

# RF AMPLIFIER

## MODEL QB-166

Available as: QB-166, Housing (080-22509-0001)

### Features

- High Gain: 12.7 dB Typical
- High Power: +31 dBm Typical
- Operating Temp. 0 °C to +50 °C
- Environmental Screening Available

### Specifications<sup>1</sup>

| CHARACTERISTIC         | TYPICAL<br>Ta= 25 °C | MIN/MAX<br>Ta = 0 °C to +50 °C |
|------------------------|----------------------|--------------------------------|
| Frequency              | 1 - 32 MHz           | 1 - 32 MHz                     |
| Gain (dB)              | 12.7 ± 0.5           | —                              |
| Gain vs. Temperature   | —                    | +0.3/-0.3 Max.                 |
| Gain Flatness          | 0.5                  | 0.5 Max.                       |
| Reverse Isolation (dB) | 40                   | 40 Min.                        |
| VSWR                   | In<br>Out            | 1.5:1<br>1.5:1 Max.            |
| 1 dB Compression (dBm) | +31                  | +31 Min.                       |
| Output Intercept point |                      |                                |
| 3rd Order              | +55                  | +55 Min.                       |
| 2nd Order              | +115                 | +110 Min.                      |
| Noise Figure (dB)      | 7.8                  | 8.0 Max.                       |
| Power                  | Vdc<br>mA            | +24<br>450                     |

### Absolute Maximum (No Damage) Ratings

Ambient Operating Temperature ..... 0 °C to +50 °C  
 Storage Temperature ..... -65 °C to +125 °C  
 Case Temperature ..... +125 °C  
 DC Voltage ..... +25 Volts  
 Continuous RF Input Power<sup>2</sup>.....+23 dBm  
 Short Term RF Input Power<sup>2</sup>.....+27 dBm (1 Minute Max.)

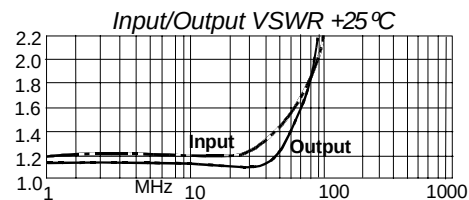
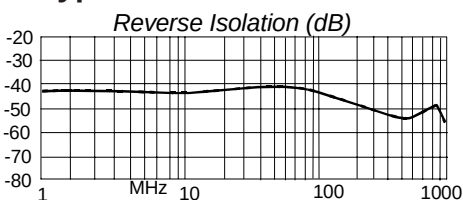
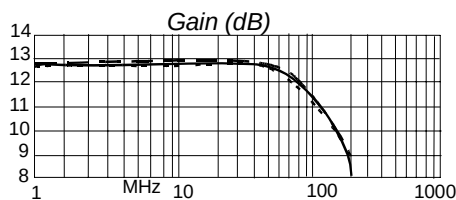
#### Notes:

- Specifications are guaranteed when tested in a 50 Ohm system with a DC supply voltage tolerance of ±2%.
- RF output terminated into 50 Ohms.

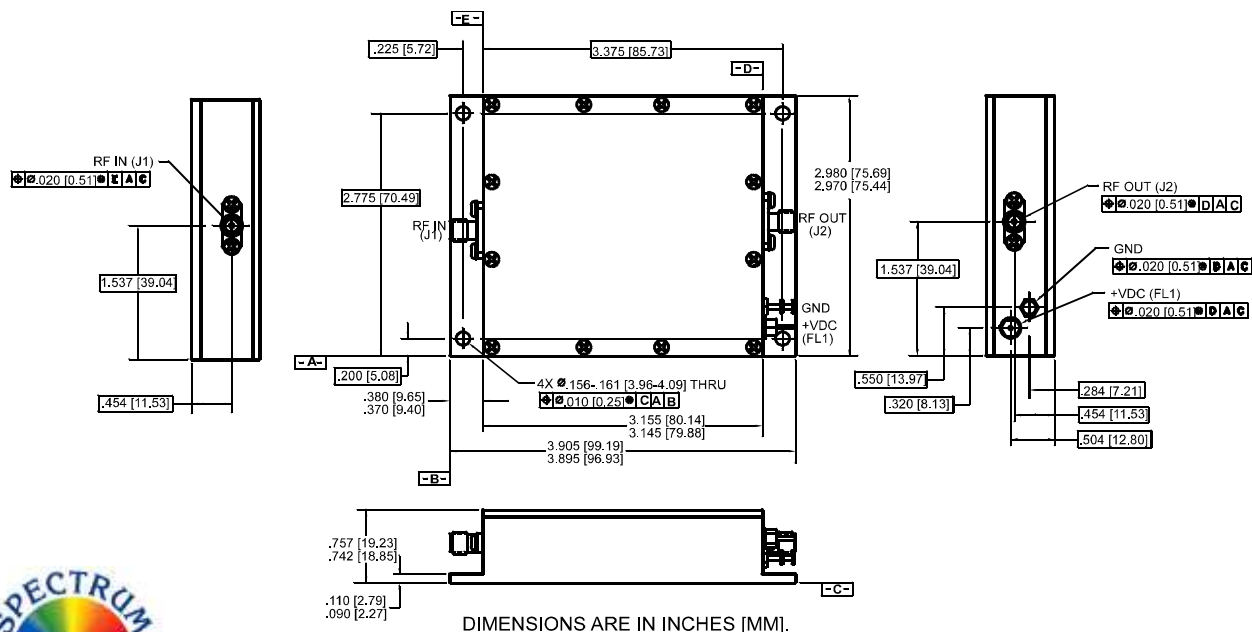
### Typical S-Parameter Data

| FREQ.<br>MHz | dB    | S11--<br>Ang | dB   | S21--<br>Ang | dB    | S12--<br>Ang | dB    | S22--<br>Ang |
|--------------|-------|--------------|------|--------------|-------|--------------|-------|--------------|
| 1            | -21.0 | 6.7          | 12.8 | 179.5        | -43.9 | -176.8       | -24.1 | -177.0       |
| 4            | -20.6 | -7.4         | 12.8 | 172.0        | -43.9 | 177.4        | -24.6 | 161.2        |
| 6            | -20.5 | -13.9        | 12.7 | 167.6        | -44.0 | 174.1        | -24.9 | 151.6        |
| 7            | -20.5 | -17.4        | 12.7 | 165.5        | -44.1 | 171.3        | -25.1 | 146.5        |
| 9            | -20.3 | -23.0        | 12.7 | 161.3        | -44.0 | 169.8        | -25.5 | 137.2        |
| 12           | -20.2 | -32.1        | 12.7 | 155.1        | -44.1 | 166.0        | -26.3 | 141.9        |
| 20           | -19.6 | -55.5        | 12.7 | 138.7        | -44.1 | 152.8        | -28.6 | 70.4         |
| 30           | -18.4 | -85.2        | 12.7 | 117.9        | -44.1 | 138.8        | -30.9 | 4.0          |
| 32           | -18.2 | -89.9        | 12.7 | 113.8        | -43.3 | 132.6        | -29.1 | -6.7         |

### Typical Performance Data



Legend ——— + 25 °C - - - + 50 °C - - - - 0 °C



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