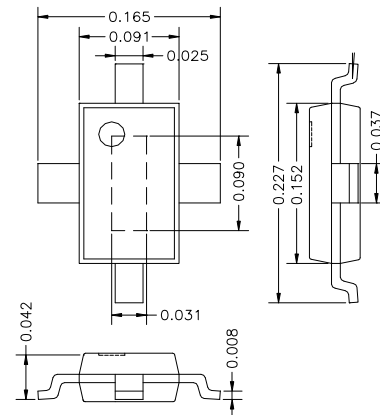


## DESCRIPTION

AMCOM's AM024MX-QG-R is a part of the QG series of GaAs MESFETs. This part has a total gate width of 2.4mm. The AM024MX-QG-R is designed for high power microwave applications, operating up to 6GHz. The QG series is in a plastic package with all leads bent in a surface mounting style on PC Board. The bottom of the package serves simultaneously as DC ground, RF ground, and thermal path. For frequencies above 5GHz, we recommend to mount the device directly on a metal heat sink, which is also RF ground, to avoid the inductance of via holes on PCB. This FET is RoHS Compliant.



(All dimensions in inch)

## FEATURES

- High Frequency Operation up to 6GHz
- High Gain and High Power,  $P_{1dB}=28\text{dBm}$  @3.5GHz
- Plastic Package for Low Cost
- 3 Heat Sink Paths for Effective Heat Removal

## APPLICATIONS

- Wireless Local Loop Network
- PCS Base Stations
- WLAN, Repeaters & HYPERLAN
- C-Band VSAT

## RF PERFORMANCE @ 3.5GHz, ( $V_{ds} = 5\text{V}$ , $I_{ds} = 0.5 I_{dss}$ )

Parameters	MIN	TYP
$P_{1dB}$ * (dBm)	27	28
Eff @ $P_{1dB}$	38%	42%
Small Signal Gain (dB)	12	13
IP3 (dBm)	37	39

\* Power typically remains the same as frequency changes.

## ABSOLUTE MAXIMUM RATING

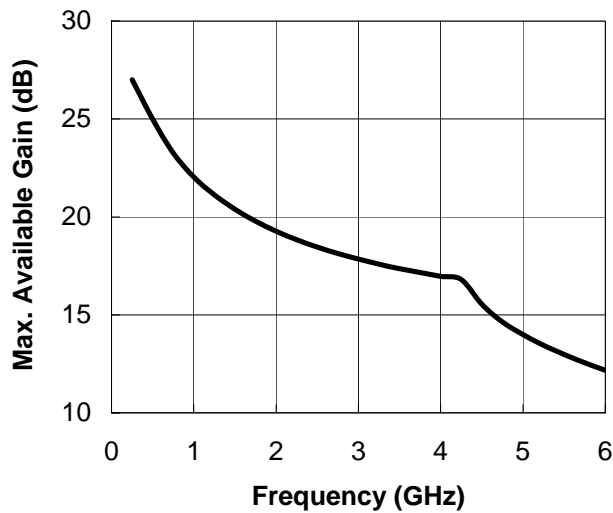
Parameters	Sym	Rating
Drain-Source Voltage (V)	$V_{ds}$	8
Gate-Source Voltage (V)	$V_{gs}$	-5
Drain Current (mA)	$I_{ds}$	720
Continuous Dissipation At Room Temp. (W)	$P_t$	4.1
Operating Temp. ( $^{\circ}\text{C}$ )	$T_A$	-55 to +85
Max. Channel Temp. ( $^{\circ}\text{C}$ )	$T_{ch}$	+175

## DC PARAMETERS

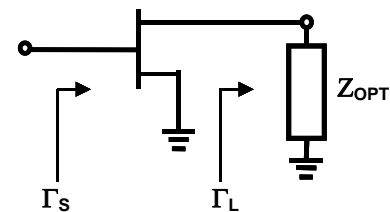
Parameters	Conditions	MIN	TYP	MAX
Saturation Current $I_{dss}$ (mA)	$V_{ds} = 3\text{V}$ $V_{gs} = 0\text{V}$	400	560	720
Pinch-off Voltage $V_p$ (V)	$V_{ds} = 3\text{V}$ $I_{ds} = 2.5\% I_{dss}$	-2.6	-2	-1.0
Drain to Gate Breakdown Voltage $BV_{gd}$ (V)	$I_{dg} = 0.1\text{mA/mm}$	11	15	
Drain to Source Voltage $V_{ds}$ (V)	Mounted on PCB		5	
Drain to Source Voltage $V_{ds}$ (V)	Mounted on Heat Sink		7	
Thermal Resistance ( $^{\circ}\text{C}/\text{W}$ )		35		

**S-Parameters for AM024MX-QG-R @ 5V / 0.5 I<sub>dss</sub> (s2p file downloadable from the web)**

Freq (MHz)	MAG (S11)	ANG(S11)	MAG (S21)	ANG(S21)	MAG (S12)	ANG(S12)	MAG (S22)	ANG(S22)
1000	0.87	-139.836	7.087	96.043	0.043	21.112	0.436	-171.039
2000	0.865	-173.789	3.864	67.504	0.046	7.223	0.459	167.344
3000	0.859	162.594	2.647	45.5	0.046	-0.607	0.481	156.219
4000	0.864	144.664	2.041	25.875	0.043	-7.092	0.496	144.547
5000	0.867	130.539	1.662	6.471	0.046	-4.168	0.492	130.016
6000	0.869	112.348	1.48	-13.615	0.051	-16.327	0.511	112.414

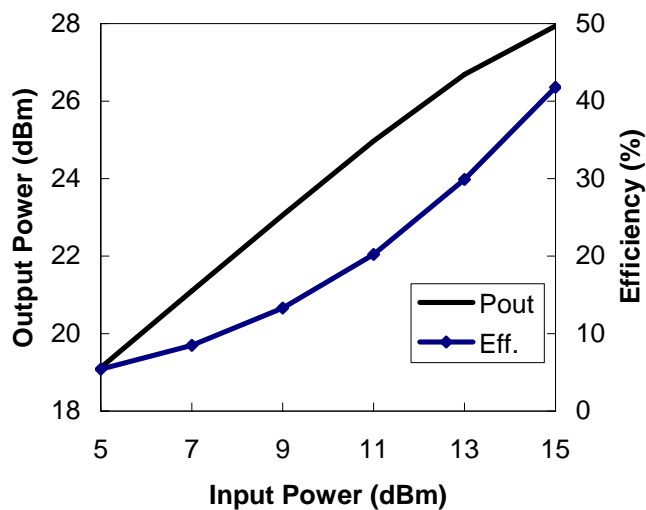


V<sub>ds</sub>=5V, I<sub>ds</sub>=0.5 I<sub>dss</sub> @ 3.5 GHz

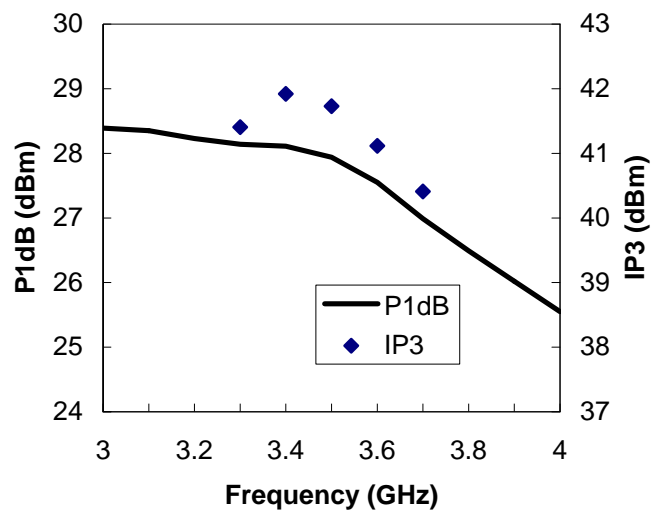


OPTIMUM LOADS

Freq GHz	Γ <sub>s</sub> MAG	Γ <sub>s</sub> ANG	Γ <sub>L</sub> MAG	Γ <sub>L</sub> ANG
1	0.944	-117.0	0.538	-171.8
2	0.923	-160.7	0.538	-163.4
3	0.915	174.9	0.537	-154.5
4	0.911	156.4	0.535	-144.9
5	0.906	139.8	0.532	-134.4
6	0.902	123.9	0.528	-122.7



V<sub>ds</sub>=5V, I<sub>ds</sub>=0.5 I<sub>dss</sub>, Test CKT @ 3.5 GHz



Specifications subject to change without notice.