

# RF AMPLIFIER

## MODEL QBH-150

Available as: QBH-150, 4 Pin TO-8 Tall (080-22502-0001)  
QBH-9-150, Connectorized Housing (ES E52-1501)

### Features

- High Gain: 20.0 dB Typical
- High Power: +18 dBm Typical
- Operating Temp. -55 °C to +85 °C
- Environmental Screening Available

### Specifications

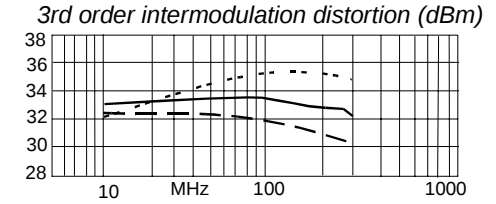
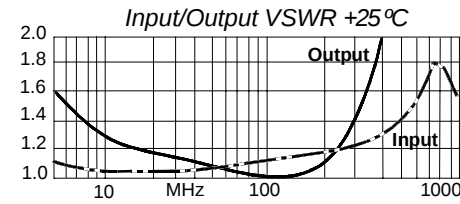
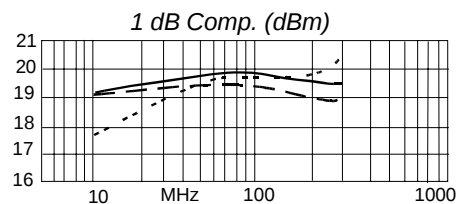
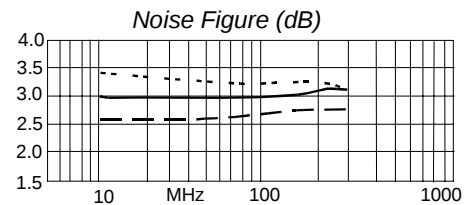
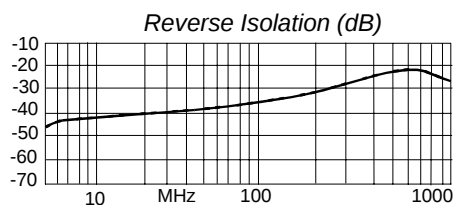
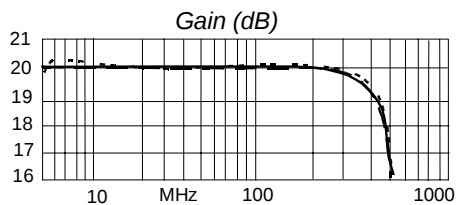
| CHARACTERISTIC         | TYPICAL<br>Ta = 25 °C | MIN/MAX<br>Ta = -55 °C to +85 °C |
|------------------------|-----------------------|----------------------------------|
| Frequency              | 10 - 300 MHz          | 10 - 300 MHz                     |
| Gain (dB)              | 20.0 ± 0.5            | —                                |
| Gain vs. Temperature   | —                     | +0.4/-0.8 Max.                   |
| Gain Flatness          | 0.4                   | 0.6 Max.                         |
| Reverse Isolation (dB) | -25                   | -25 Min.                         |
| VSWR In                | 1.5:1                 | 1.5:1 Max.                       |
| Out                    | 2.0:1                 | 2.0:1 Max.                       |
| 1 dB Compression (dBm) | +18                   | +17 Min.                         |
| Output Intercept point |                       |                                  |
| 3rd Order              | +30                   | +28 Min.                         |
| 2nd Order              | +40                   | +36 Min.                         |
| Noise Figure (dB)      | 3.9                   | 4.4 Max.                         |
| Power Vdc              | +15                   | +15                              |
| mA                     | 46                    | 47 Max.                          |

### Maximum Ratings

Ambient Operating Temperature ..... -55°C to +125 °C  
Storage Temperature ..... -65°C to +150 °C  
Case Temperature ..... +125 °C  
DC Voltage ..... +20 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.)

Note: Specifications are guaranteed when tested in a 50 Ohm system.  
Specifications indicated as typical are not guaranteed.

### Typical Performance Data



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

### Linear S-Parameters Data

| FREQ.<br>MHz | -- S11--<br>dB | -- S11--<br>Ang | -- S21--<br>dB | -- S21--<br>Ang | -- S12--<br>dB | -- S12--<br>Ang | -- S22--<br>dB | -- S22--<br>Ang |
|--------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|
| 10           | -30.1          | -137.1          | 20.0           | -176.5          | -41.0          | 26.4            | -18.3          | 125.0           |
| 40           | -29.2          | 119.5           | 20.0           | 166.0           | -38.0          | 22.8            | -26.1          | 131.4           |
| 60           | -26.9          | 91.4            | 20.0           | 157.4           | -36.9          | 28.7            | -28.4          | 131.8           |
| 70           | -26.0          | 80.7            | 20.0           | 153.2           | -36.3          | 28.7            | -29.5          | 131.0           |
| 90           | -24.3          | 63.0            | 20.0           | 145.1           | -35.1          | 30.0            | -32.5          | 130.5           |
| 100          | -23.5          | 54.8            | 20.0           | 141.0           | -34.6          | 30.0            | -34.4          | 132.5           |
| 200          | -19.7          | -14.7           | 20.1           | 99.7            | -30.1          | 20.8            | -26.0          | -135.0          |
| 250          | -19.3          | -53.5           | 20.2           | 77.9            | -28.2          | 12.7            | -19.6          | -154.9          |
| 300          | -19.0          | -96.7           | 20.1           | 55.1            | -26.6          | 1.6             | -15.2          | -178.2          |



Spectrum Microwave · 2144 Franklin Drive N.E. · Palm Bay, Florida 32905 · PH (888) 553-7531 · Fax (888) 553-7532 03/11/05

www.SpectrumMicrowave.com Spectrum Microwave · 2707 Black Lake Place · Philadelphia, Pennsylvania 19154 · PH (215) 464-4000 · Fax (215) 464-4001