

# RF AMPLIFIER

Available as: QBH-116, 4 Pin TO-8 Tall (080-22502-0001)  
QBH-9-116, Connectorized Housing (ES E52-1501)

## MODEL QBH-116

### Features

- High Gain: 12.2 dB Typical
- High Power: +16 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              | 5 - 400 MHz          | 5 - 400 MHz                      |
| Gain (dB)              | 12.2 ± 0.5           | —                                |
| Gain vs. Temperature   | —                    | +0.5/-0.5 Max.                   |
| Gain Flatness          | 0.6                  | 0.8 Max.                         |
| Reverse Isolation (dB) | -25                  | -24 Min.                         |
| VSWR In                | 1.5:1                | 1.6:1 Max.                       |
| VSWR Out               | 1.5:1                | 1.6:1 Max.                       |
| 1 dB Compression (dBm) | +16                  | +15 Min.                         |
| Output Intercept point |                      |                                  |
| 3rd Order              | +29                  | +28 Min.                         |
| 2nd Order              | +38                  | +37 Min.                         |
| Noise Figure (dB)      | 6.0                  | 6.4 Max.                         |
| Power Vdc              | +15                  | +15                              |
| mA                     | 47                   | 48 Max.                          |

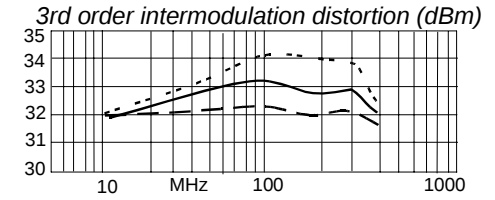
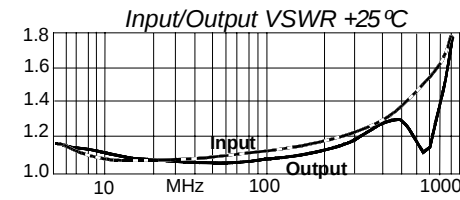
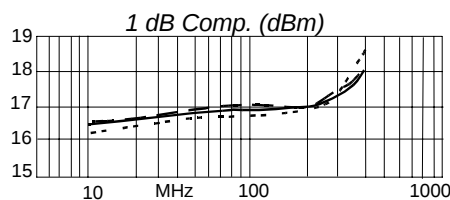
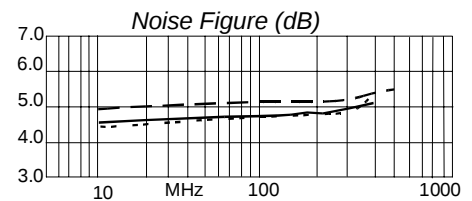
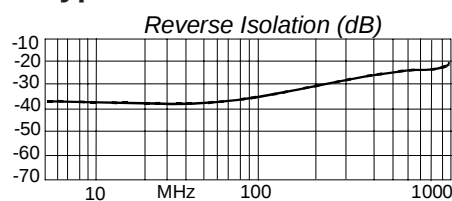
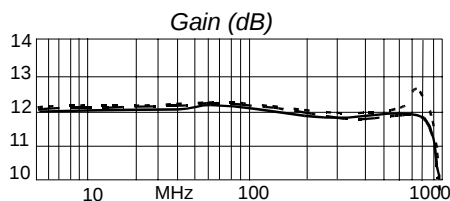
### Maximum Ratings

Ambient Operating Temperature ..... -55°C to +125 °C  
Storage Temperature ..... -65°C to +150 °C  
Case Temperature ..... +125 °C  
DC Voltage ..... +18.5 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:

1. 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 -- |        | -- S21 -- |        | -- S12 -- |       | -- S22 -- |        |
|--------------|-----------|--------|-----------|--------|-----------|-------|-----------|--------|
|              | dB        | Ang    | dB        | Ang    | dB        | Ang   | dB        | Ang    |
| 5            | -24.2     | -84.3  | 11.9      | -168.1 | -37.4     | 13.8  | -24.0     | 117.5  |
| 9            | -30.8     | -67.1  | 12.0      | -175.3 | -37.4     | 10.4  | -27.1     | 101.0  |
| 20           | -32.9     | -33.2  | 12.1      | 176.6  | -37.2     | 10.0  | -32.0     | 65.6   |
| 40           | -29.8     | -38.6  | 12.1      | 167.8  | -36.7     | 14.7  | -35.5     | 16.1   |
| 60           | -28.2     | -52.0  | 12.1      | 160.2  | -36.0     | 17.1  | -34.0     | -17.4  |
| 80           | -26.8     | -64.8  | 12.1      | 152.9  | -35.1     | 22.1  | -32.0     | -38.1  |
| 100          | -25.6     | -76.5  | 12.1      | 145.7  | -34.1     | 22.3  | -30.2     | -52.5  |
| 300          | -19.8     | -168.7 | 11.9      | 74.6   | -27.6     | 0.1   | -20.5     | -137.6 |
| 400          | -18.7     | 149.3  | 11.8      | 38.6   | -26.0     | -20.5 | -18.9     | -175.1 |



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