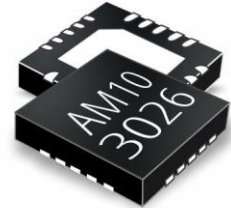


DESCRIPTION

AMCOM's AM103026MM-QN5-R is part of the GaAs HiFET MMIC power amplifier series that is biased at 14V. It has 22dB gain and 26dBm output power over the 0.8 to 3.6GHz band. This MMIC is in a QFN 5x5mm package with both RF and DC leads at the lower level of the package to facilitate low-cost SMT assembly. It is necessary to mount the MMIC ground directly on multiple vias to get good RF ground and to dissipate the heat. This MMIC is RoHS compliant.



FEATURES

- Wide bandwidth from 0.8 to 3.6GHz
- High output power, P1dB = 26dBm
- High gain, 22dB
- Fully matched; 50-ohm input/output impedance

APPLICATIONS

- PCS Base Station
- Instrumentation
- Gain block

TYPICAL PERFORMANCE*

($V_{dd} = +14V$, $V_{gg1} = -2.0V$, $V_{gg2} = -0.58V$, $I_{ddq1} = 60mA$, $I_{ddq2} = 140mA$, $T_a = 25^{\circ}C$)

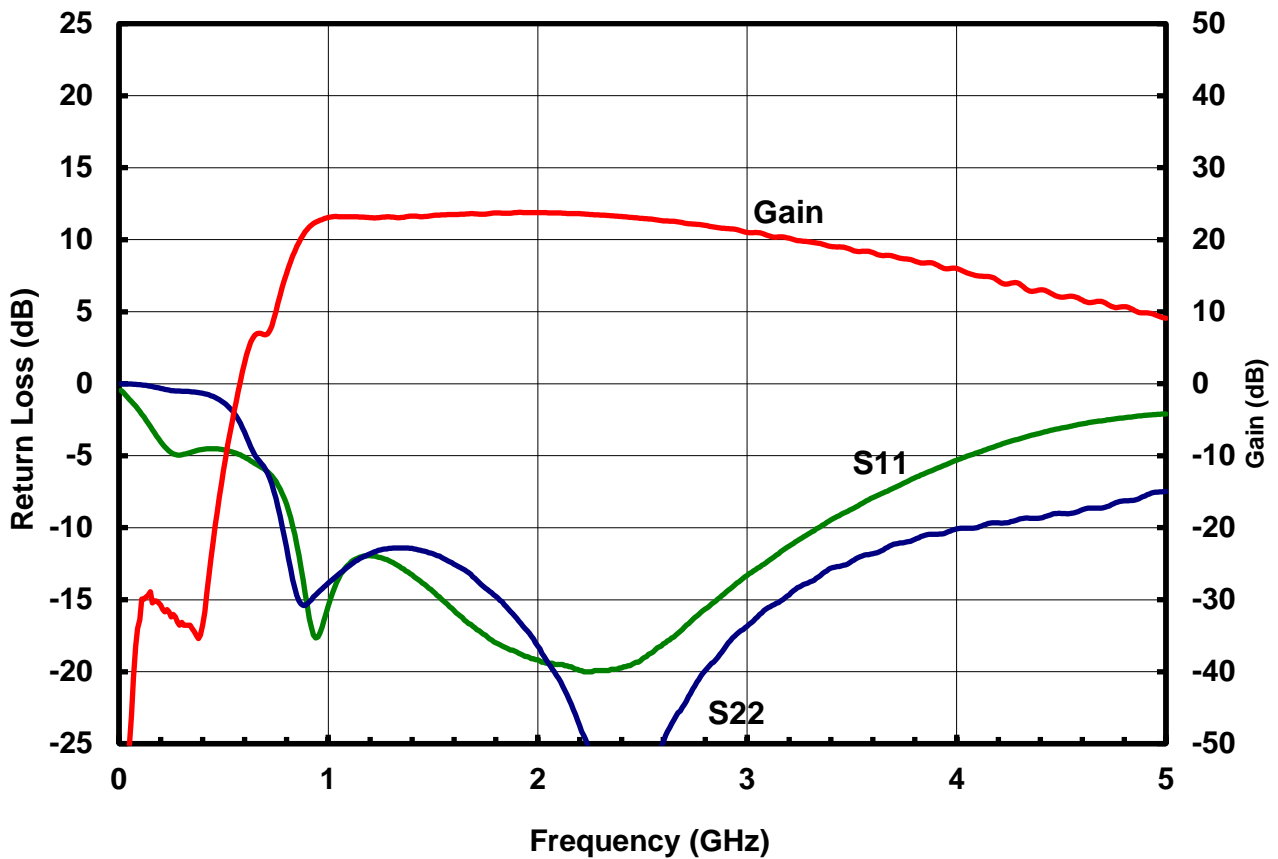
Parameters	Minimum	Typical	Maximum
Frequency		0.9 – 3.2GHz	0.8 – 3.6GHz
Small Signal Gain	19dB	22dB	23dB
Gain Ripple		± 2.0dB	± 3.0dB
P1dB	23dBm	25dBm	
Psat	24dBm	26dBm	
IP3		43dBm	
Input Return Loss	10dB	15dB	
Output Return Loss	10dB	15dB	
Thermal Resistance		27°C/W	

*Specifications subject to change without notice.

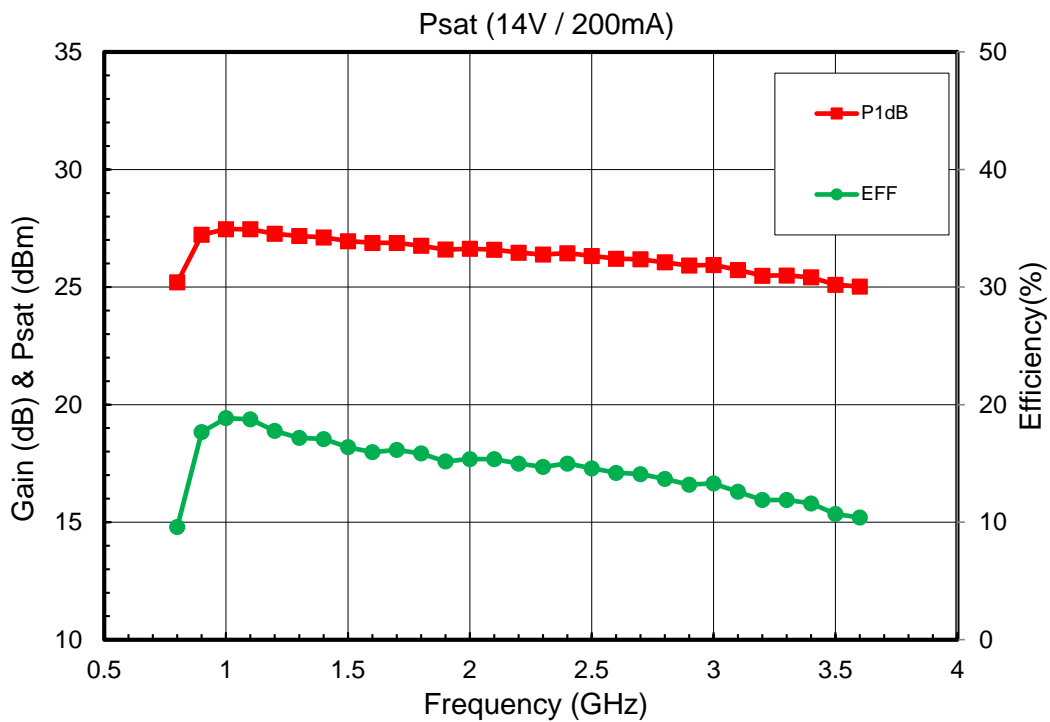
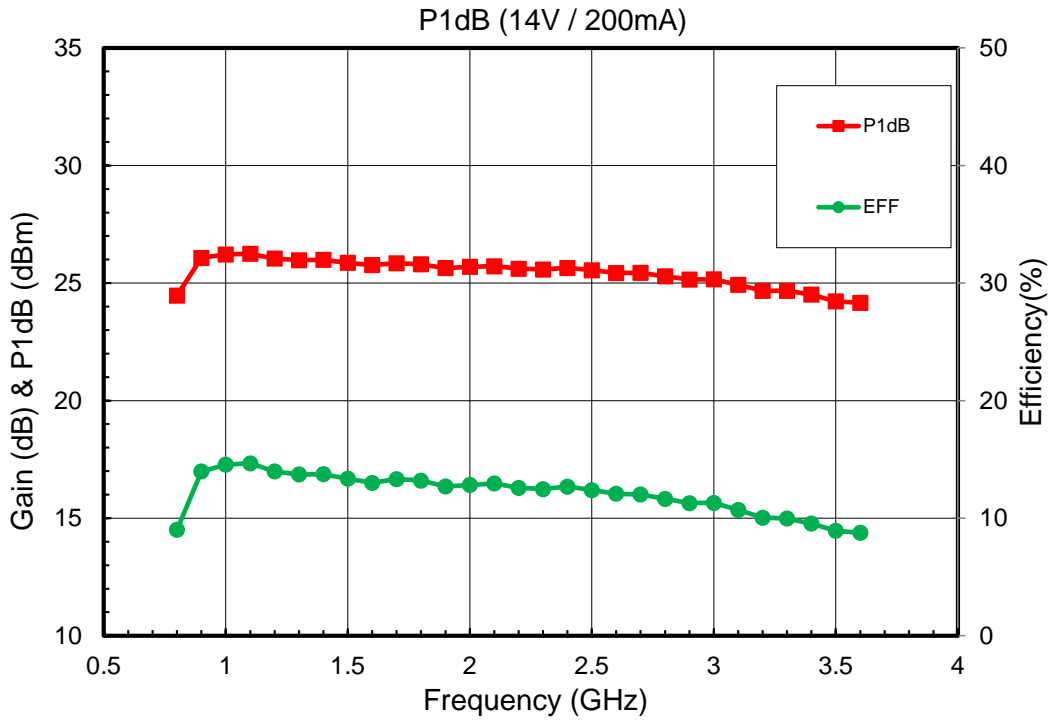
ABSOLUTE MAXIMUM RATING

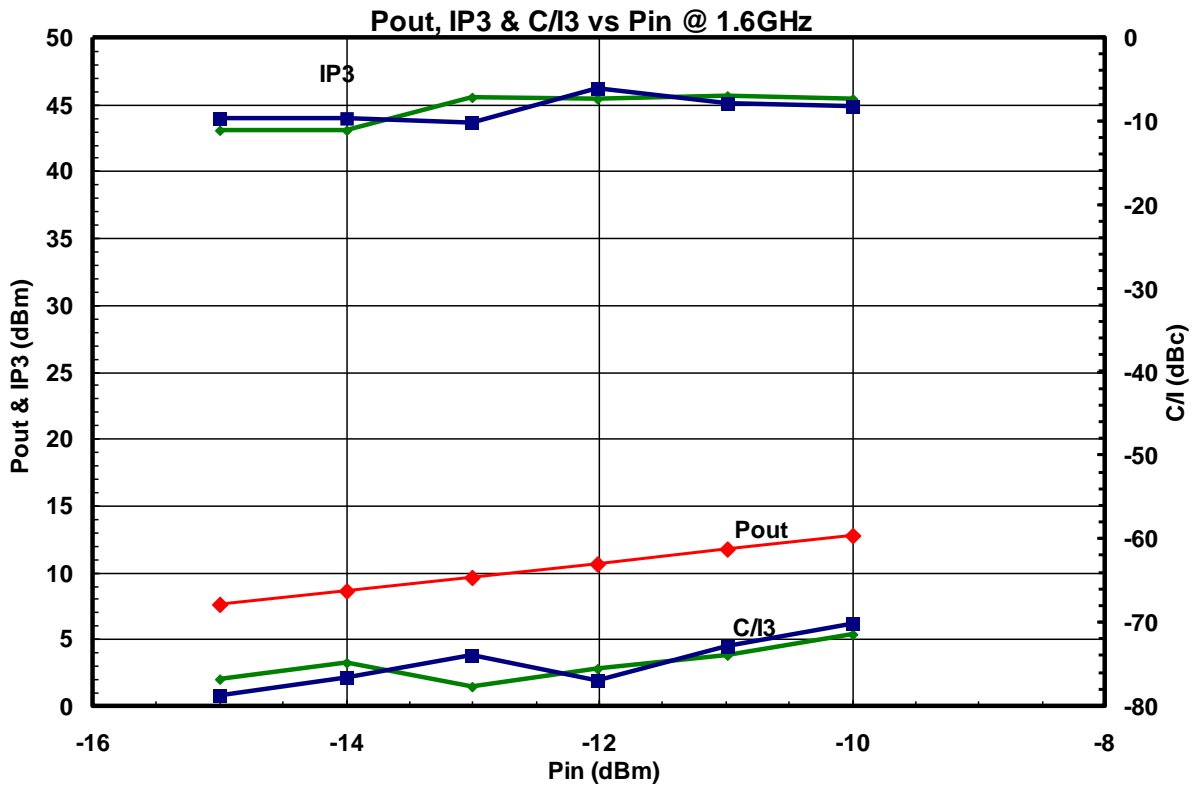
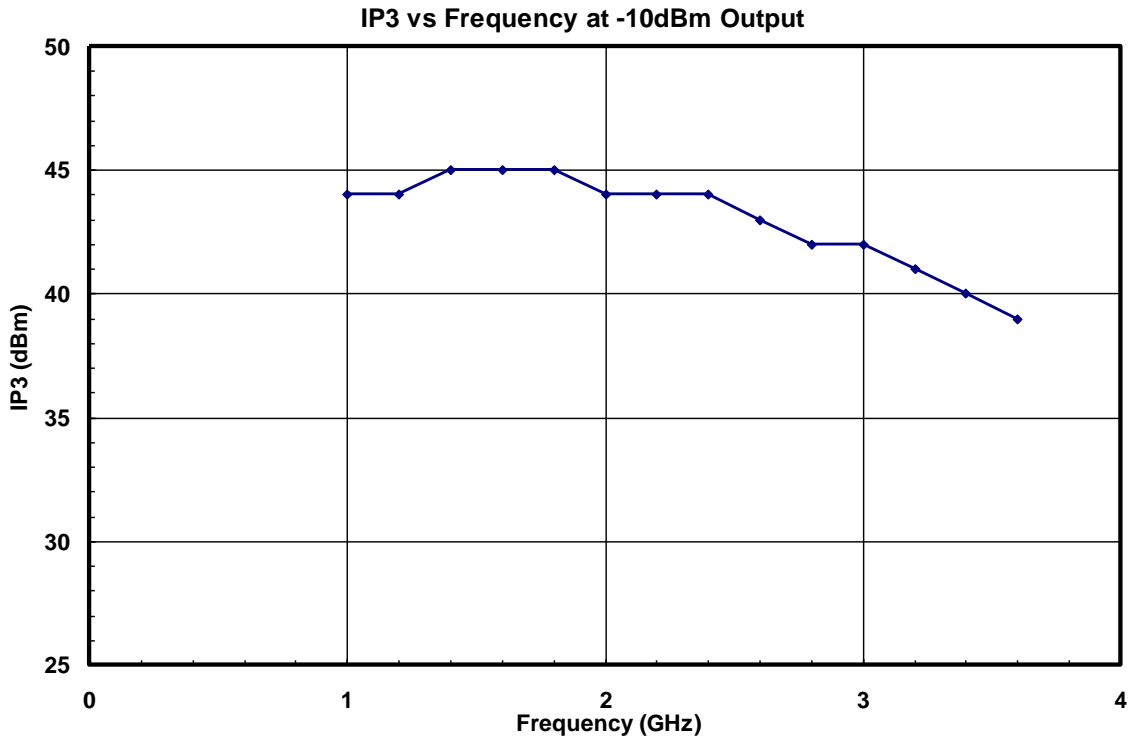
Parameters	Symbol	Rating
Drain source voltage	V _{dd}	17V
Gate source voltage	V _{gg}	-5V
Drain source current	I _{dd}	0.3A
Continuous dissipation at room temperature	P _t	5W
Channel temperature	T _{ch}	175°C
Storage temperature	T _{sto}	-55°C to +135°C

SMALL SIGNAL DATA

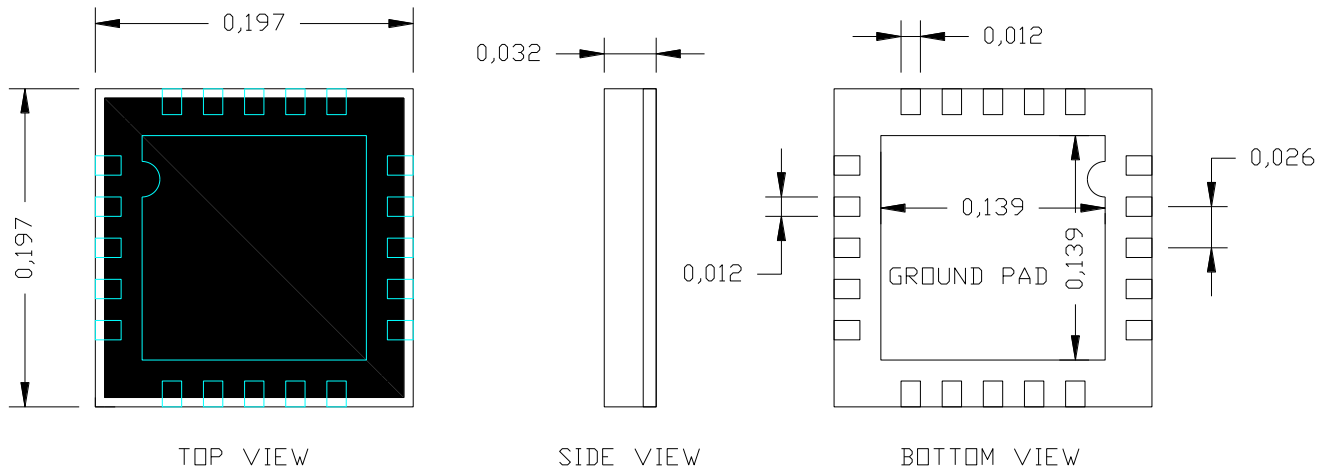


POWER DATA

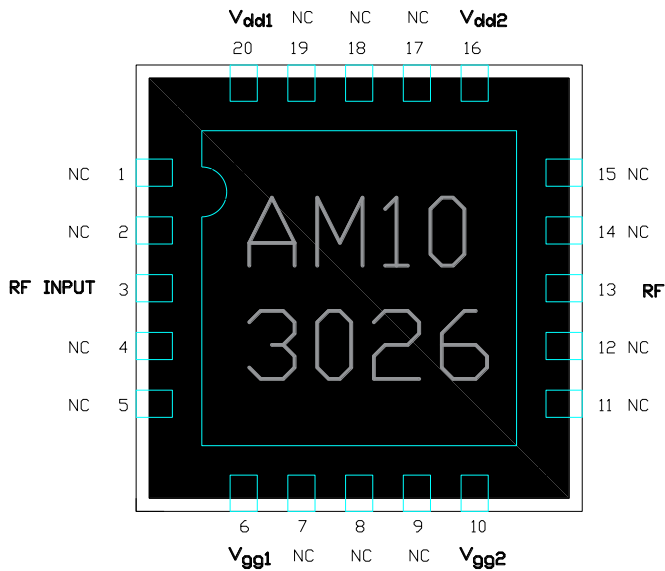




PACKAGE OUTLINE (QFN 5x5mm)



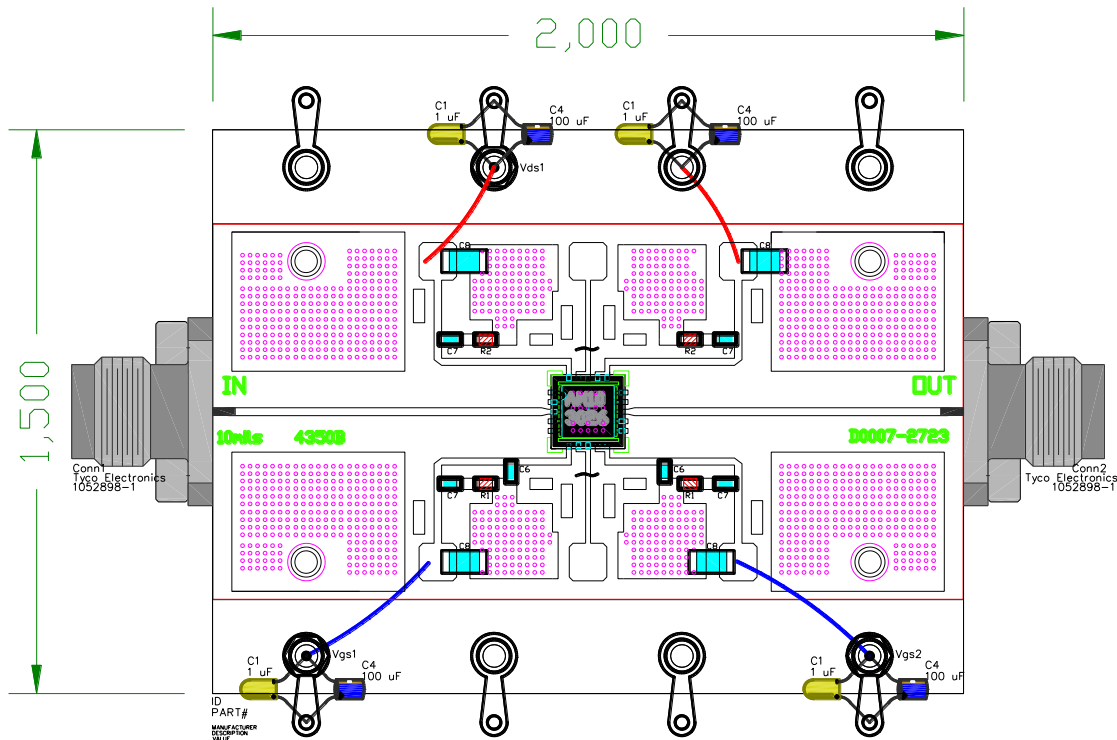
PIN LAYOUT



Pin No.	Function	Bias*
1 & 2	NC	
3	RF in	
4 & 5	NC	
6	Vgg1	-2.00V
7, 8 & 9	NC	
10	Vgg2	-0.58V
11 & 12	NC	
13	RF out	
14 & 15	NC	
16	Vdd2	+14V
17, 18 & 19	NC	
20	Vdd1	+14V

* V_{gg1} & V_{gg2} may vary from lot to lot

TEST CIRCUIT



- Notes:
- 1- 10mils Rogers 4350B Material epoxied
 - 2- Ckt is for matched MMICs
 - 3- C6=20pf, C7=1000pF, C8=10uF
R1=50 Ohms, R2=10 Ohms
 - 4- All Caps & Resistors are 0603 size except for C8: 1206 size
 - 5- Bias tee should be used at output.
 - 6- Unused bias lines should be cut to avoid ripples and resonance
 - 7- Test Block is D0007-2004
 - 8- Dimension in inch

*Dimensions in inch

Important Notes:

- 1- Recommended current biases are 60mA and 140mA for the first stage and second stage, respectively. At V_{dd1} & $V_{dd2} = +14V$, V_{gg1} & V_{gg2} values are -2.0V and -0.58V respectively to obtain these desired currents. V_{gg1} & V_{gg2} could be adjusted to vary the currents going thru the first stage (V_{dd1} pin) and the second stage (V_{dd2} pin) respectively. Gate biases are for reference only.
- 2- Do not apply V_{dd1} & V_{dd2} without proper negative voltages on V_{gg1} & V_{gg2} .