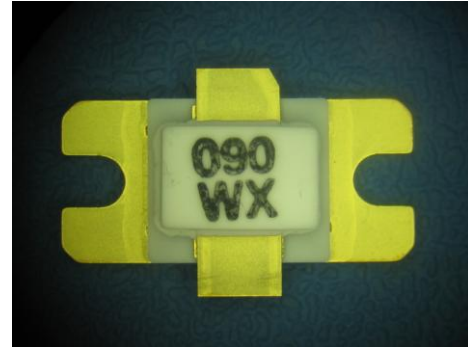


DESCRIPTION

AMCOM's AM090WX-CU-R is part of the CU series of GaAs pHEMTs. This part has a total gate width of 9mm. The AM090WX-CU-R is designed for high power microwave applications, operating up to 8GHz. The CU series is 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 part is RoHS compliant.



FEATURES

- High Frequency Operation up to 10 GHz
- High Gain & High Power, $P_{1dB}=37$ dBm @3.5GHz
- Surface Mountable
- Bottom ground for Effective Heat Removal

APPLICATIONS

- Wireless Local Loop Network
- Cellular Radio Communications
- WLAN, Repeaters & HYPERLAN
- C-Band VSAT
- Radar

RF PERFORMANCE @ 3.5 GHz, ($V_{ds} = 8V$, $I_{dq} = 0.9A$)

Parameters	MIN	TYP
P_{1dB} (dBm)	35.5	37
Eff @ P_{1dB}	35%	45%
Small Signal Gain (dB)	10.5	12
IP3 (dBm)	-	45

* Power typically remains the same as frequency changes.

ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Drain-Source Voltage (V)	V_{ds}	10
Gate-Source Voltage (V)	V_{gs}	-5
Drain Current (A)	I_{ds}	2.7
Continuous Dissipation At Room Temp. (W)	P_t	17.3
Operating Temp. (°C)	T_A	-55 to +85
Max. Channel Temp. (°C)	T_{ch}	+175

DC PARAMETERS

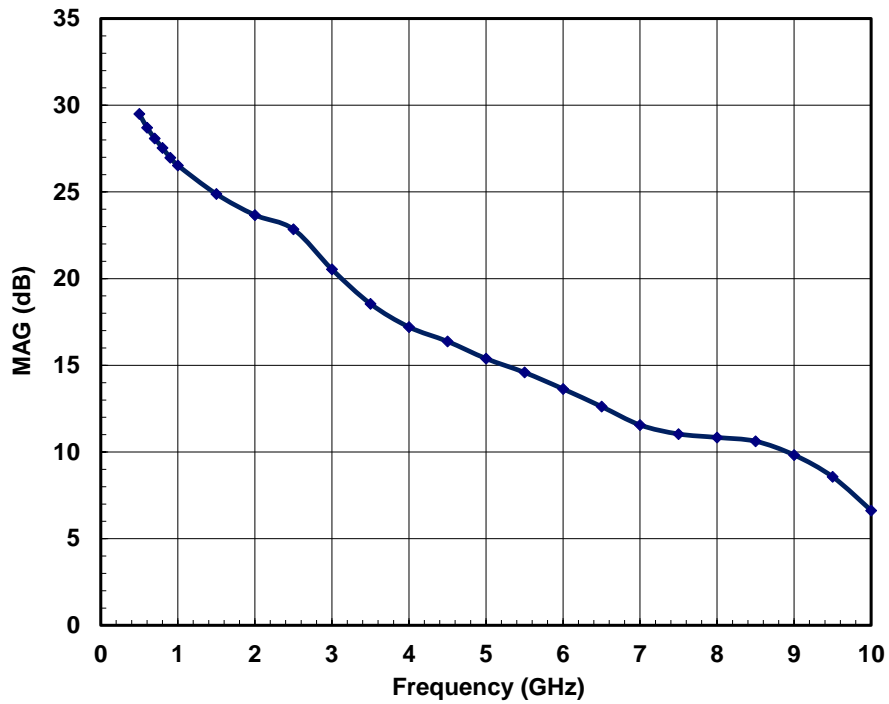
Parameters	Conditions	MIN	TYP	MAX
Saturation Current I_{dss} (A)	$V_{ds}=3V$, $V_{gs}=0V$	1.8	2.7	3.6
Pinch-off Voltage V_p (V)	$V_{ds}=3V$, $I_{ds}=2.5\% I_{dss}$	-2.2	-1.7	-1.2
Drain to Gate Breakdown Voltage BV_{gd} (V)	$I_{dg} = 1mA/mm$	15	20	
Thermal Resistance (°C/W)			8.7	

S- Parameters for AM090WX-CU-R @ 8V / 0.9A (S2P file downloadable from the Web)

Freq(GHz)	MAG(S11)	ANG(S11)	MAG(S21)	ANG(S21)	MAG(S12)	ANG(S12)	MAG(S22)	ANG(S22)
0.5	0.944	-169.84	8.045	83.38	0.009	2.23	0.733	-178.3
0.6	0.946	-172.87	6.655	79.25	0.009	-0.48	0.732	-179.41
0.7	0.949	-175.33	5.658	75.75	0.009	-2.65	0.730	179.58
0.8	0.947	-177.44	4.923	72.42	0.009	-4.01	0.735	179.24
0.9	0.948	-179.34	4.335	68.95	0.009	-6.26	0.740	179
1	0.947	179.3	3.889	65.85	0.009	-7.98	0.741	178.82
1.5	0.943	174.49	2.755	52.28	0.009	-13.34	0.741	178.24
2	0.927	170.51	2.209	34.61	0.010	-23.60	0.766	178.13
2.5	0.914	164.99	2.090	19.51	0.011	-31.86	0.743	178.16
3	0.901	157.66	2.116	5.22	0.013	-39.77	0.705	175.92
3.5	0.880	149.04	2.193	-8.73	0.016	-47.70	0.672	171.08
4	0.842	138.33	2.306	-23.13	0.019	-57.19	0.668	165.37
4.5	0.758	122.08	2.552	-41.49	0.023	-69.31	0.691	161.39
5	0.572	91.44	2.992	-69.51	0.030	-93.42	0.715	158.68
5.5	0.375	0.98	3.501	-115.56	0.038	-135.27	0.648	154.31
6	0.673	-91.81	3.017	-172.04	0.035	172.59	0.440	163.66
6.5	0.863	-127.51	2.052	143.64	0.025	128.39	0.433	-164.45
7	0.909	-144.36	1.425	116.5	0.016	102.86	0.522	-152.72
7.5	0.933	-154.95	1.117	99.67	0.012	90.75	0.548	-150.58
8	0.951	-163.81	0.929	86.96	0.009	80.89	0.545	-155.33
8.5	0.964	-171.65	0.740	73.99	0.006	66.32	0.593	-167.37
9	0.970	-178.02	0.538	59.01	0.002	43.96	0.705	-177.49
9.5	0.970	176.89	0.387	44.36	0.001	-131.55	0.797	178.01
10	0.966	172.19	0.312	30.42	0.005	-172.41	0.838	176.74
10.5	0.954	167.24	0.294	15.68	0.010	147.25	0.829	176
11	0.939	161.67	0.321	-2.283	0.015	100.66	0.756	173.2
11.5	0.936	155.08	0.346	-22.81	0.018	60.79	0.595	167.09
12	0.938	147.44	0.342	-32.70	0.017	37.86	0.481	150.7

* Download S-parameters file from website: <http://www.amcomusa.com>

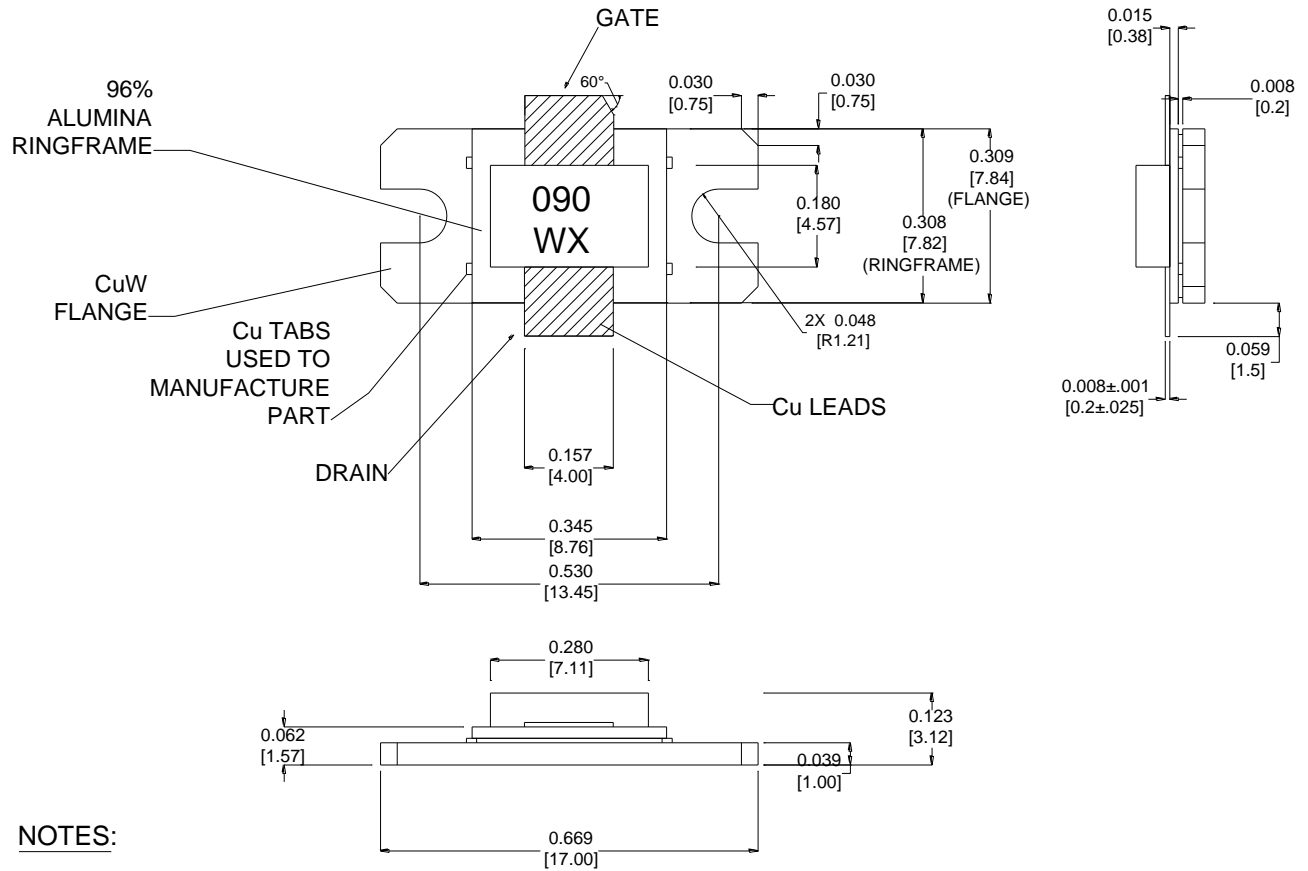
MAXIMUM AVAILABLE GAIN (8V,0.9A)



Optimum Load (8V,0.9A)

Freq (GHz)	MAG(Γ_L)	ANG(Γ_L)
0.1	0.812	-179.71
0.2	0.812	-179.41
0.3	0.812	-179.12
0.4	0.812	-178.83
0.5	0.812	-178.54
0.6	0.811	-178.24
0.7	0.811	-177.95
0.8	0.810	-177.66
0.9	0.810	-177.36
1	0.809	-177.07
1.5	0.805	-175.56
2	0.798	-174.02
2.5	0.789	-172.42
3	0.778	-170.75
3.5	0.762	-169.01
4	0.742	-167.21
4.5	0.717	-165.38
5	0.685	-163.38
5.5	0.644	-161.99
6	0.594	-160.91

CU PACKAGE OUTLINE:



NOTES:

1. ALL DIMENSIONS AND TOLERANCE BOX IN INCHES (mm IN PARENTHESIS).