

# RF AMPLIFIER

## MODEL *TM6683*

Available as: TM6683, 4 Pin TO-8 (T4)  
 TN6683, 4 Pin Surface Mount (SM3)  
 FP6683, 4 Pin Flatpack (FP4)  
 BX6683, Connectorized Housing (H1)

### Features

- High Gain: 34 dB Typical
- Low Power Drain: 70 mW @ 5 Volts
- 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                   | 10 - 250 MHz          | 10 - 250 MHz                     |
| Gain (dB)                   | 34                    | 32.5 Min.                        |
| Power @ 1 dB<br>Comp. (dBm) | -1                    | -3 Min.                          |
| Reverse<br>Isolation (dB)   | -47.5                 | -45 Max.                         |
| VSWR In                     | <1.75:1               | 2.0:1 Max.                       |
| VSWR Out                    | <1.75:1               | 2.0:1 Max.                       |
| Noise figure (dB)           | <2.0                  | 3.0 Max.                         |
| Power Vdc                   | +5                    | +5                               |
| mA                          | 14                    | 16 Max.                          |

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

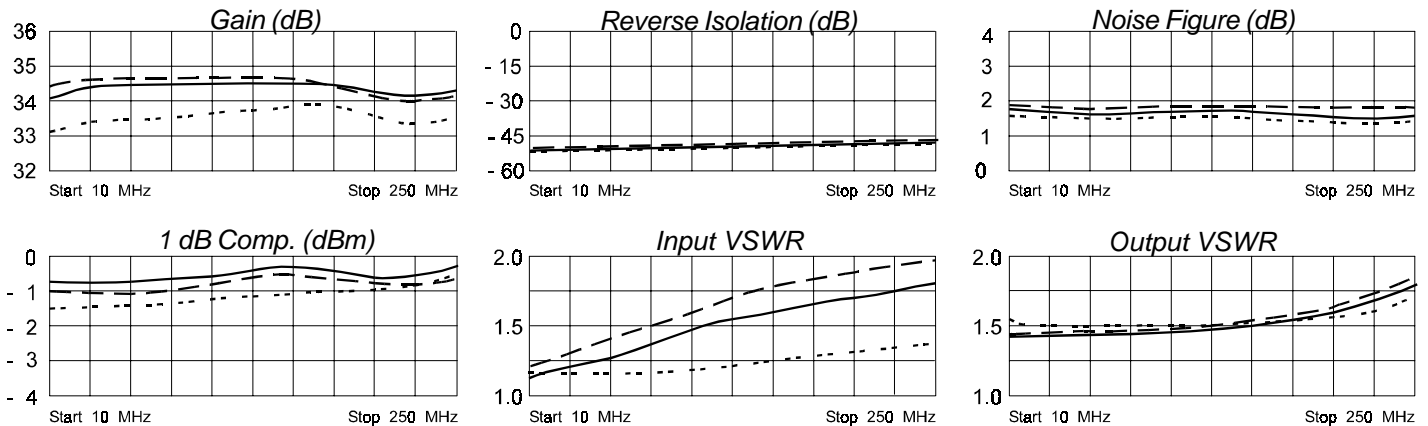
### Typical Intermodulation Performance at 25 ° C

Second Order Harmonic Intercept Point ..... +15 (Typ.)  
 Second Order Two Tone Intercept Point ..... + 9 (Typ.)  
 Third Order Two Tone Intercept Point ..... +10 (Typ.)

### Maximum Ratings

Ambient Operating Temperature ..... -55°C to + 100 °C  
 Storage Temperature ..... -62°C to + 125 °C  
 Case Temperature ..... + 125 °C  
 DC Voltage ..... + 8 Volts  
 Continuous RF Input Power ..... + 10 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           | .02       | 134  | 24.54     | - 7  | .00       | 17  | .18       | - 7  |
| 50           | .10       | 72   | 24.93     | - 36 | .00       | -44 | .18       | - 27 |
| 100          | .17       | 48   | 26.11     | - 71 | .00       | 64  | .18       | - 53 |
| 200          | .26       | 12   | 28.09     | -134 | .00       | 28  | .21       | - 90 |
| 300          | .31       | - 20 | 29.12     | -178 | .01       | 9   | .41       | -125 |



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