

# 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.                       |
| VSWR Out                    | <1.4:1               | 2.0:1 Max.                       |
| Noise figure (dB)           | 2.0                  | 3.0 Max.                         |
| Power Vdc                   | +15                  | +15                              |
| Power mA                    | 29                   | 32 Max.                          |

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

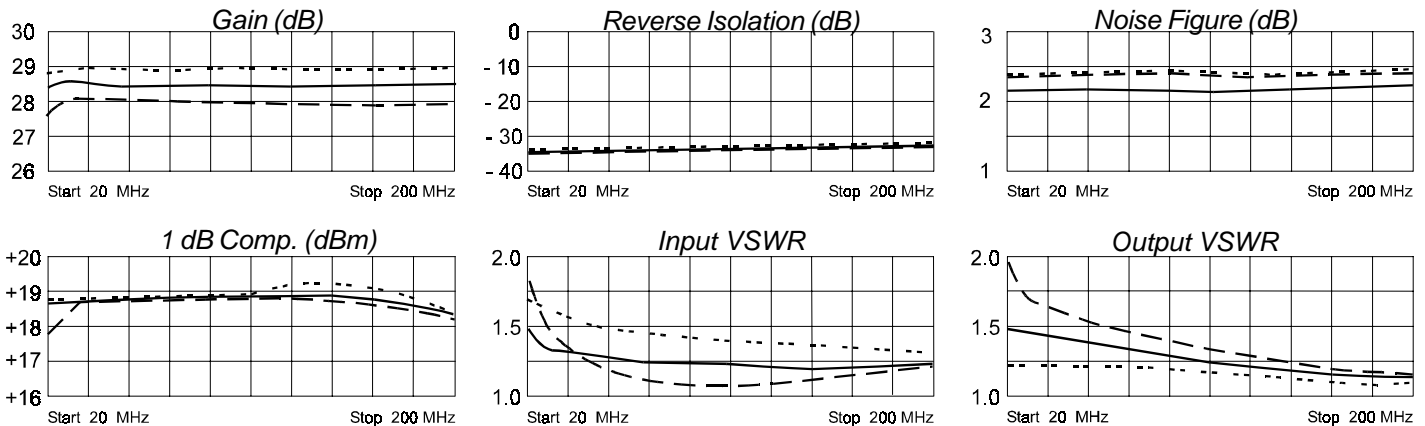
### Typical Intermodulation Performance at 25 °C

Second Order Harmonic Intercept Point ..... +44 (Typ.)  
 Second Order Two Tone Intercept Point ..... +38 (Typ.)  
 Third Order Two Tone Intercept Point ..... +33 (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 |



2707 Black Lake Place, Philadelphia, PA 19154

TEL 215-464-4000 ···· FAX 215-464-4001 3/18/03