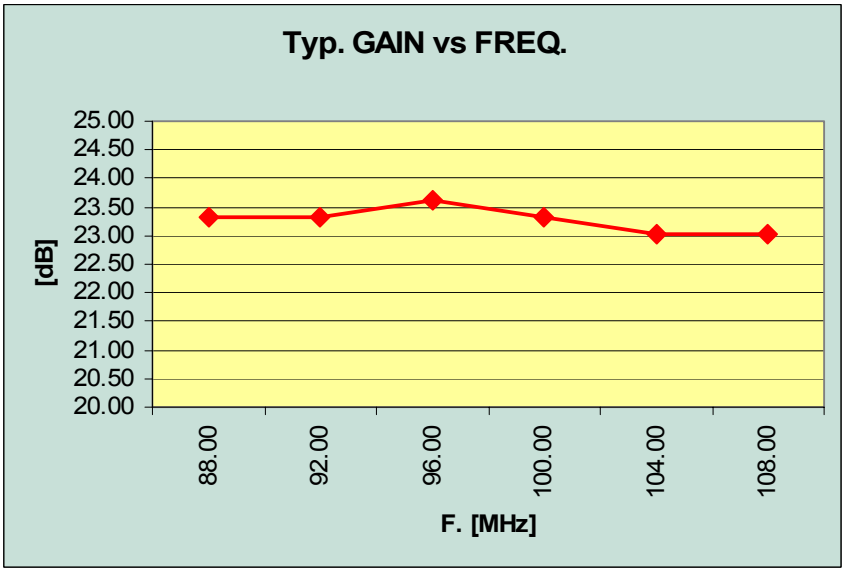
Symbol	Parameter	Value	Unit
V_S	**Drain Voltage Supply**	50	**V dc**
I_S	**Supply Current**	12	**A dc**
VSWR	**Load Mismatch** (all phase angles, Tc=40°C, Id=10A)	3:1	
Tstg	**Storage Temperature Range**	-30 + 100	**°C**
Tc	**Operating Temperature**	-10 +60	**°C**

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

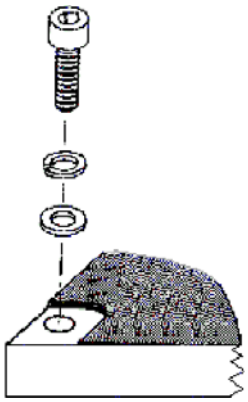
ELECTRICAL CHARACTERISTICS				
Characteristics	**Min**	**Typ.**	**Max**	**Unit**
Operating Frequency Range	87.5		108	MHz
Fundamental Output Power	300			W
Power Input		1.4	2.5	W
Power Gain (300W output)	21.5	23		dB
I Drain		8.2	9	A
Collector Efficiency (Load 50Ω)	70	78		%
Input VSWR		1.3:1	1.7:1	
Insertion 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

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


Typ. 2º HARMONIC vs FREQ.
-36.00
-37.00
-38.00
-39.00
-40.00
-41.00
-42.00
-43.00
-44.00
-45.00
[dBc]
88.00
92.00
96.00
100.00
104.00
108.00
F. [MHz]


Typ. GAIN vs FREQ.
25.00
24.50
24.00
23.50
23.00
22.50
22.00
21.50
21.00
20.50
20.00
[dB]
88.00
92.00
96.00
100.00
104.00
108.00
F. [MHz]

PHYSICAL LAYOUT AND HEATSINK MOUNTING/HARDWARE



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

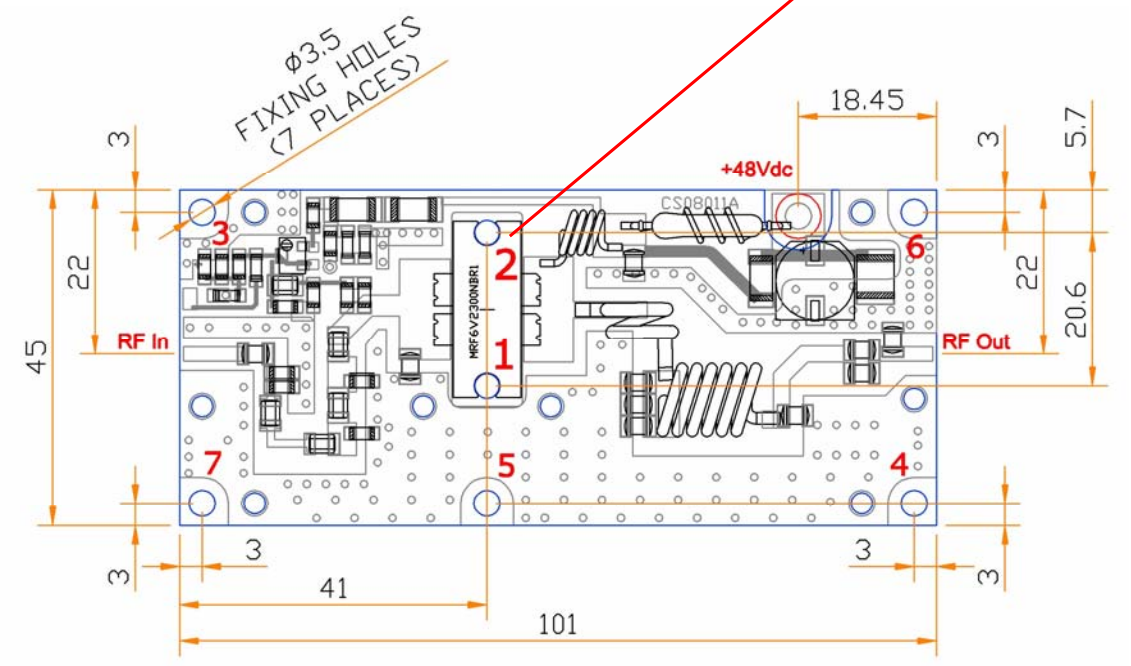
2.THERMAL COMPOUND
-Paste with silicones
-Thickness: optimum between 0.06 mm and 0.15 mm, on the whole back surface of the amplifier.

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.



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