

DESCRIPTION

AMCOM's AM324036WM-BM-R and AM324036WM-FM-R are part of the GaAs MMIC power amplifier series. These MMICs have 29dB gain, 36dBm output power over the 3.2 to 4.0 GHz band. Both MMICs are in a ceramic package with both RF and DC leads at the bottom level of the package to facilitate low-cost SMT assembly to the PC board. Because of high DC power dissipation, we strongly recommend to mount these devices directly on a metal heat sink. The FM package is the BM package mounted on a copper flange carrier. There are two screw holes on the flange to facilitate screwing on to a metal heat sink. Both MMICs are RoHS compliant.

FEATURES

- Wide bandwidth from 3.2 to 4.0 GHz
- High output power, P1dB = 36 dBm
- High gain, 29dB
- Fully matched; 50-ohm input/output impedance

APPLICATIONS

- Wireless Internet Access
- Wireless Local Loop
- Two way radio

PERFORMANCE* (Vds = 8V, Idq = 1200mA, TA = 25°C)

Parameters	Minimum	Typical	Maximum
Frequency	3.2 – 4.0	3.0 – 4.2 GHz	
Gain (Small signal)	26.5 dB	29.0 dB	
Gain Ripple		± 1.0 dB	± 2.0 dB
P1dB	35.0 dBm	36.0 dBm	
Psat		36.5 dBm	
IP3		45.0 dBm	
Efficiency	20 %	25 %	
Input Return Loss	12 dB	20 dB	
Output Return Loss	8 dB	12 dB	
Thermal Resistance		6.1 °C/W	

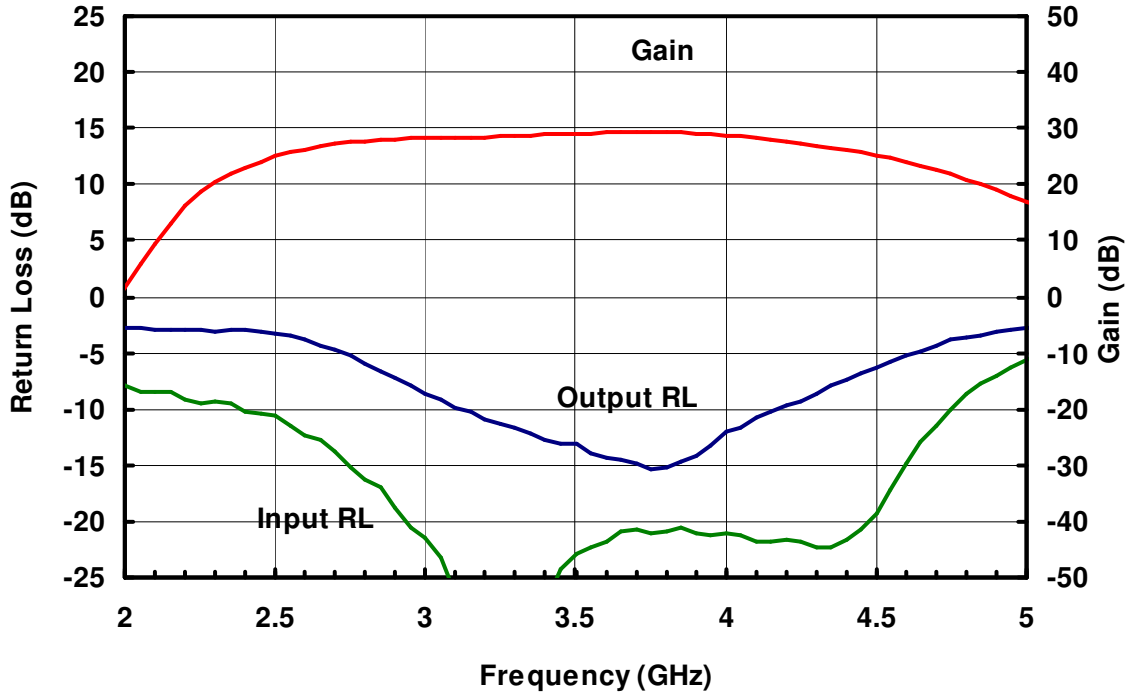
*Specifications subject to change without notice.

ABSOLUTE MAXIMUM RATING

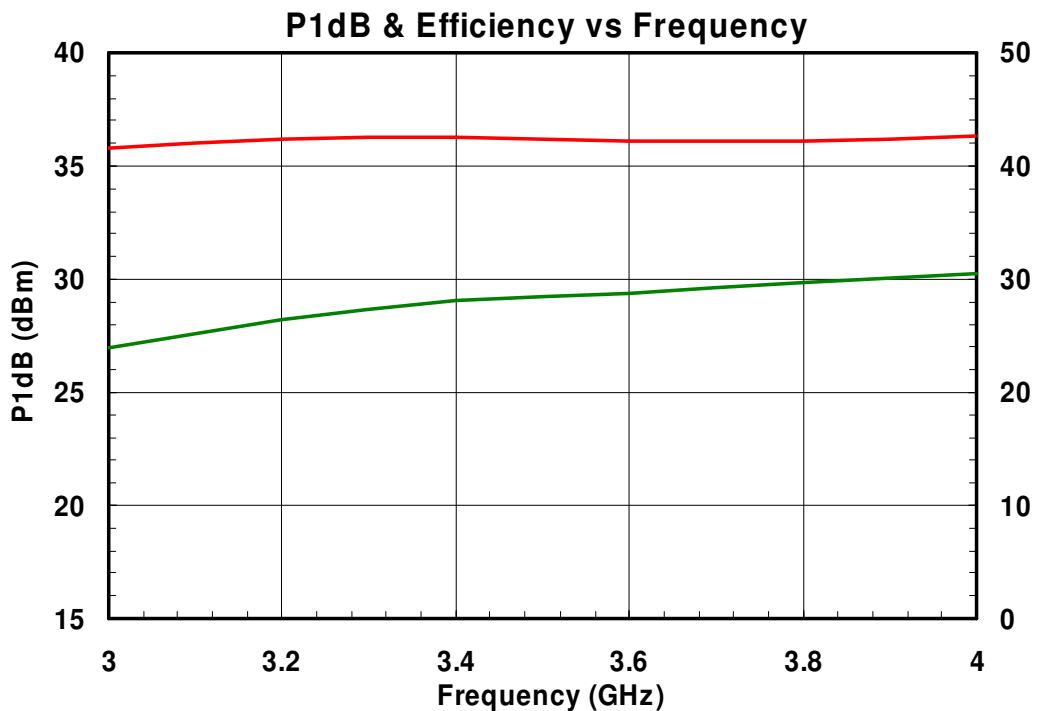
Parameter	Symbol	Rating
Drain source voltage	Vds	10 V
Gate source voltage	Vgs	-5 V
Drain source current	Ids	2.4 A
Continuous dissipation at room temperature	Pt	24 W
Channel temperature	Tch	175 °C
Storage temperature	Tsto	-55°C to +135°C

SMALL SIGNAL DATA

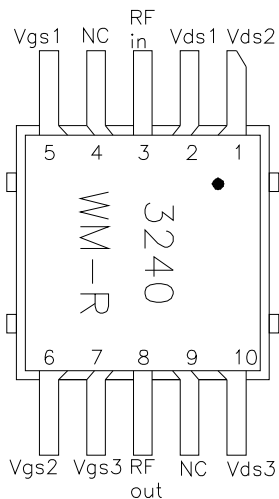
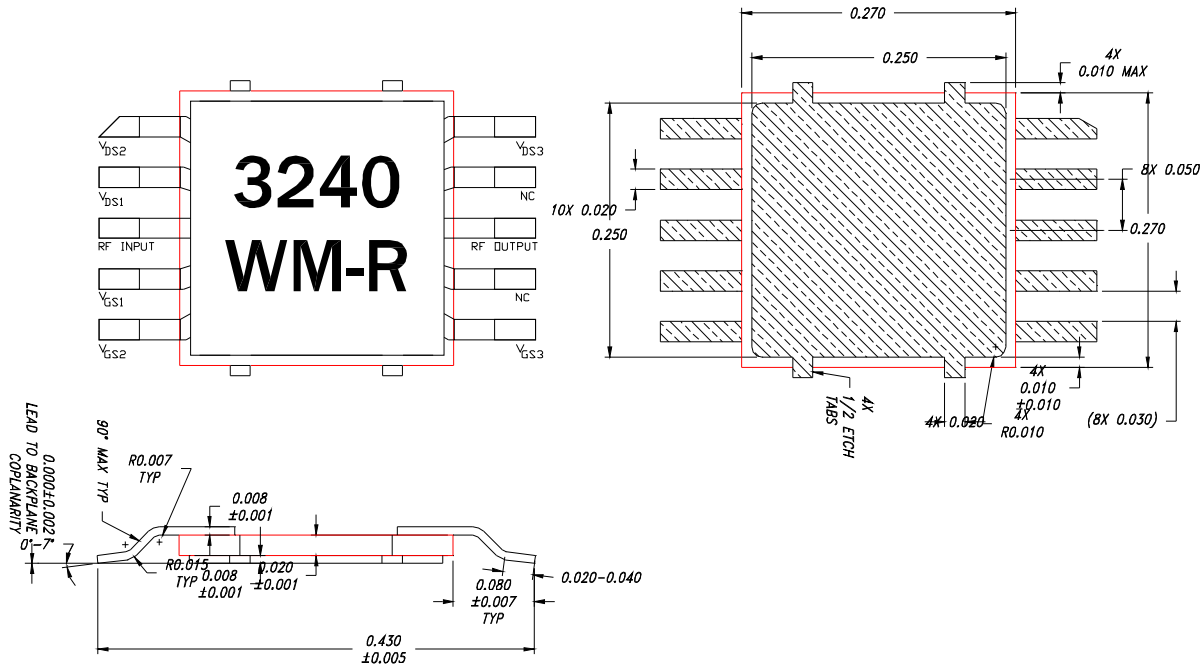
AM324036WM-BM (8V, 1.2A)



POWER DATA



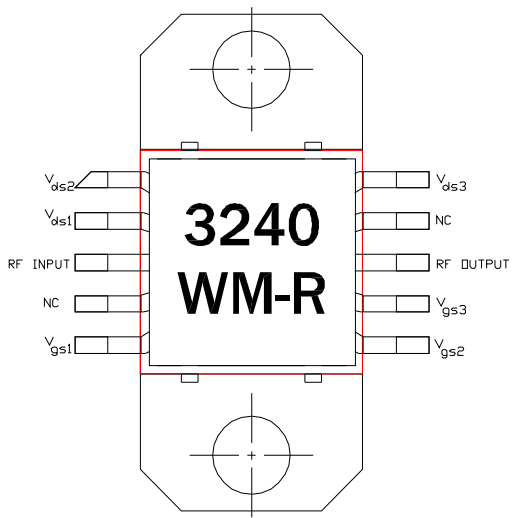
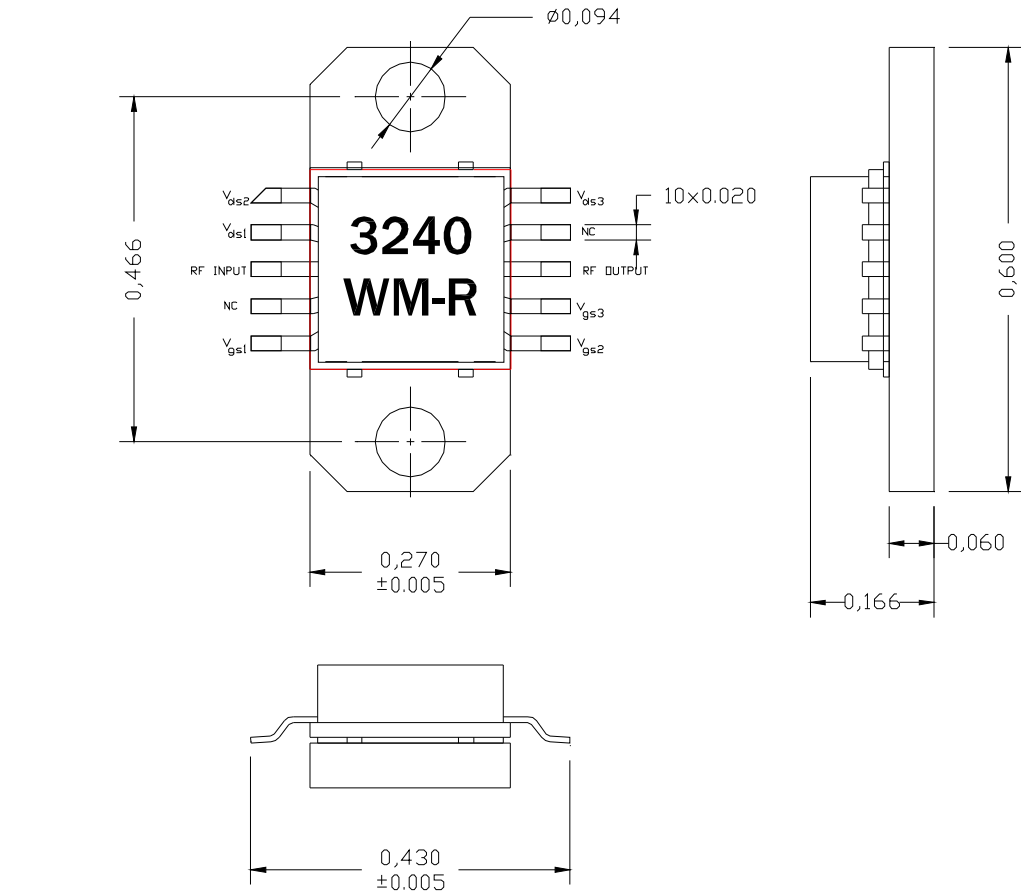
PACKAGE OUTLINE (BM)



Pin No.	Function	Bias*
1	Vds2	+8V
2	Vds1	+8V
3	RF in	
4	NC	
5	Vgs1	-0.66V
6	Vgs2	-0.66V
7	Vgs3	-0.66V
8	RF out	
9	NC	
10	Vds3	+8V

* V_{gs1}, V_{gs2}, & V_{gs3} gate biases are for reference only and may vary from lot to lot

PACKAGE OUTLINE (FM)

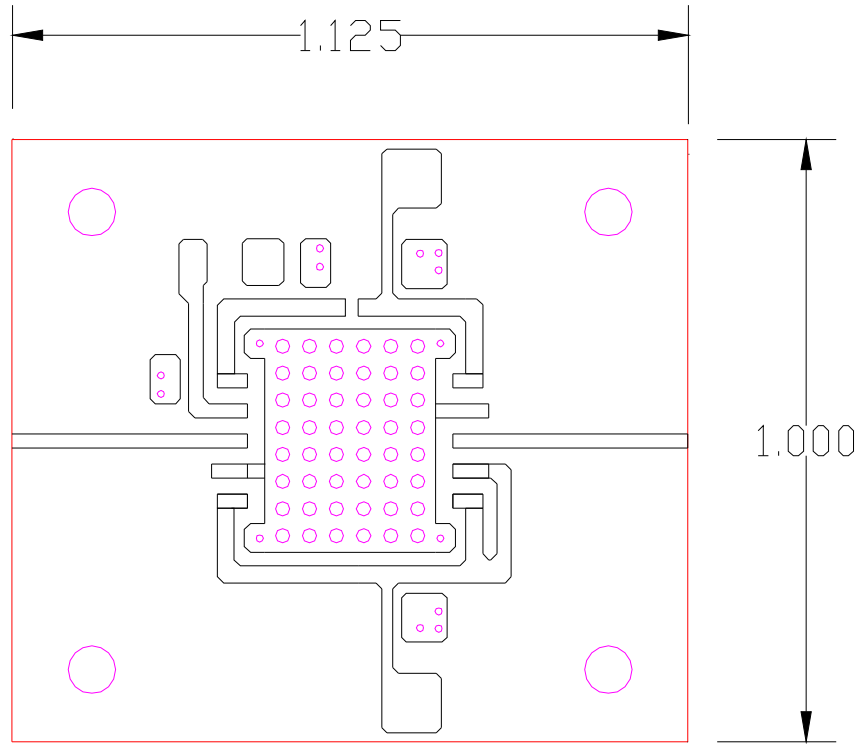


Pin No.	Function	Bias*
1	Vds2	+8V
2	Vds1	+8V
3	RF in	
4	NC	
5	Vgs1	-0.66V
6	Vgs2	-0.66V
7	Vgs3	-0.66V
8	RF out	
9	NC	
10	Vds3	+8V

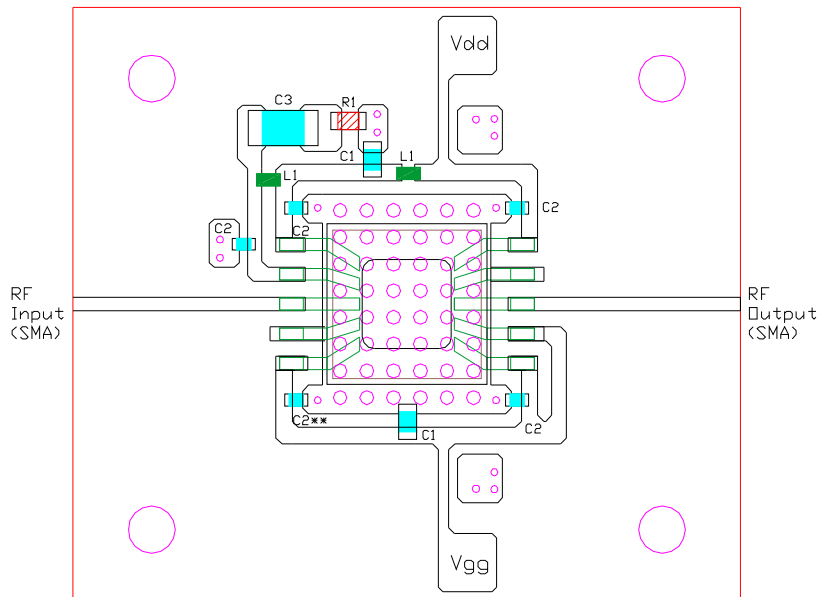
Pin Layout

* V_{gs1} , V_{gs2} , & V_{gs3} gate biases are for reference only and may vary from lot to lot

TEST CIRCUIT OUTLINE (BM Package)



- Notes:
 1- 10mils Rogers 4350 Material
 2- Ckt is for matched MMICs



- Notes:
 1- 10mils Rogers 4350 Material epoxied to block
 2- Ckt is for matched MMICs
 3- C1=0.56uF (0603), C2=1000pF (0402),
 C3=10uF (1206), R1=3 ohms (0603),
 L1=1nH (0402)
 4- ** C2 could be removed in this location

Important Notes:

- 1- The MMIC should have a good heat sink to avoid overheating. If SMT is used use PC board thickness < 10mils and ensure vias are filled with solder or metal to lower PCB heat resistance. MMIC could be attached on direct ground for lowest junction temperature.
- 2- Recommended current biases are 80mA, 250mA & 800mA for the first, second and third stages respectively.
- 3- Do not apply V_{ds1} , V_{ds2} & V_{ds3} without proper negative voltages on V_{gs1} , V_{gs2} & V_{gs3} .
- 4- The currents flowing out of the V_{gs1} , V_{gs2} & V_{gs3} pins are less than 0.1mA, 0.5mA & 8mA at P_{1dB} .