

# RF AMPLIFIER

## MODEL *TM5138PM*

Available as: TM5138PM, 4 Pin TO-8 (T4)  
 TN5138PM, 4 Pin Surface Mount (SM3)  
 FP5138PM, 4 Pin Flatpack (FP4)  
 BX5138PM, Connectorized Housing (H1)

### Features

- Superior Phase Noise
- High Output Power: +23 dBm Typical
- Low Noise Figure: 3.1 dB Typical
- Environmental Screening Available

### Specifications

| CHARACTERISTIC              | TYPICAL<br>Ta= 25 °C | MIN/MAX<br>Ta = -55 °C to +85 °C |
|-----------------------------|----------------------|----------------------------------|
| Frequency                   | 5 - 150 MHz          | 5 - 150 MHz                      |
| Gain (dB)                   | 15.5                 | 14 Min.                          |
| Power @ 1 dB<br>Comp. (dBm) | 23                   | 21 Min.                          |
| Reverse<br>Isolation (dB)   | -27                  | -26 Max.                         |
| VSWR In                     | 1.6:1                | 1.8:1 Max.                       |
| VSWR Out                    | 1.6:1                | 1.8:1 Max.                       |
| Noise Figure (dB)           | 3.1                  | 4.0 Max.                         |
| Power Vdc                   | +15                  | +15                              |
| mA                          | 88                   | 95 Max.                          |

Note: Care should always be taken to effectively ground the case of each unit.

### Typical Intermodulation Performance at 25 °C

Second Order Harmonic Intercept Point ..... +52 dBm (Typ.)  
 Second Order Two Tone Intercept Point ..... +46 dBm (Typ.)  
 Third Order Two Tone Intercept Point ..... +38 dBm (Typ.)

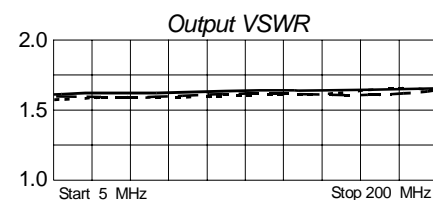
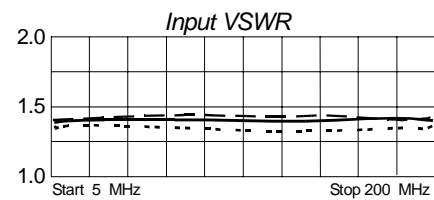
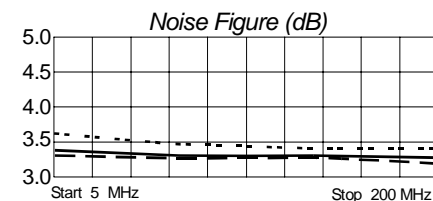
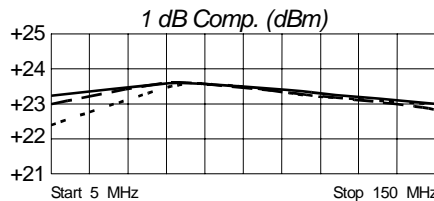
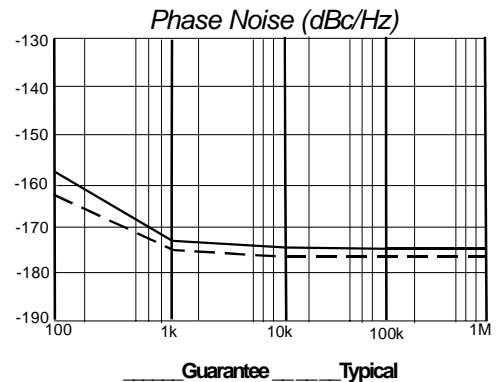
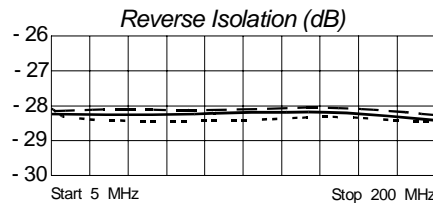
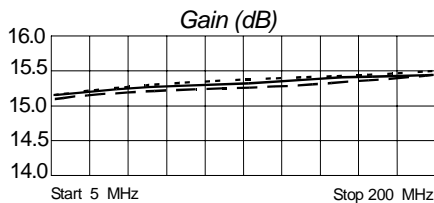
### Maximum Ratings

Ambient Operating Temperature ..... -55°C to +100 °C  
 Storage Temperature ..... -62°C to +125 °C  
 Case Temperature ..... +125 °C  
 DC Voltage ..... +18 Volts  
 Continuous RF Input Power ..... +18 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    | -158    | -154             |
| 1 kHz     | -163    | -160             |
| 10 kHz    | -176    | -174             |
| 100 kHz   | -176    | -174             |
| 1 MHz     | -176    | -174             |

### Typical Performance Data



Legend ——— +25 °C    - - - +85 °C    ····· -55 °C

### \*Phase Noise Test Conditions:

- Carrier Frequency: 80 MHz
- Power Output: 23 dBm
- Temperature: 25 °C
- Agilent ES5500 System



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