# RF AMPLIFIER MODEL *TM5125PM*

**Available as:** TM5125PM, 4 Pin TO-8 (T4)
TN5125PM, 4 Pin Surface Mount (SM3)
BX5125PM, Connectorized Housing (H1)

## Features

- High Gain: 20.5 dB Typical
- High Power: +24 dBm Typical
- Low Noise: 3.5 dB Typical
- Operating Temp. -55 ºC to +85 ºC
- Environmental Screening Available

## Specifications

| CHARACTERISTIC | TYPICAL Ta= 25 ºC | MIN/MAX Ta = -55 ºC to +85 ºC |
|---|---|---|
| Frequency | 5 - 125 MHz | 10 - 100 MHz |
| Gain (dB) | 20.5 | 19.5 Min / 21 Max. |
| Power @ 1 dB Comp. (dBm) | +24.0 | +22.5 Min. |
| Reverse Isolation (dB) | -24 | -23 Max. |
| VSWR In<br>Out | 1.7:1<br>1.35:1 | 2.0:1 Max.<br>2.0:1 Max. |
| Noise Figure (dB) | 3.5 | 4.0 Max. |
| Power Vdc<br>mA | +15<br>80 | +15<br>90 Max. |

Note: Care should always be taken to effectively ground the case of each unit.
Guaranteed when tested in a 50-ohm circuit.
Revision May 20, 2026

## Typical Intermodulation Performance at 25 ºC

Second Order Harmonic Intercept Point ..... +51 dBm (Typ.)
Second Order Two Tone Intercept Point ..... +46 dBm (Typ.)
Third Order Two Tone Intercept Point ..... +38 dBm (Typ.)

## Maximum (NO DAMAGE) Ratings

Ambient Operating Temperature ..... -55ºC to +100 ºC
Storage Temperature ..... -62ºC to +125 ºC
Case Temperature ..... +125 ºC
DC Voltage ..... +18 Volts
Continuous RF Input Power ..... +13 dBm
Short Term RF Input Power ..... 50 mW (1 Minute Max.)
Maximum Peak Power ..... 0.5 Watt (3 µsec Max.)

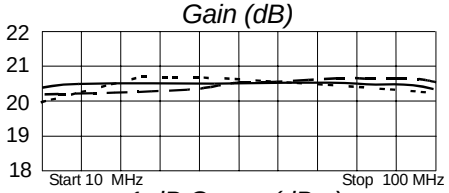
## Guaranteed Phase Noise Performance (dBc/Hz)*

| Frequency | Typical | Guarantee (min.) |
|---|---|---|
| 100 Hz | - 162 | -158 |
| 1 kHz | - 175 | -172 |
| 10 kHz | - 176 | -174 |
| 100 kHz | - 176 | -174 |
| 1 MHz | - 176 | -174 |

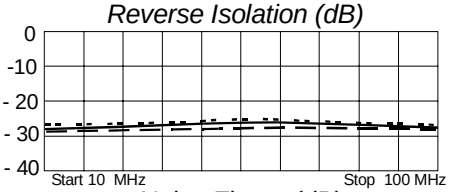
ECN Revision Updated NF values from 3.5 dB to 4.0 dB and typical values for linearity performance.

## Typical Performance Data

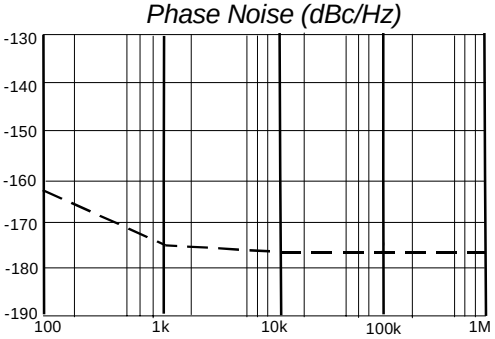
*Gain (dB)*



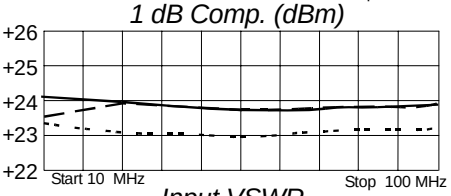

*Reverse Isolation (dB)*



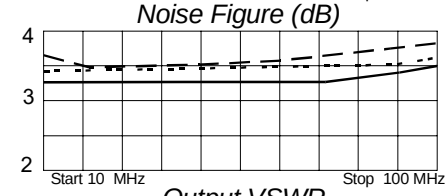

*Phase Noise (dBc/Hz)*



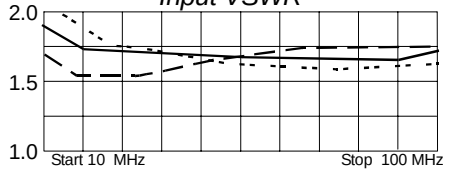

*1 dB Comp. (dBm)*



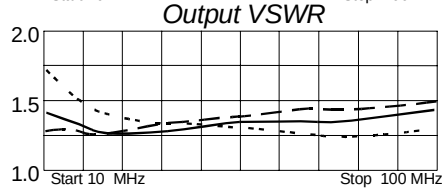

*Noise Figure (dB)*




*Input VSWR*




*Output VSWR*




*Legend——— +25 ºC – – – +85 ºC - - - - - - -55 ºC*

**Phase Noise Test Conditions:**
Carrier Frequency: 80 MHz
Power Output: +24 dBm
Temperature: 25 ºC
Agilent ES5500 System

**Linear S Parameters**

| FREQ. MHz | S11 Mag | S11 Deg | S21 Mag | S21 Deg | S12 Mag | S12 Deg | S22 Mag | S22 Deg |
|---|---|---|---|---|---|---|---|---|
| 5 | .39 | -32.94 | 9.94 | -151.50 | .05 | -151.80 | .26 | -19.89 |
| 10 | .29 | -26.29 | 10.56 | -168.32 | .05 | -172.06 | .15 | -23.55 |
| 25 | .26 | -20.09 | 10.79 | 176.24 | .05 | 169.91 | .12 | 8.61 |
| 50 | .25 | -25.12 | 10.79 | 162.45 | .05 | 154.52 | .17 | 18.79 |
| 75 | .26 | -34.68 | 10.69 | 150.84 | .06 | 139.83 | .20 | 15.63 |
| 100 | .27 | -46.93 | 10.52 | 140.02 | .06 | 126.88 | .22 | 8.47 |

SPECTRUM CONTROL