



EMP105-P2

ISSUED DATE: 07-12-04

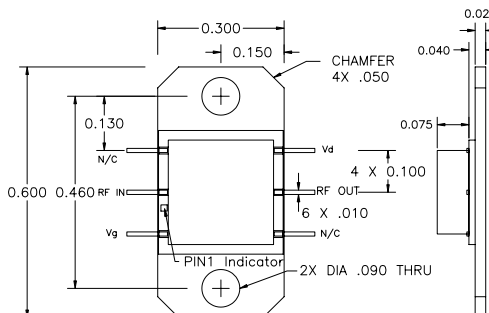
4.0 – 5.5 GHz Power Amplifier MMIC

FEATURES

- 4.0 – 5.5 GHz Operating Frequency Range
- 32.5dBm Output Power at 1dB Compression
- 18.0 dB Typical Small Signal Gain
- -40dBc OIMD3 @Each Tone Pout 22dBm

APPLICATIONS

- Point-to-point and point-to-multipoint radio
- Military Radar Systems



Optional Packaging solutions are available contact the Excelics sales team for details.



Caution! ESD sensitive device.

ELECTRICAL CHARACTERISTICS (T_a = 25 °C, 50 ohm, V_{DD}=10V, I_{DQ}=950mA)

| SYMBOL | PARAMETER/TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|------------------|---|------|------|-----|-------|
| F | Operating Frequency Range | 4.0 | | 5.5 | GHz |
| P1dB | Output Power at 1dB Gain Compression | 31.5 | 32.5 | | dBm |
| G _{ss} | Small Signal Gain | 16.0 | 18.0 | | dB |
| OIMD3 | Output 3 rd Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 22dBm | | -40 | | dBc |
| Input RL | Input Return Loss | | -11 | -8 | dB |
| Output RL | Output Return Loss | | -6 | | dB |
| I _{DSS} | Saturate Drain Current V _{DS} =3V, V _{GS} =0V | | 1680 | | mA |
| V _{DD} | Power Supply Voltage | | 10 | | V |
| R _{th} | Thermal Resistance (Au-Sn Eutectic Attach) | | 7 | | °C/W |
| T _b | Operating Base Plate Temperature | -35 | | +80 | °C |

ABSOLUTE MAXIMUM RATINGS FOR CONTINUOUS OPERATION^{1,2}

| SYMBOL | CHARACTERISTIC | VALUE |
|------------------|-------------------------|-------------------|
| V _{DS} | Drain to Source Voltage | 10 V |
| V _{GS} | Gate to Source Voltage | -4 V |
| I _{DD} | Drain Current | I _{DSS} |
| I _{GSF} | Forward Gate Current | 35mA |
| P _{IN} | Input Power | @ 3dB compression |
| T _{CH} | Channel Temperature | 150°C |
| T _{STG} | Storage Temperature | -65/150°C |
| P _T | Total Power Dissipation | 17W |

1. Operating the device beyond any of the above rating may result in permanent damage.
 2. Bias conditions must also satisfy the following equation $V_{DS} \cdot I_{DS} < (T_{CH} - T_{HS}) / R_{TH}$, where T_{HS} = ambient temperature

Specifications are subject to change without notice.

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