

High Intercept Amplifier, 15 - 100 MHz

AM05-0005
V3

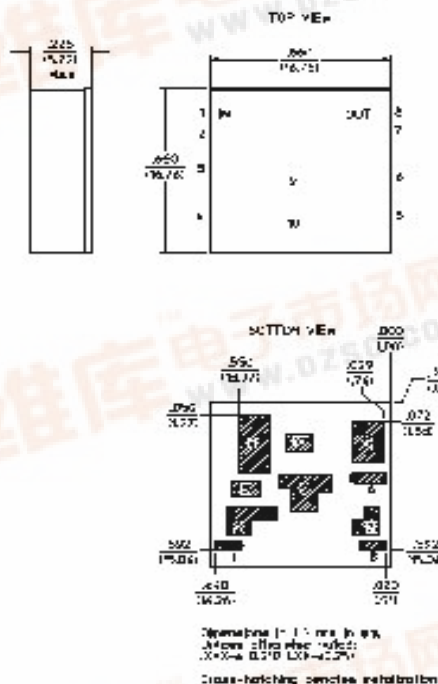
Features

- Gain: 14.5 dB Nominal
- IP3 of +40 dBm Typical
- Land Grid Array (LGA) Package
- Compression point of +25 dBm Typical
- 50 ohm impedance
- Test boards are available
- Tape and Reel Packaging Available

Description

M/A-COM's AM05-0005 is a coupler feedback amplifier with high intercept and compression points. This device is in a ceramic land grid array package. This package is designed for standard surface mount pick and place. Due to the ceramic package the thermal rise minimized. The ground plane on the PC board should be configured to remove heat from under the package. AM05-0005 is ideally suited for use where a high intercept commercial amplifier is required at a low cost.

LGA-1



Electrical Specifications: $T_A = 25^\circ\text{C}$

Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Gain	—	50 MHz	dB	14.0	14.5	15.0
Gain Flatness	—	15 - 100 MHz	dB	—	± 0.2	± 0.4
VSWR	—	15 - 100 MHz	Ratio	—	1.4:1	1.8:1
1 dB Compression	Output Power	15 - 100 MHz	dBm	23	27	—
Output IP_2	Two-Tone inputs up to +10 dBm	15 - 100 MHz	dBm	55	65	—
Output IP_3	Two-Tone inputs up to +10 dBm	15 - 100 MHz	dBm	37	46	—
Noise Figure	—	15 - 100 MHz	dB	—	2.7	5.0
Reverse Transmission	—	15 - 100 MHz	dB	—	-21	-19
+V	—	—	V	11.4	12.0	12.6
Ibias	1.1 W Typical	—	mA	—	88	120

High Intercept Amplifier, 15 - 100 MHz

**AM05-0005
V3**

S-Parameter Data

Frequency (MHz)	S11 MAG/ANG	S21 dB/MAG/ANG	S12 dB/MAG/ANG	S22 MAG/ANG
5	0.1220/-32	13.83/4.92/-173	-22.65/0.07/170	0.1541/40
20	0.0844/-60	14.38/5.24/169	-22.19/0.08/167	0.0734/-44
35	0.0677/-81	14.57/5.36/154	-21.89/0.08/154	0.0558/-67
50	0.0611/-95	14.60/5.37/141	-21.80/0.08/141	0.0542/-68
65	0.0584/-107	14.55/5.34/128	-21.88/0.08/128	0.0647/-67
80	0.0582/-119	14.52/5.32/115	-22.02/0.08/115	0.0799/-72
95	0.0597/-130	14.46/5.29/102	-22.25/0.08/101	0.0938/-82
110	0.0626/-143	14.46/5.29/89	-22.56/0.07/89	0.1014/-92
125	0.0665/-158	14.40/5.25/75	-22.93/0.07/76	0.0984/-102

Pin Configuration

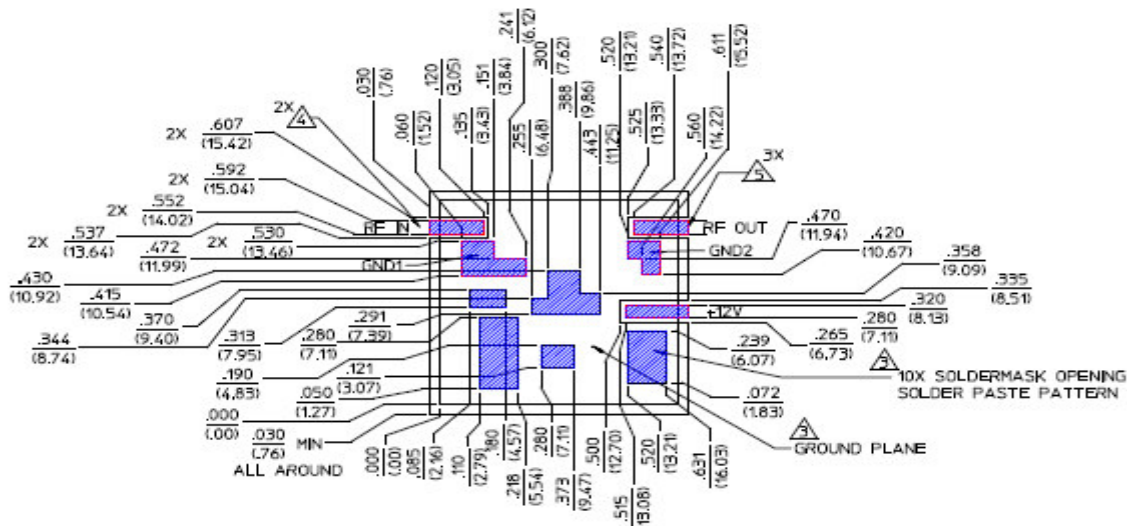
Pin No.	Function	Pin No.	Function
1	RF IN	6	V _{bias}
2	GND 1	7	GND 2
3	GND	8	RF OUT
4	GND	9	GND
5	VDC	10	GND

Absolute Maximum Ratings ¹

Parameter	Absolute Maximum
Max. Input Power	+15 dBm
V _{bias}	-0.5 to +14.0 V
Operating Temperature	-40°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.

Recommended Board Layout

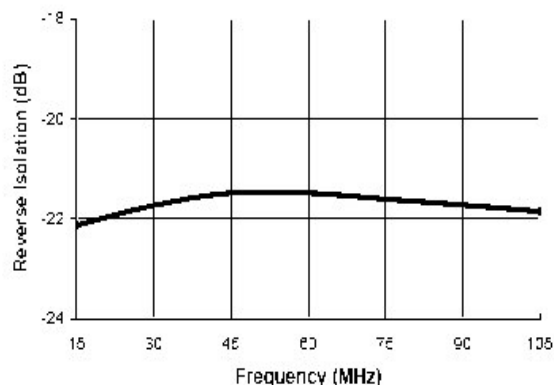


High Intercept Amplifier, 15 - 100 MHz

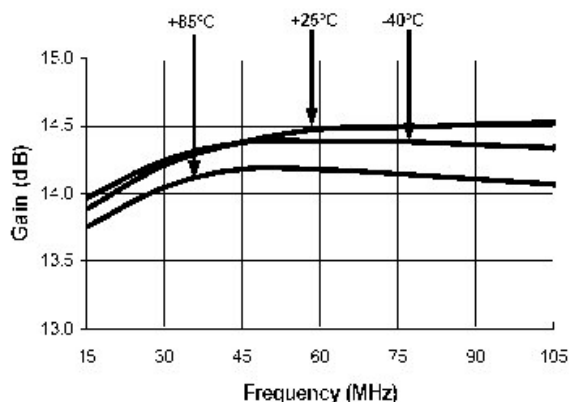
**AM05-0005
V3**

Typical Performance Curves

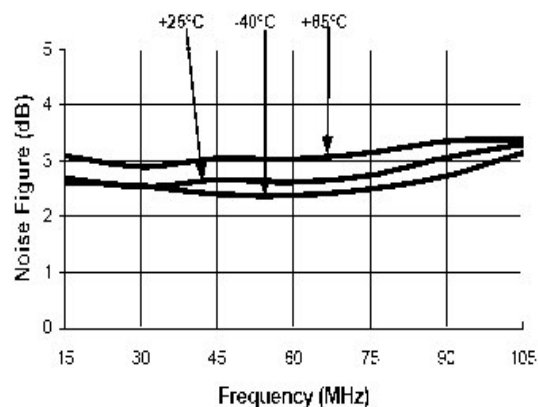
Reverse Isolation vs. Frequency



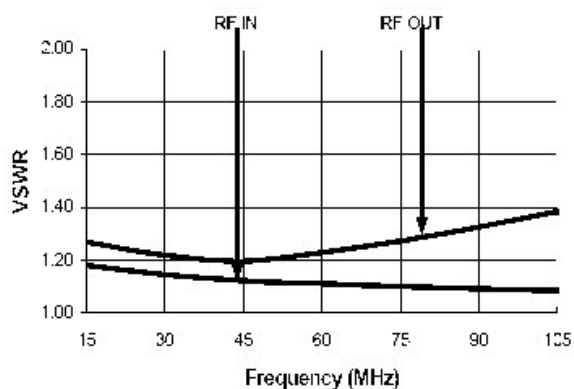
Gain vs. Frequency



Noise Figure vs. Frequency



VSWR vs. Frequency



Ordering Information

Part Number	Package
AM05-0005	Bulk Packaging
AM05-0005TR	Tape and Reel (1K Reel)
AM05-0005-TB	Device provided on Test Board