

TDE300FM

Power Amplifier Section 250W FM

Charateristics

- 80 – 120 MHz
- Pout nom: 250W
- Pout max: 250W
- Gain: 40 dB
- Classe B
- Device: LDMOS MRF6V2010
FREESCALE + LDMOS
MRF6V2300 FREESCALE
- Dimension: (LxWxH)
100x250x40mm
3.94"x9.84"x1.57"
- Weight: 2,5 Kg / 5.51lb

RoHS
Compliant



Applications

- FM application
- CW application
- PULSED application

Using new RF power transistor based on 6th generation LDMOS technology, this amplifier module combines excellent ruggedness with a high power gain, high RF power and maximum efficiency. Directed to maximum energy saving, it is a compact product with a very high output power. Very high efficiency of the module permits to create very compact and lighter higher power amplifiers.

Absolute Maximum Ratings

| Parameter | Min. | Typ. | Max. | Units. | Note |
|------------------------------------|------|------|------|--------|------|
| Voltage Supply | | | 53 | V DC | |
| Supply Current | | | 15 | A DC | |
| Flange Operating temperature range | | | +120 | °C | |
| Storage temperature range | -20 | | +150 | °C | |

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Electrical Specification

| Parameter | Min. | Typ. | Max. | Units. | Note |
|-------------------|------|--------|------|--------|-----------------|
| Frequency Range | 80 | | 120 | MHz | |
| Voltage Supply | 39 | | 48 | Volts | Pout 250W |
| Power Gain | | 40 | | dB | Power In 14 dBm |
| Input Power | 14 | 12 | 16 | dBm | |
| Quiescent Current | | 150 | | mA | Vcc: 48V |
| Drain Efficiency | 69 | 74 | | % | Pout 250W CW |
| Power Output | | 250 | 250 | W | See note 1 |
| Input VSWR | | <1.5:1 | | | |
| Load VSWR | | | 25:1 | | 1 sec max |
| Load VSWR | | | 2:1 | | Continuous work |

Typical Performance

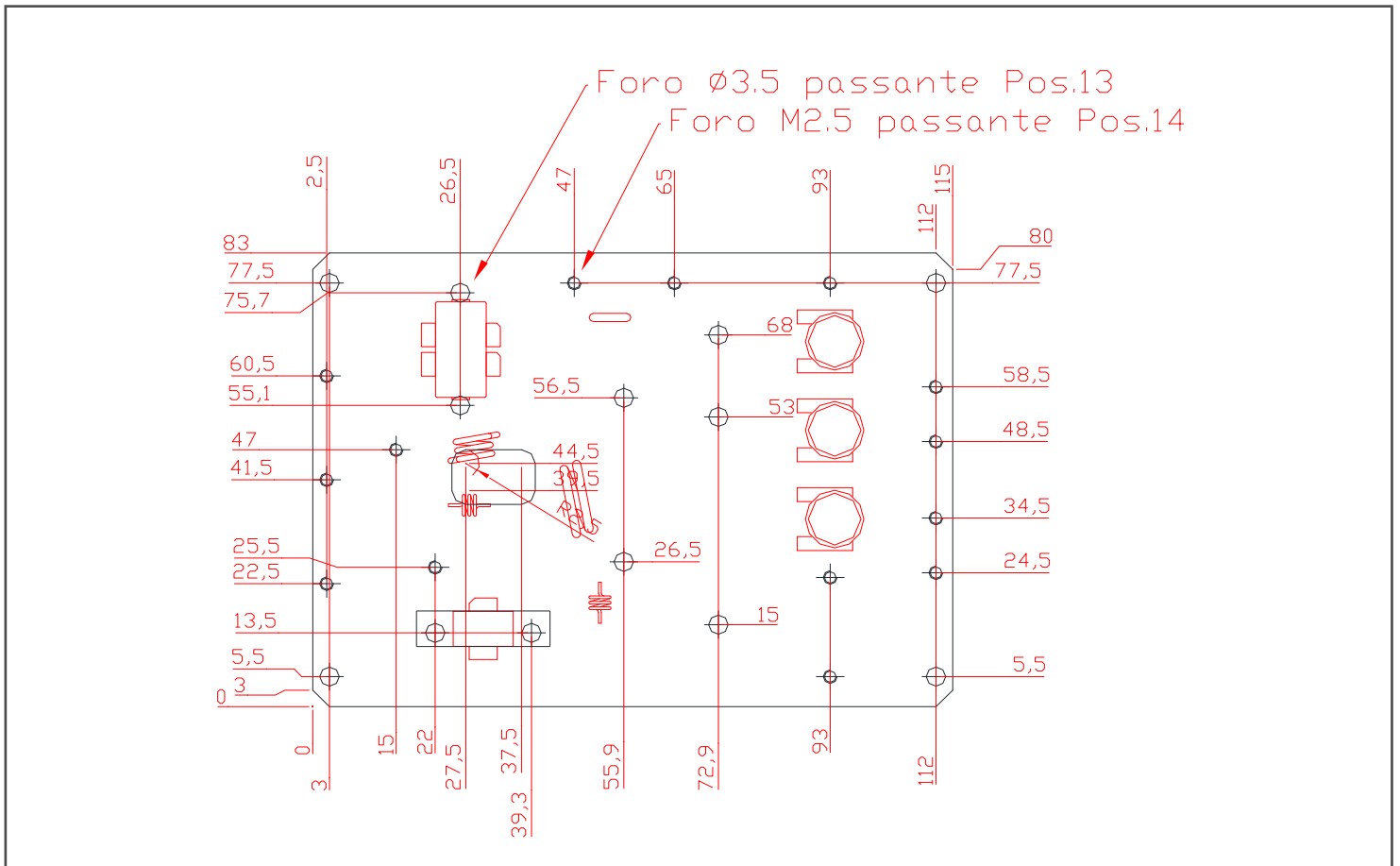
Measured on 50 Ohm dummy load without filter

| Test Frequency (Mhz) | Power Out (W) | Drain voltage (V) | Ids (A) | Efficiency % |
|----------------------|---------------|-------------------|---------|--------------|
| 87,5 | 250 | 38.3 | 9 | 72.5 |
| 92 | 250 | 37.9 | 9.5 | 69.4 |
| 98 | 250 | 36.4 | 9.2 | 74.7 |
| 102 | 250 | 39 | 8.6 | 74.5 |
| 108 | 250 | 44.6 | 7.6 | 73.8 |

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Mechanical Specifications



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Thermal Compound

Recommended Dow Corning 340 (heat sink compound) or equivalent

Application Note

Note 1 (thermal exchanger requirements)

Max operative temperature is measured very closed to the device flange. Max temperature value is referred to the nominal operative condition.

Please assure a big air flow volume in case of use at max power (250W)

Note 2 (Load matching)

This amplifier can work without power reduction on a 2:1 VSWR load matching with FM Signal.

Load mismatch higher than 2:1 can improve the temperature of output balun and RF device, a suitable protection system must be used.

Note 3 (shielding)

Due to the High gain of this pallet, a good shielding between final stage and any driver/low power stage is required. Please foresee a good RF choke also on the supply wiring.

Important Note

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Ordering Information

| | |
|---------------------------------|-------------|
| Product Name (standard Version) | TDE300FM |
| Product Name (with carrier) | TDE300FM/CC |

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