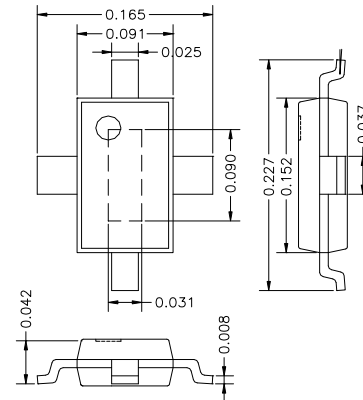


DESCRIPTION

AMCOM's AM012MX-QG-R is a part of the QG series of GaAs MESFETs. This part has a total gate width of 1.2mm. The AM012MX-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, $P_{1dB}=25\text{dBm}$ @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, ($V_{ds} = 5V$, $I_{ds} = 0.5 I_{dss}$)

Parameters	MIN	TYP
P_{1dB} * (dBm)	24	25
Eff @ P_{1dB}	38%	42%
Small Signal Gain (dB)	12.5	13.5
IP3 (dBm)	35	37

* Power typically remains the same as frequency changes.

ABSOLUTE MAXIMUM RATING

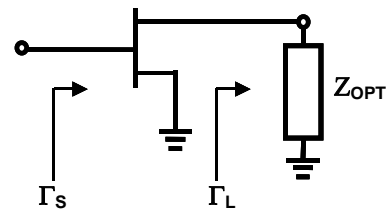
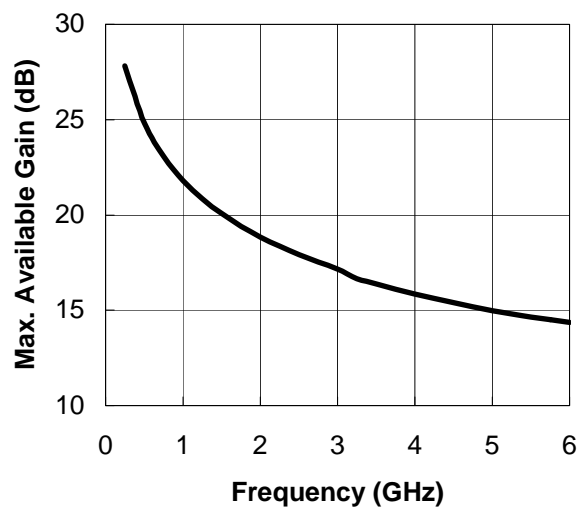
Parameters	Sym	Rating
Drain-Source Voltage (V)	V_{ds}	8
Gate-Source Voltage (V)	V_{gs}	-5
Drain Current (mA)	I_{ds}	360
Continuous Dissipation At Room Temp. (W)	P_t	2.2
Operating Temp. ($^{\circ}\text{C}$)	T_A	-55 to +85
Max. Channel Temp. ($^{\circ}\text{C}$)	T_{ch}	+175

DC PARAMETERS

Parameters	Conditions	MIN	TYP	MAX
Saturation Current I_{dss} (mA)	$V_{ds} = 3V$ $V_{gs} = 0V$	200	280	360
Pinch-off Voltage V_p (V)	$V_{ds} = 3V$ $I_{ds} = 2.5\% I_{dss}$	-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 ($^{\circ}\text{C}/\text{W}$)		67		

S-Parameters for AM012MX-QG-R @ 5V / 0.5 I_{dss} (s2p file downloadable from the web)

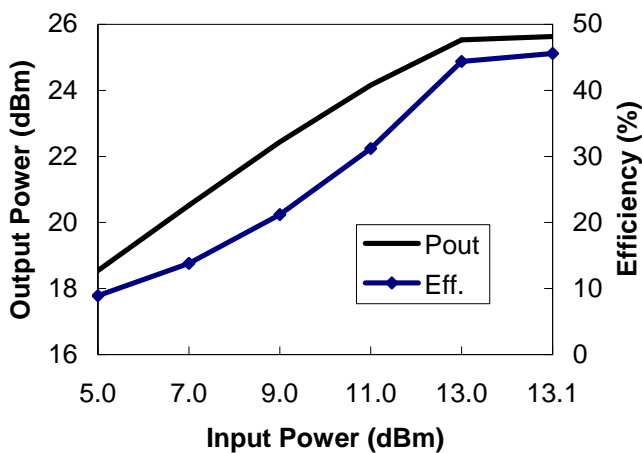
Freq (MHz)	MAG (S11)	ANG(S11)	MAG (S21)	ANG(S21)	MAG (S12)	ANG(S12)	MAG (S22)	ANG(S22)
1000	0.905	-82.434	7.923	126.07	0.052	43.791	0.248	-94.445
2000	0.857	-128.859	5.398	93.902	0.069	19.007	0.254	-139.461
3000	0.824	-162.375	3.953	69.742	0.073	1.723	0.285	-166.5
4000	0.817	172.875	3.063	49.861	0.07	-11.895	0.323	174.625
5000	0.808	155.891	2.457	32.648	0.062	-17.344	0.328	159.914
6000	0.823	140.766	2.103	16.119	0.063	-24.557	0.347	146.07



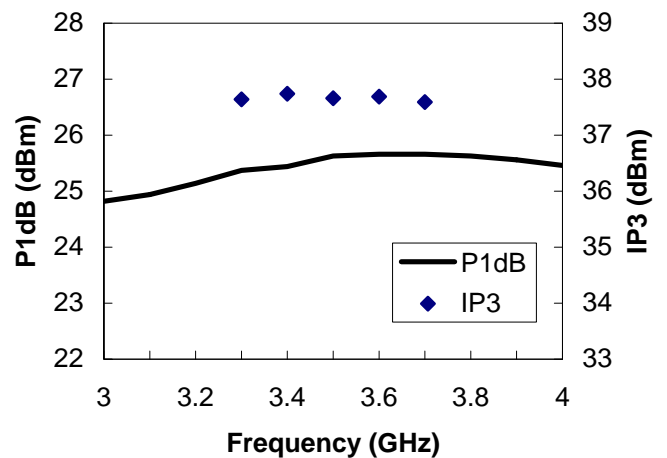
OPTIMUM LOADS

Freq GHz	Γ _s MAG	Γ _s ANG	Γ _L MAG	Γ _L ANG
1	0.965	-100.1	0.254	178.4
2	0.945	-144.3	0.264	177.7
3	0.936	-168.2	0.278	178.4
4	0.931	-174.7	0.293	179.4
5	0.925	160.1	0.306	-175.6
6	0.919	146.4	0.315	-170.4

V_{ds}=5V, I_{ds}=0.5 I_{dss} @ 3.5 GHz



V_{ds}=5V, I_{ds}=0.5 I_{dss}, Test CKT @ 3.5GHz



Specifications subject to change without notice.