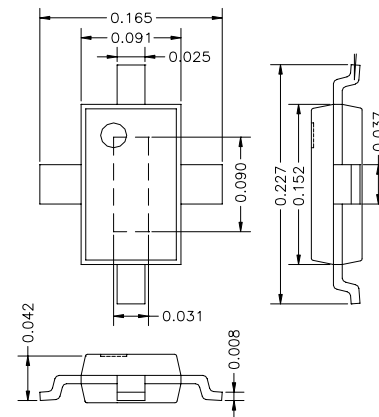




DESCRIPTION

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 6 GHz. 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 5 GHz, 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 6 GHz
- 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 @ 3.5 GHz, ($V_{ds} = 5\text{V}$, $I_{ds} = 0.5 I_{dss}$)

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

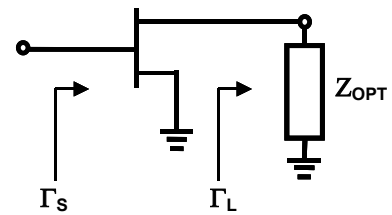
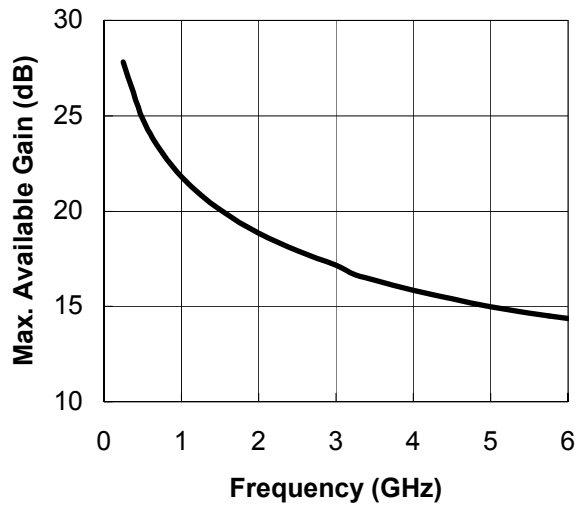
Parameters	Symbol	Rating
Drain-Source Voltage (V)	V_{ds}	8
Gate-Source Voltage (V)	V_{gs}	-5
Drain Current (mA)	I_{ds}	360
Continuous Dissipation At Room Temp. (W)	P_t	2.2
Operating Temp. ($^{\circ}\text{C}$)	T_A	-55 to +85
Max. Channel Temp. ($^{\circ}\text{C}$)	T_{ch}	+175

DC PARAMETERS

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

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

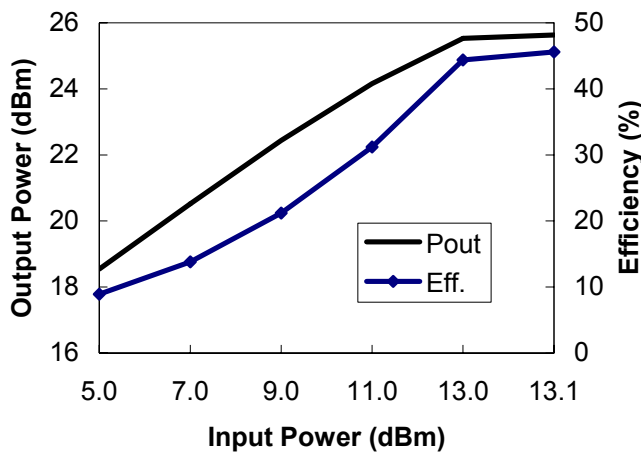
Freq (MHz)	MAG (S11)	ANG(S11)	MAG (S21)	ANG(S21)	MAG (S12)	ANG(S12)	MAG (S22)	ANG(S22)
1000	0.905	-82.434	7.923	126.07	0.052	43.791	0.248	-94.445
2000	0.857	-128.859	5.398	93.902	0.069	19.007	0.254	-139.461
3000	0.824	-162.375	3.953	69.742	0.073	1.723	0.285	-166.5
4000	0.817	172.875	3.063	49.861	0.07	-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



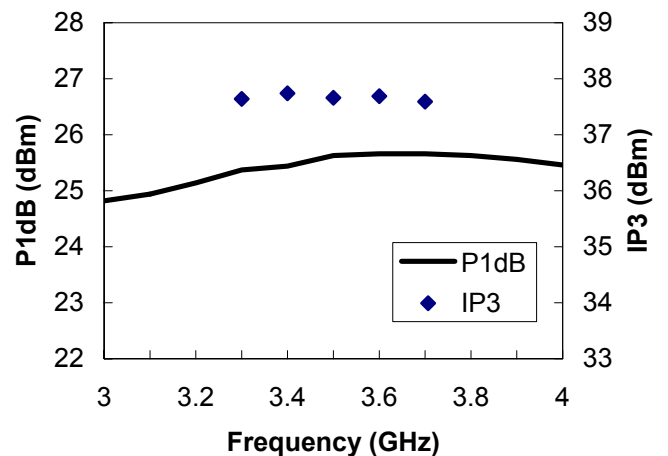
OPTIMUM LOADS

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.