

Low Noise Amplifier, 12 dB Gain, 300 - 1800 MHz

Rev. V3

Features

- 1.9 dB Typical Midband Noise Figure
- +7.5 dBm Typical Midband Output Power
- +19 dBm Typical Midband Third Order Intercept

Description

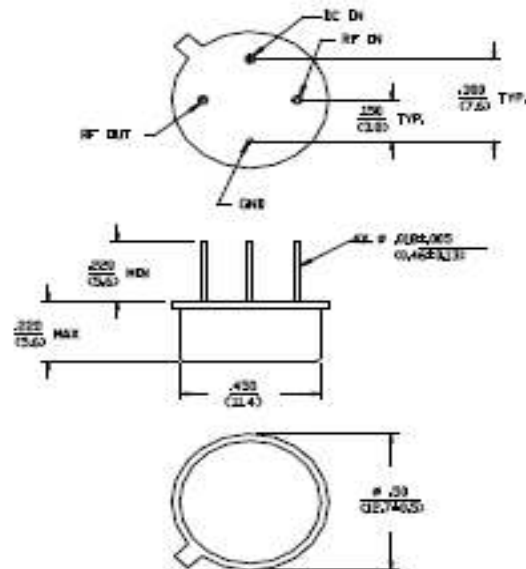
M/A-COM's AM-153 is a coupler feedback amplifier with low noise figure. The use of coupler feedback minimizes noise figure and current in a high intercept amplifier. This amplifier is packaged in a TO-8 package. This unique design features low noise figure over a wide bandwidth. AM-153 is ideally suited for use where a low noise, wideband, high reliability amplifier is required.

Absolute Maximum Ratings ¹

| 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 |

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

TO-8-1



Dimensions in 0 are in mm
 Unless Otherwise Noted: GOLD = 24200; GCR = 24200
 GCR = 40400; GK = 46200
 WEIGHT (APPROX) 0.10 OUNCES; 2.8 GRAMS

Electrical Specifications: ² T_A = -55°C to +85°C Case Temperature

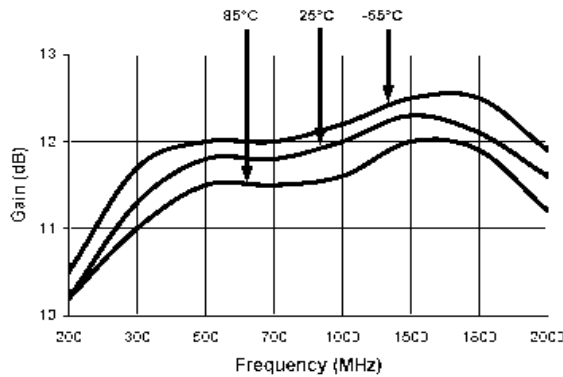
| Parameter | Test Conditions | Frequency | Units | Min. | Typ. | Max. |
|---------------------------------|------------------------------|----------------------------------------------------|-------------------------|-------------|-------------|-------------------------|
| Gain | @+25°C | 600 MHz | dB | 11.9 | 12.4 | 12.9 |
| Frequency Response | — | 300 - 1800 MHz | dB | — | — | ±1.2 |
| Gain Variation with Temperature | — | 300 - 1800 MHz | dB | — | — | +0.5, -0.7 |
| 1 dB Compression | Output Power | 300 - 1800 MHz | dBm | +6 | — | — |
| Noise Figure | — | 300 - 1800 MHz 1500 - 1800 MHz | dB dB | — — | — — | 3.0 3.5 |
| Reverse Transmission | — | 300 - 1800 MHz | dB | — | -14 | -12 |
| VSWR Input | — | 300 - 1800 MHz 1500 - 1800 MHz | Ratio Ratio | — — | — — | 2.5:1 3.3:1 |
| VSWR Output | — | 300 - 400 MHz 400 - 1500 MHz 1500 - 1800 MHz | Ratio Ratio Ratio | — — — | — — — | 3.5:1 3.0:1 2.5:1 |
| Output IP ₂ | Two-Tone inputs up to -5 dBm | 300 - 1800 MHz | dBm | +22 | — | — |
| Output IP ₃ | Two-Tone inputs up to -5 dBm | 300 - 1000 MHz 1000 - 1800 MHz | dBm dBm | +17 +15 | — — | — — |
| Vbias | — | — | VDC | +14.5 | +15.0 | +15.5 |
| Ibias | Vbias = +15.0 VDC | — | mA | — | 13 | 15 |
| Power Dissipation | @ +15 V Bias | — | mW | — | 200 | — |

2. All specifications apply when operated at +15 VDC, with 50 ohms source and load impedance.

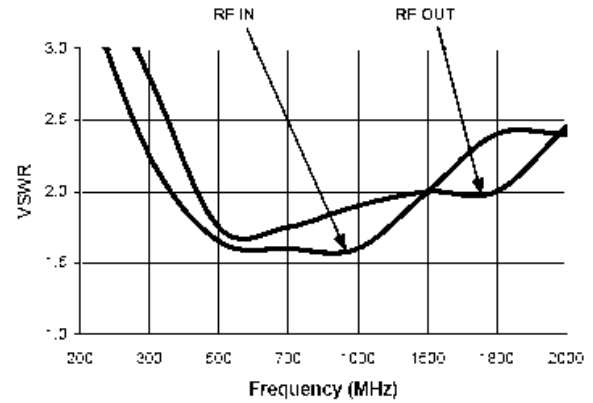
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Typical Performance Curves

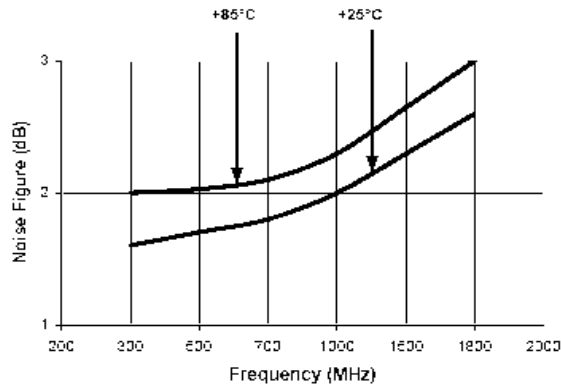
Gain vs. Frequency



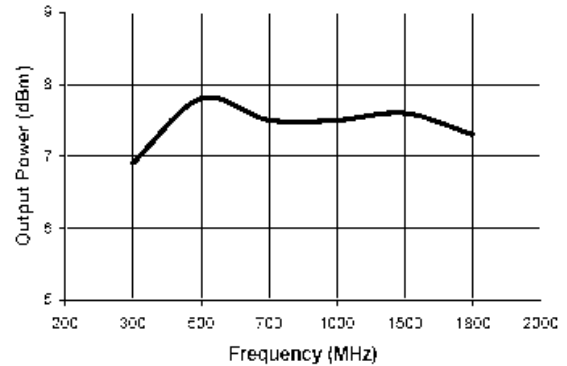
VSWR vs. Frequency



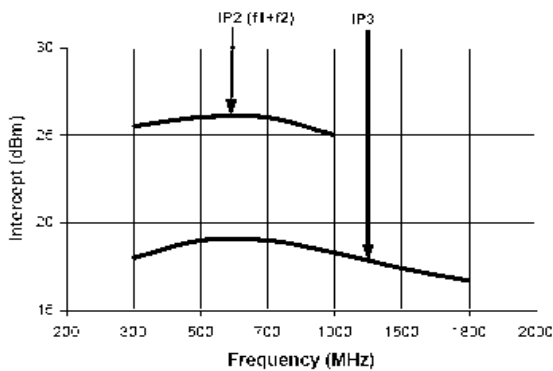
Noise Figure



1 dB Compression



Intermodulation Intercept



Ordering Information

| Part Number | Package |
|-------------------------|---------|
| AM-153 PIN ³ | TO-8-1 |

3. Mounting kit part number AU00071 required for PCB applications.

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3