

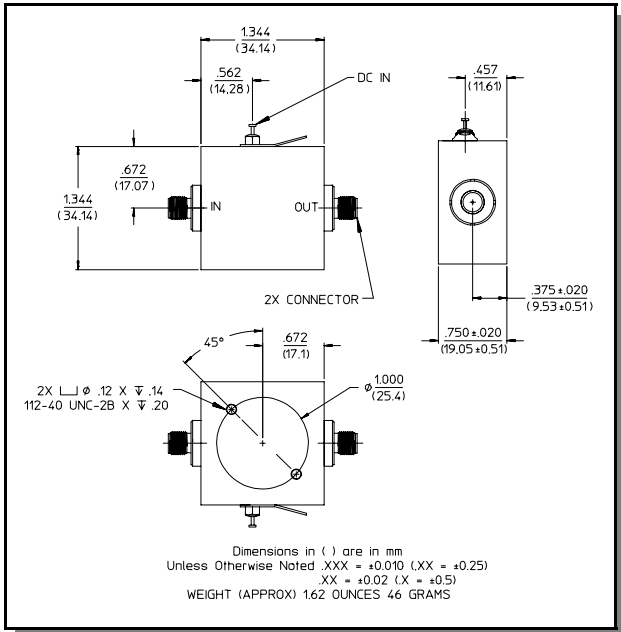
Features

- 1.9 dB Typical Midband Noise Figure
- +7 dBm Typical Midband Output Power
- +20 dBm Typical Third Order Intercept

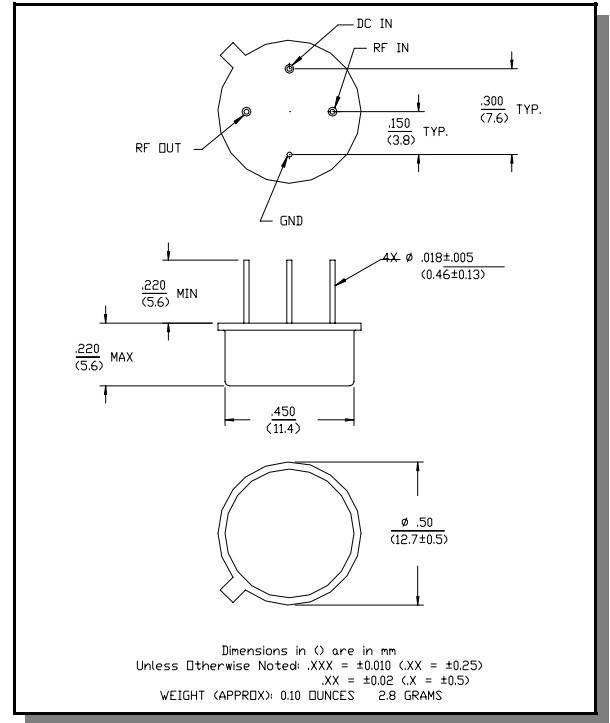
Description

M/A-COM's AM-143 is a coupler feedback amplifier with low noise figure and high intercept points for the low bias current. The use of coupler feedback minimizes noise figure and current in a high intercept amplifier. This amplifier is packaged in a TO-8 package. The ground plane on the PC board should be configured to remove heat from under the package. AM-143 are ideally suited for use where a low noise, high reliability amplifier is required.

C-32



TO-8-1



Absolute Maximum Ratings ¹

| Parameter | Absolute Maximum |
|-----------------------|------------------|
| Max. Input Power | +20 dBm |
| V _{bias} | +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.

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

| Parameter | Test Conditions | Frequency | Units | Min. | Typ. | Max. |
|---------------------------------|-------------------------------|----------------------------|----------|--------|--------|------------|
| Gain | @ +25°C | 50 MHz | dB | 15.3 | 15.8 | 16.3 |
| Frequency Response | — | 5 - 500 MHz | dB | — | — | ± 1.0 |
| Gain Variation with Temperature | — | 5 - 500 MHz | dB | — | — | ± 0.8 |
| 1 dB Compression | Output Power | 5 - 500 MHz | dBm | +4 | — | — |
| Noise Figure | — | 5 - 500 MHz 5 - 100 MHz | dB dB | — — | — — | 3.5 2.7 |
| Reverse Transmission | — | 5 - 500 MHz | dB | — | -21 | -16 |
| VSWR | — | 5 - 500 MHz | Ratio | — | — | 2.5:1 |
| Output IP ₂ | Two-tone inputs up to -10 dBm | 5 - 500 MHz | dBm | +24 | — | — |
| Output IP ₃ | Two-tone inputs up to -10 dBm | 5 - 500 MHz | dBm | +16 | — | — |
| Vbias | — | — | VDC | +14.5 | +15.0 | +15.5 |
| Ibias | Vbias = +15.0 VDC | — | mA | — | 13 | 15 |
| Power Dissipation | @ +15.0V Bias | — | mW | — | 200 | — |

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

S-Parameter Data

| Frequency (MHz) | S11 | | S21 | | S12 | | S22 | |
|-----------------|------|--------|------|--------|------|--------|------|--------|
| | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 5 | 0.20 | -60.7 | 5.90 | -161.0 | 0.09 | -160.5 | 0.32 | -24.9 |
| 10 | 0.12 | -63.8 | 6.07 | -171.8 | 0.09 | -172.6 | 0.27 | -24.9 |
| 20 | 0.09 | -65.3 | 6.16 | -179.8 | 0.10 | 178.9 | 0.26 | -17.4 |
| 50 | 0.10 | -82.7 | 6.08 | 167.5 | 0.10 | 166.3 | 0.25 | -28.0 |
| 100 | 0.14 | -101.0 | 6.06 | 153.3 | 0.10 | 150.5 | 0.26 | -49.3 |
| 200 | 0.21 | -130.6 | 6.00 | 126.7 | 0.10 | 119.8 | 0.26 | -82.3 |
| 300 | 0.23 | -149.2 | 6.01 | 100.9 | 0.10 | 93.6 | 0.24 | -104.5 |
| 400 | 0.20 | -155.5 | 6.09 | 70.7 | 0.10 | 67.4 | 0.22 | -100.5 |
| 500 | 0.22 | -142.9 | 6.11 | 36.8 | 0.10 | 43.3 | 0.20 | -79.8 |

Specifications subject to change without notice.

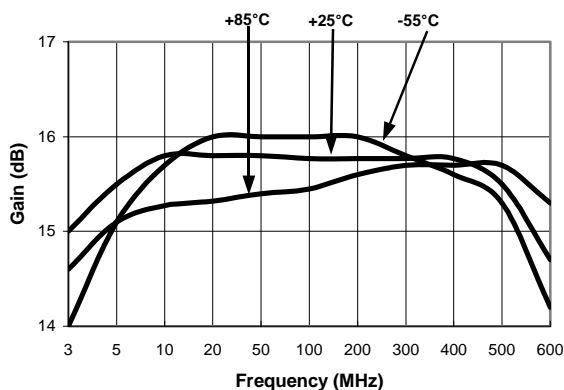
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- Asia/Pacific: Tel.+81-44-844-8296, Fax +81-44-844-8298
- Europe: Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

Visit www.macom.com for additional data sheets and product information.

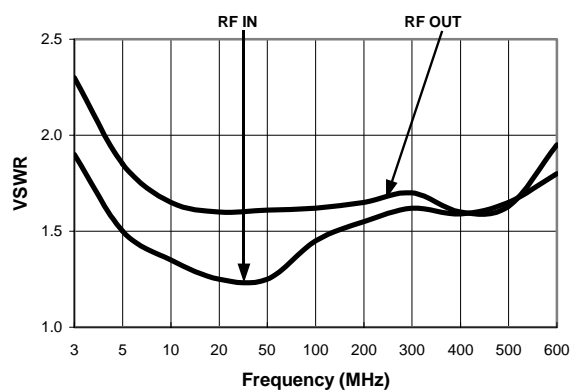


Typical Performance Curves

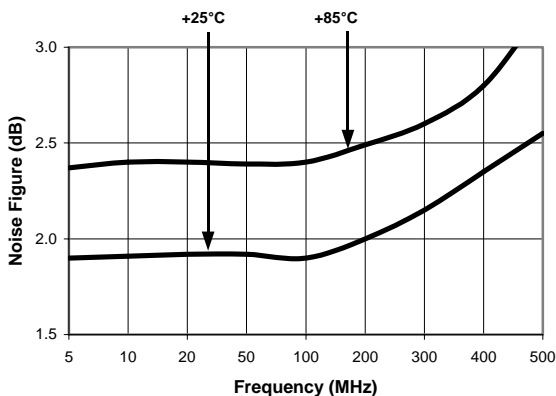
Gain vs. Frequency



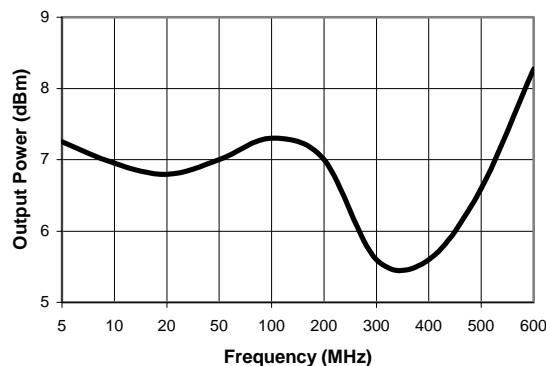
VSWR vs. Frequency



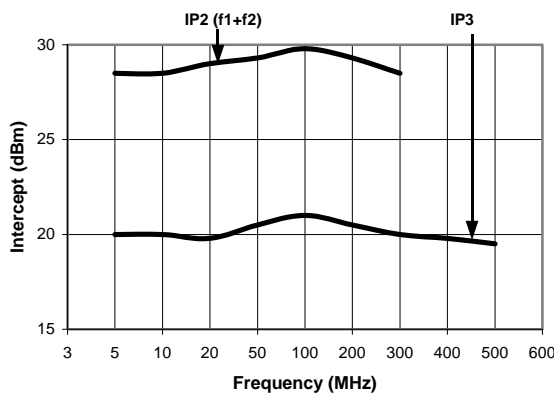
Noise Figure



1 dB Compression



Intermodulation Intercept



Ordering Information

| Part Number | Package |
|-------------------------|---------------|
| AM-143 PIN ³ | TO-8-1 |
| AMC-143 SMA | Connectorized |

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

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