

# RF AMPLIFIER

## MODEL *TM7221*

Available as: TM7221, 4 Pin TO-8 (T4)  
 TN7221, 4 Pin Surface Mount (SM3)  
 FP7221, 4 Pin Flatpack (FP4)  
 BX7221, Connectorized Housing (H1)

### Features

- Low Noise Figure: 2 dB Typical
- High Gain: 28.5 dB Typical
- Operating Temp. - 55 °C to +85 °C
- Environmental Screening Available

### Specifications

| CHARACTERISTIC              | TYPICAL<br>Ta= 25 °C | MIN/MAX<br>Ta = -55 °C to +85 °C |
|-----------------------------|----------------------|----------------------------------|
| Frequency                   | 20-200 MHz           | 20-200 MHz                       |
| Gain (dB)                   | 28.5                 | 27.0 Min.                        |
| Power @ 1 dB<br>Comp. (dBm) | +18.5                | +15 Min.                         |
| Reverse<br>Isolation (dB)   | -31.5                | -30 Max                          |
| VSWR In                     | <1.5:1               | 2.0:1 Max.                       |
| Out                         | <1.4:1               | 2.0:1 Max.                       |
| Noise Figure (dB)           | 2.0                  | 3.0 Max.                         |
| Power Vdc                   | +15                  | +15 Min.                         |
| mA                          | 29                   | 32 Max.                          |

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

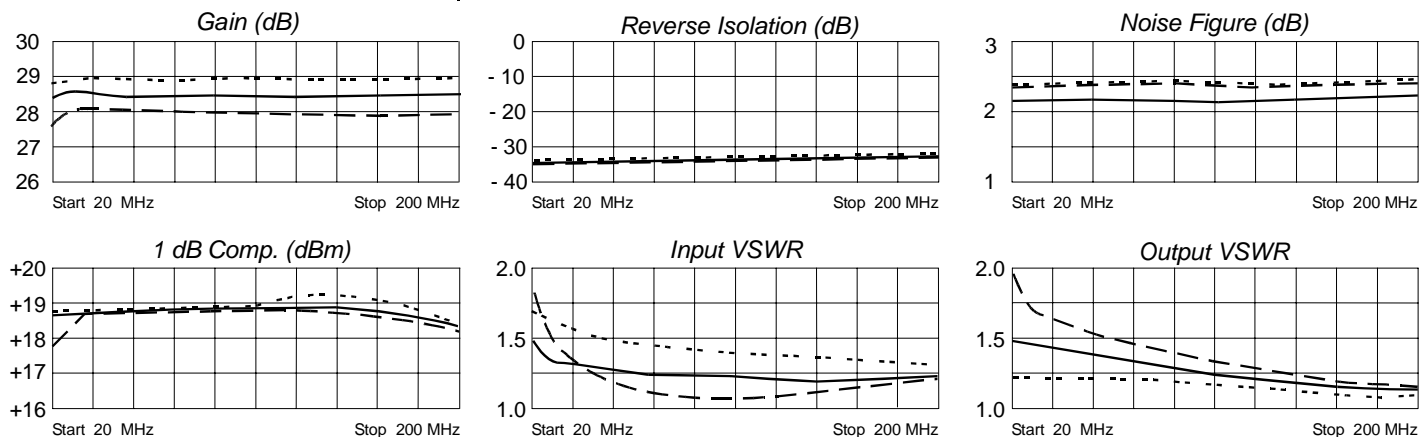
### Typical Intermodulation Performance at 25 ° C

Second Order Harmonic Intercept Point..... +44 dBm (Typ.)  
 Second Order Two Tone Intercept Point..... +38 dBm (Typ.)  
 Third Order Two Tone Intercept Point..... +33 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 ..... + 13 dBm  
 Short Term RF Input Power ..... 50 Milliwatts (1 Minute Max.)  
 Maximum Peak Power ..... 0.5 Watt (3 µsec Max.)

### Typical Performance Data



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

### Linear S-Parameters

| FREQ.<br>MHz | S11 |      | S21   |      | S12 |     | S22 |      |
|--------------|-----|------|-------|------|-----|-----|-----|------|
|              | Mag | Deg  | Mag   | Deg  | Mag | Deg | Mag | Deg  |
| 10           | .39 | - 92 | 25.50 | -151 | .02 | 14  | .24 | 140  |
| 25           | .18 | -130 | 26.62 | -178 | .02 | 2   | .18 | 153  |
| 50           | .12 | -169 | 26.61 | 163  | .02 | 2   | .17 | 148  |
| 100          | .09 | 139  | 26.43 | 135  | .02 | 6   | .14 | 135  |
| 150          | .08 | 76   | 26.38 | 110  | .03 | - 5 | .10 | 127  |
| 200          | .10 | 20   | 26.34 | 85   | .02 | -11 | .06 | 132  |
| 300          | .26 | - 69 | 27.30 | 33   | .02 | -27 | .05 | -161 |



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