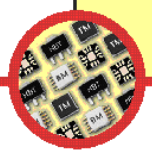
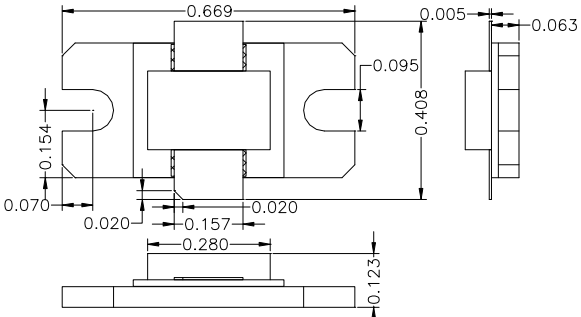
High Power GaAs Power FET

AM150MX-CU-R
April 2010
Rev 8



DESCRIPTION

AMCOM's AM150MX-CU-R is a part of the CU series of GaAs MESFETs. This part has a total gate width of 15mm. The AM150MX-CU-R is designed for high power microwave applications, operating up to 6GHz. The CU series is in a specially designed ceramic package with straight leads and flange in a drop-in mounting style. The flange at the bottom of the package serves simultaneously as DC ground, RF ground and thermal path. This FET is RoHS Compliant.



(All dimensions in inch)

FEATURES

- High Frequency Operation up to 6GHz
- High Gain and High Power, P_{1dB}=36.5dBm @3.5GHz
- Low Cost Ceramic Package
- Copper Tungsten Carrier 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} = 7V, I_{ds} = 0.5 I_{dss})

Parameters	MIN	TYP
P_{1dB}* (dBm)	35.5	36.5
Eff @ P_{1dB}	30%	37%
Small Signal Gain (dB)	9	10
IP3 (dBm)	48	50

* Power typically remains the same as frequency changes.

ABSOLUTE MAXIMUM RATING

Parameters	Sym	Rating
Drain-Source Voltage (V)	V_{ds}	9
Gate-Source Voltage (V)	V_{gs}	-5
Drain Current (mA)	I_{ds}	4750
Continuous Dissipation At Room Temp. (W)	P_t	24
Operating Temp. (^oC)	T_A	-55 to +85
Max. Channel Temp. (^oC)	T_{ch}	+175

DC PARAMETERS

Parameters	Conditions	MIN	TYP	MAX
Saturation Current I_{dss} (mA)	Vds = 3V Vgs = 0V	2550	3500	4750
Pinch-off Voltage V_p (V)	Vds = 3V Ids= 2.5% Idss	-2.6	-2	-1.0
Drain to Gate Breakdown Voltage BV_{gd} (V)	Idg = 1mA/mm	11	15	
Drain to Source Voltage V_{ds} (V)	Mounted on Heat Sink		7	
Thermal Resistance ($^oC/W$)	6			

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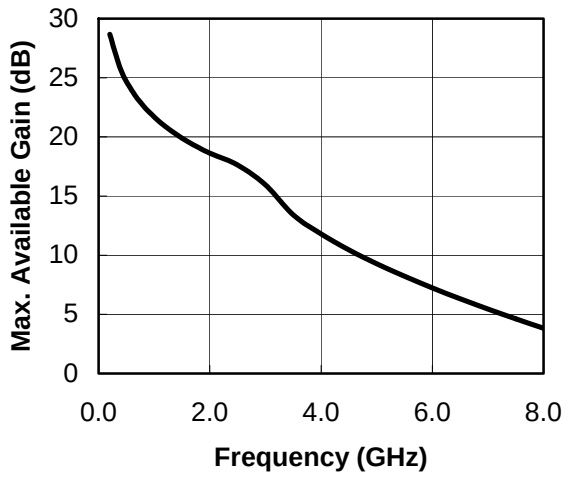
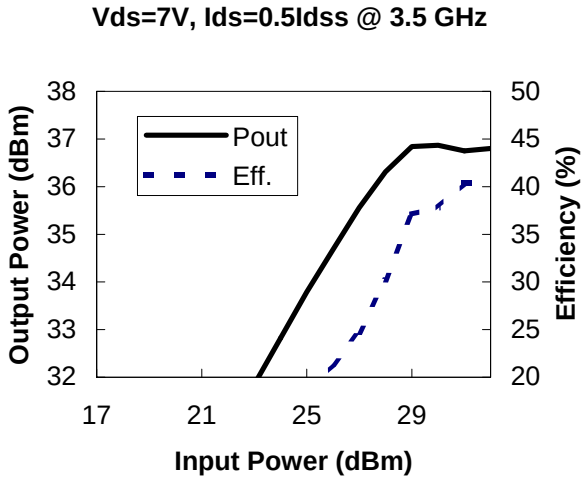
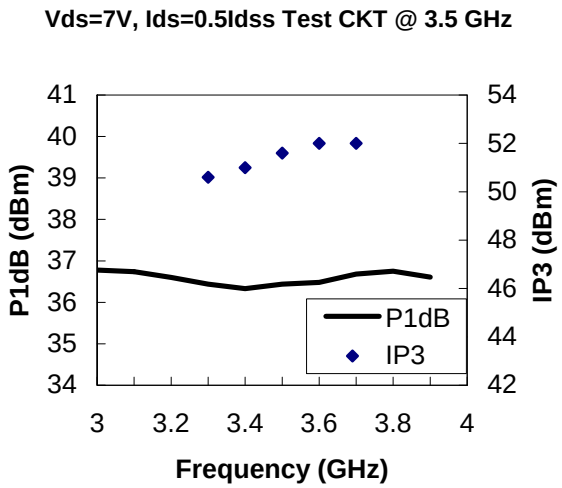
S-Parameters for AM150MX-CU-R @ 7V / 0.5 I_{dss} (s2p file downloadable from the web)

Freq (MHz)	MAG (S11)	ANG(S11)	MAG (S21)	ANG(S21)	MAG (S12)	ANG(S12)	MAG (S22)	ANG(S22)
1000	0.951	-180.0	1.991	72.1	0.014	-3.6	0.838	173.6
2000	0.927	166.0	1.370	44.3	0.019	-16.8	0.782	164.8
3000	0.849	146.4	1.640	5.5	0.034	-40.8	0.634	154.1
4000	0.556	84.0	2.734	-69.7	0.080	-101.0	0.349	146.1
5000	0.831	-105.6	1.547	162.7	0.060	146.0	0.527	-119.1
6000	0.959	-148.4	0.402	105.3	0.020	102.4	0.855	-148.9
7000	0.979	-162.6	0.154	78.5	0.010	87.9	0.934	-162.1
8000	0.986	-170.7	0.078	61.4	0.007	81.4	0.962	-170.2







Specifications subject to change without notice.