

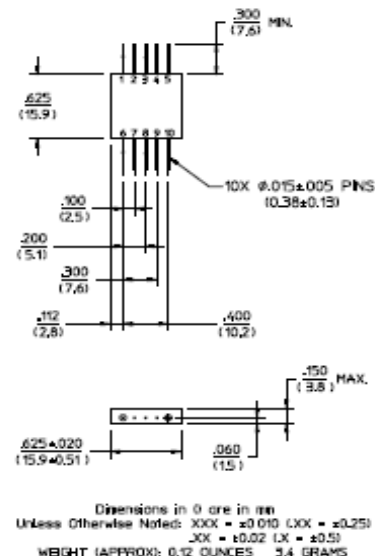
Features

- 2.5 dB Typical Midband Noise Figure
- +23 dBm Typical 1 dB Compression Point
- +32 dBm Typical Third Order Intercept

FP-3

Description

M/A-COM's AM-191 is a coupler feedback amplifier with high intercept and compression points. The use of coupler feedback minimizes noise figure and current in a high intercept amplifier. This amplifier is packaged in a flatpack. Due to the internal power dissipation the thermal rise minimized. The ground plane on the PC board should be configured to remove heat from under the package. AM-191 is ideally suited for use where a low noise, high reliability amplifier is required.



Electrical Specifications: ^{1,2} T_A = -55°C to +85°C Case Temperature

| Parameter | Test Conditions | Frequency | Units | Min. | Typ. | Max. |
|---------------------------------|-------------------------------|--------------------------------|----------------|--------|--------|----------------|
| Gain | @+25°C | 250 MHz | dB | 23.0 | 23.5 | 24.0 |
| Frequency Response | — | 100 - 600 MHz | dB | — | — | ±1.0 |
| Gain Variation with Temperature | — | 100 - 600 MHz | dB | — | — | +1.0 |
| 1 dB Compression | Output Power | 100 - 600 MHz | dBm | +20 | — | — |
| Noise Figure | — | 100 - 600 MHz | dB | — | — | 4.5 |
| Reverse Transmission | — | 100 - 600 MHz | dB | — | -30 | -28 |
| VSWR | — | 100 - 600 MHz 200 - 500 MHz | Ratio Ratio | — — | — — | 2.5:1 2.0:1 |
| Output IP ₂ | Two-Tone inputs up to +10 dBm | 100 - 600 MHz | dBm | +38 | — | — |
| Output IP ₃ | Two-Tone inputs up to +10 dBm | 100 - 600 MHz | dBm | +28 | — | — |
| V _{bias} | — | — | VDC | +14.5 | +15.0 | +15.5 |
| I _{bias} | V _{bias} = +15.0 VDC | — | mA | — | 77 | 95 |
| Power Dissipation | @ +15 V Bias | — | mW | — | 1155 | — |

1. All specifications apply when operated at +15 VDC, with 50 ohms source and load impedance.
2. Heat Sinking: Operation at case temperature above 95°C is not recommended. Heat sinking adequate to dissipate 1.25W must be provided in use.

S-Parameter Data

| Frequency (MHz) | S11 MAG/ANG | S21 MAG/ANG | S12 MAG/ANG | S22 MAG/ANG |
|-----------------|-------------|--------------|-------------|-------------|
| 100 | 0.33/-115.7 | 14.54/-143.3 | 0.02/-143.4 | 0.20/-171.1 |
| 150 | 0.25/-128.6 | 15.35/167.9 | 0.02/-168.5 | 0.25/121.6 |
| 200 | 0.17/-148.7 | 15.32/133.1 | 0.02/-130.5 | 0.27/8.5 |
| 250 | 0.16/-165.8 | 15.47/103.0 | 0.01/96.3 | 0.29/-43.6 |
| 300 | 0.16/177.3 | 15.07/76.5 | 0.01/63.3 | 0.29/-79.5 |
| 350 | 0.17/165.0 | 14.37/51.7 | 0.01/30.8 | 0.26/-109.7 |
| 400 | 0.18/157.2 | 14.16/27.6 | 0.01/0.9 | 0.24/-140.3 |
| 500 | 0.21/176.3 | 14.33/-17.6 | 0.02/-44.7 | 0.21/-4.6 |
| 600 | 0.30/-174.0 | 15.11/-68.9 | 0.02/-86.9 | 0.23/-59.4 |

Pin Configuration

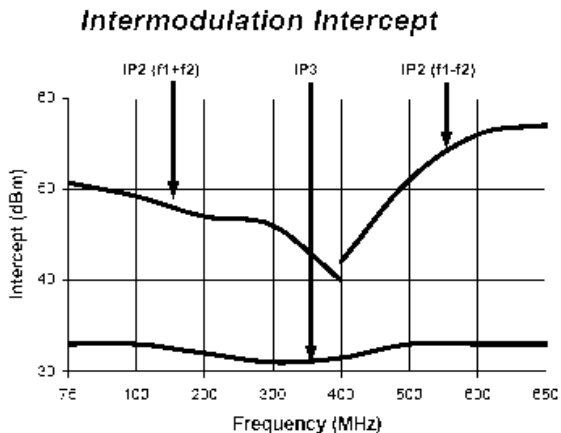
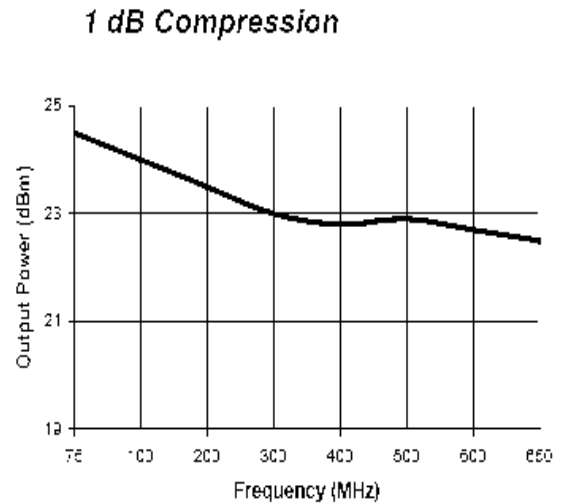
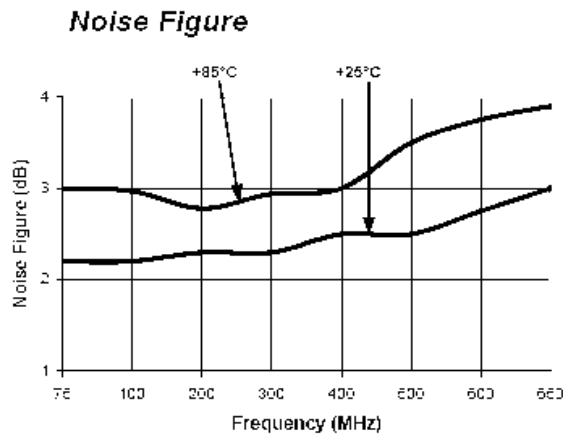
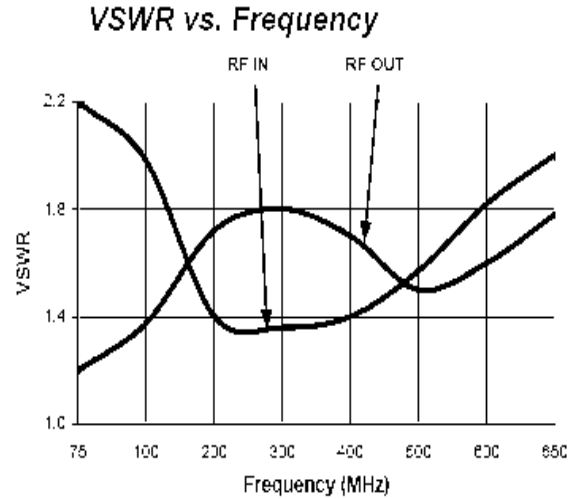
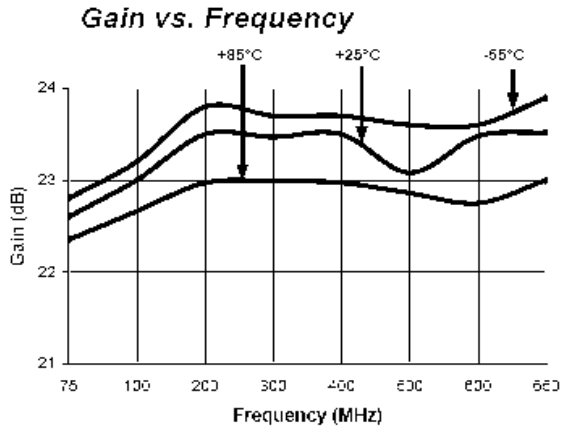
| Pin No. | Function | Pin No. | Function |
|---------|----------|---------|----------|
| 1 | RF OUT | 6 | RF IN |
| 2 | GND | 7 | GND |
| 3 | GND | 8 | GND |
| 4 | GND | 9 | GND |
| 5 | VDC | 10 | GND |

Absolute Maximum Ratings ³

| Parameter | Absolute Maximum |
|-----------------------|------------------|
| Max. Input Power | +10 dBm |
| Vbias | +15.75 V |
| Operating Temperature | -55°C to +85°C |
| Storage Temperature | -65°C to +125°C |

3. Operation of this device above any one of these parameters may cause permanent damage.

Typical Performance Curves



Ordering Information

| Part Number | Package |
|-------------|----------|
| AM-191 PIN | Flatpack |