

AFT20013 6.0 TO 20.0 GHz 6 LEADED MICROWAVE AMPLIFIER

| | |
|------------------------------|-----------------|
| Typical Values | AFT20013 |
| High Gain | 34.0 dB |
| High Reverse Isolation | 60 dB |
| 6 Leaded Microwave Package | |

SPECIFICATIONS*

| Parameter | Typical | Guaranteed | |
|------------------------------------|----------------|----------------|----------------|
| | | 0 to 50 °C | -55 to +85 °C |
| Frequency (Min.) | 6.0 - 20.0 GHz | 6.0 - 20.0 GHz | 6.0 - 20.0 GHz |
| Small Signal Gain (Min.) | 34.0 dB | 28.0 dB | 27.0 dB |
| Gain Flatness (Max.) | ±3.0 dB | ±3.5 dB | ±3.5 dB |
| Noise Figure (Max.) | 9.5 dB | 12.5 dB | 12.8 dB |
| SWR (Max.) | 2.0:1 | 2.8:1 | 2.8:1 |
| Power Output (Min.) @ 1dB comp. | +14.0 dBm | +11.0 dBm | +10.0 dBm |
| Reverse Isolation | 60.0 dB | — | — |
| DC Current (Max.) | 243 mA | 270 mA | 270 mA |

* Measured in a 50-ohm system at +5 Vdc @ 243 mA unless otherwise specified.

INTERMODULATION PERFORMANCE

| | |
|---|-----------------|
| Typical @ 25 °C; 6000 MHz | AFT20013 |
| Second Order Harmonic Intercept Point | +48 dBm |
| Second Order Two Tone Intercept Point | +42 dBm |
| Third Order Two Tone Intercept Point | +28 dBm |

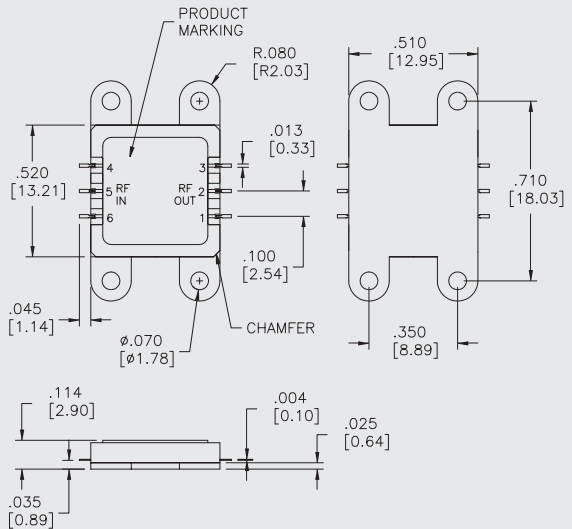
ABSOLUTE MAXIMUM RATINGS

| | |
|--|---------------|
| Storage Temperature | -65 to 165 °C |
| Maximum Case Temperature | +85 °C |
| Maximum DC Voltage | +7.5 Volts |
| Maximum Continuous RF Input Power | +20 dBm |
| Maximum Short Term Input Power (1 Minute Max.) | +20 dBm |
| Maximum Peak Power (3 μsec Max.) | +20 dBm |
| Thermal Resistance ¹ (θjc) | +40 °C/Watt |
| Junction Temperature Rise Above Case (Tjc) | +60 °C |

¹ Thermal resistance is based on total power dissipation.

AFT20013

6 Leaded Package for Amplifiers

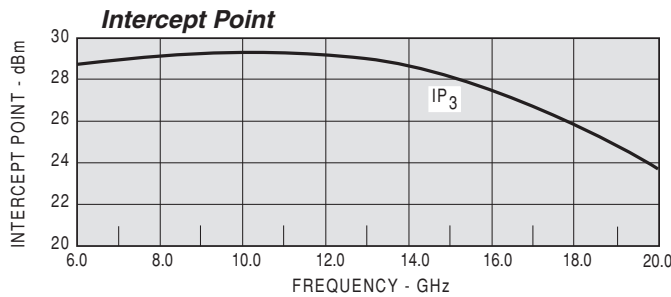
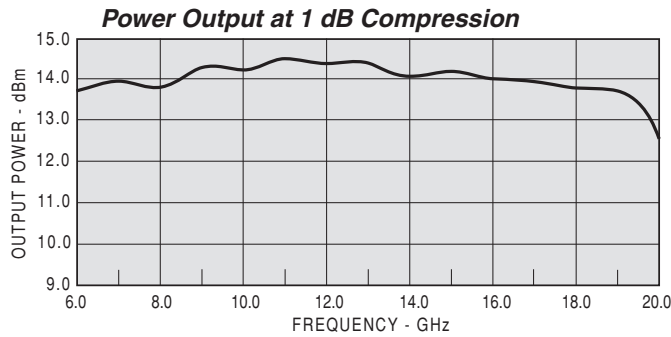
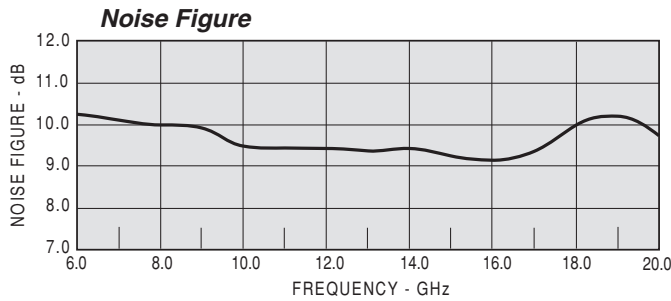
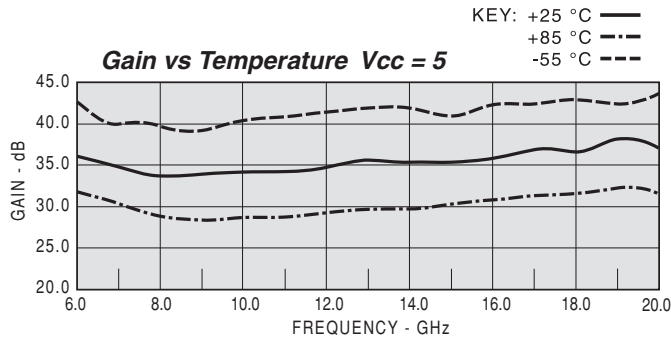


- Pin #1: NC
- Pin #2: RF Output
- Pin #3: V_D
- Pin #4: NC
- Pin #5: RF Input
- Pin #6: NC

DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AFT20013 Vcc=+5V Icc=243.0

| FREQ | SWR | SWR | GAIN | PHASE | GROUP DELAY | REV/ISO |
|-------|------|------|-------|---------|-------------|---------|
| MHZ | IN | OUT | DB | DEG | NSEC | DB |
| 6000 | 1.32 | 1.24 | 35.82 | 179.84 | 0.654 | -68.28 |
| 6500 | 1.38 | 1.08 | 34.41 | 71.20 | 0.517 | -74.06 |
| 7000 | 1.62 | 1.28 | 34.52 | -18.34 | 0.514 | -62.75 |
| 7500 | 1.45 | 1.21 | 34.37 | -115.32 | 0.520 | -62.24 |
| 8000 | 1.26 | 1.23 | 33.54 | 157.68 | 0.475 | -59.56 |
| 8500 | 1.20 | 1.35 | 33.35 | 77.17 | 0.461 | -64.66 |
| 9000 | 1.12 | 1.39 | 33.20 | -3.16 | 0.457 | -67.61 |
| 9500 | 1.07 | 1.41 | 33.43 | -81.09 | 0.431 | -65.52 |
| 10000 | 1.09 | 1.30 | 33.92 | -161.24 | 0.450 | -62.56 |
| 10500 | 1.12 | 1.29 | 34.07 | 119.63 | 0.440 | -61.54 |
| 11000 | 1.15 | 1.31 | 34.12 | 41.88 | 0.425 | -63.52 |
| 11500 | 1.15 | 1.33 | 34.44 | -34.63 | 0.433 | -64.19 |
| 12000 | 1.11 | 1.25 | 34.68 | -110.91 | 0.420 | -62.24 |
| 12500 | 1.05 | 1.03 | 35.36 | 171.94 | 0.443 | -62.57 |
| 13000 | 1.23 | 1.30 | 35.38 | 88.95 | 0.484 | -61.59 |
| 13500 | 1.21 | 1.27 | 34.87 | 15.19 | 0.388 | -59.84 |
| 14000 | 1.19 | 1.28 | 35.12 | -60.63 | 0.427 | -60.39 |
| 14500 | 1.26 | 1.52 | 35.08 | -137.79 | 0.435 | -59.63 |
| 15000 | 1.29 | 1.65 | 35.22 | 147.75 | 0.417 | -58.82 |
| 15500 | 1.29 | 1.80 | 35.43 | 71.74 | 0.425 | -57.64 |
| 16000 | 1.22 | 1.87 | 35.63 | -5.65 | 0.431 | -58.48 |
| 16500 | 1.05 | 1.74 | 35.88 | -80.59 | 0.398 | -57.70 |
| 17000 | 1.24 | 2.02 | 36.92 | -159.17 | 0.424 | -58.09 |
| 17500 | 1.50 | 2.49 | 37.75 | 108.08 | 0.562 | -56.36 |
| 18000 | 1.39 | 1.80 | 36.47 | 29.02 | 0.391 | -66.55 |
| 18500 | 1.44 | 1.42 | 37.27 | -50.24 | 0.470 | -63.23 |
| 19000 | 1.39 | 1.24 | 38.13 | -136.44 | 0.516 | -63.01 |
| 19500 | 1.66 | 1.51 | 39.01 | 120.69 | 0.571 | -62.14 |
| 20000 | 1.93 | 1.83 | 37.43 | 21.05 | 0.505 | -64.86 |