

Performance

- Frequency: DC~6GHz
- Psat: 10W
- Typical PAE: 60%
- Small Signal Gain: 16dB@2GHz
14dB@4GHz
- Operating Voltage: 28V
- Process: 0.25um GaN HEMT Technology
- Package: Metal Ceramic Package

Electrical Specifications (Ta=+25°C)

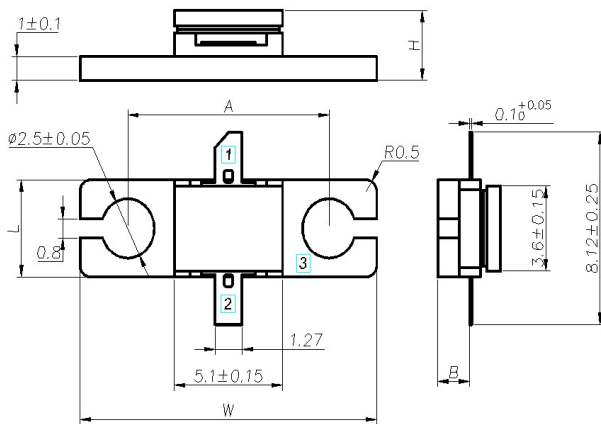
Parameter	Value			Unit	Test Condition
	Min.	Typical	Max.		
DC Specifications (Note 1)					
V _{GS (th)}	-4.0	-3.0	-2.3	V	V _{DS} =10V, I _D =3.6mA
V _{GS (Q)}	-	-2.7	-	V	V _{DS} =28V, I _D =200mA
I _(DS)	-	3.5	-	A	V _{DS} =6V, V _{GS} =2V
V _(BR)	120	-	-	V	V _{GS} =-8V, I _D =3.6mA
RF Specifications (Note 2)					
G _{SS}	12.5	14	-	dB	V _{DS} =28V, I _{DQ} =200mA
P _{SAT}	10	12	-	W	
η	50	60	-	%	V _{DS} =28V, I _{DQ} =200mA, Saturated output
VSWR	-	-	10:1		V _{DS} =28V, I _{DQ} =200mA, P _{OUT} =10W
Note:					
1、 Test through PCM, Saturated current is pushed by PCM.					
2、 RF specification is obtained from JIG, Frequency=2.7-3.1GHz					

Absolute Max Ratings (TA=25°C)

Symbol	Parameter	Value	Unit
V _{ds}	Drain Voltage	36	V
V _{gs}	Gate Voltage	-5~0	V
T _{stg}	Storage Temperature	-55~150	°C
T _{ch}	Channel Temperature	225	°C
T _s	Sintering Temperature	245	°C
T _c	Operating Temperature	-55~85	°C

Exceeding any one or combination of these limits may cause permanent damage.

Outline Drawing

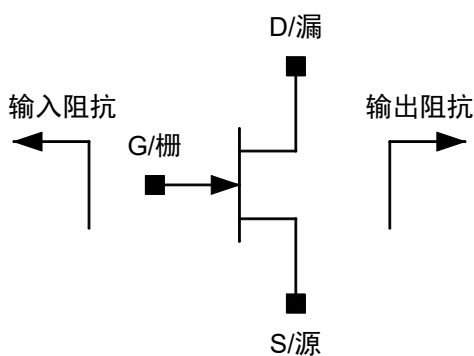


Application Circuit

Mark	Min.	Typ.	Max.
A	9.35	9.50	9.65
B	1.45	1.55	1.70
H	2.80	3.05	3.30
L	3.95	4.10	4.25
W	13.85	14.00	14.15

PIN#1 RF Input
PIN#2 RF Output
PIN#3 GND

Input and Output Impedance



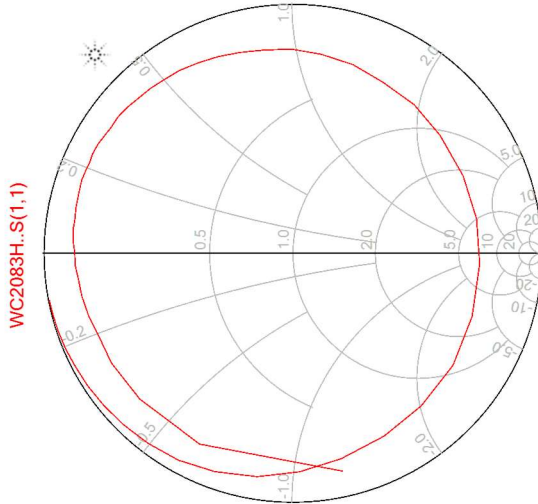
Freq.	Input Impedance	Output Impedance
0.5GHz	$20.2 + j16.18$	$51.7 + j15.2$
1.0GHz	$8.38 + j9.46$	$41.4 + j28.5$
1.5GHz	$7.37 + j0$	$28.15 + j29.0$
2.5GHz	$3.19 - j4.76$	$19.0 + j9.2$
3.5GHz	$3.18 - j13.3$	$14.6 + j7.46$

Note

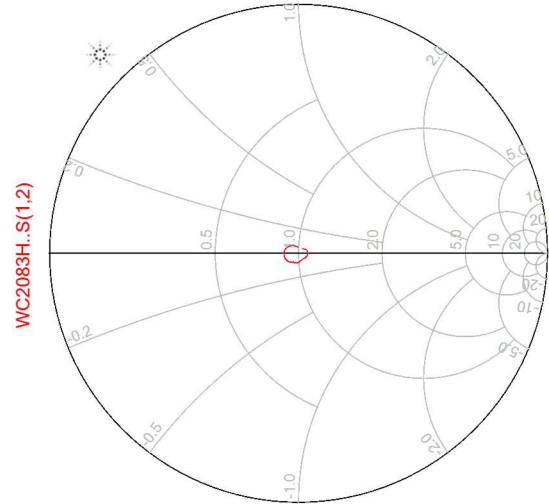
- 1、 Source (S) is grounded, apply V_{gs} and R_{Fin} at Gate (G), apply V_{ds} at Drain (D) and connect to R_{Fout} ;
- 2、 Test condition is $V_{DS}=28V$, $I_{DQ}=200mA$, CW, Package type is JY02F202;
- 3、 Impedance points are recommended, this takes power, gain, PAE into consideration;
- 4、 When used for low frequency, apply series resistors at input circuit to ensure stability.

Frequency (GHz)	Amplitude S11	Phase S11	Amplitude S21	Phase S21	Amplitude S12	Phase S12	Amplitude S22	Phase S22
0.20	0.8968	-77.13	22.4	133.7	0.0242	45.55	0.3536	-98.41
0.40	0.8522	-116	14.86	110.2	0.03273	23.84	0.437	-129.1
0.60	0.8476	-136.4	10.71	97.34	0.03536	11.4	0.4637	-144.4
0.80	0.85	-148.8	8.352	87.98	0.03608	2.543	0.4936	-151.9
1.00	0.8457	-156.9	6.737	79.86	0.03626	-3.864	0.5037	-157.3
1.20	0.8561	-163	5.645	73.66	0.03626	-9.459	0.5196	-159.9
1.40	0.8631	-168.4	4.881	68.5	0.03601	-14.43	0.5311	-163.2
1.60	0.8653	-172.7	4.293	62.88	0.0357	-18.6	0.543	-165.1
1.80	0.8731	-176.6	3.791	58.81	0.03506	-22.81	0.5581	-167.4
2.00	0.8743	179.8	3.446	53.95	0.03438	-26.21	0.5681	-169.5
2.20	0.882	176.7	3.119	49.86	0.03356	-29.73	0.5805	-171.6
2.40	0.8848	173.6	2.898	45.51	0.03318	-32.83	0.5878	-173.4
2.60	0.8836	170.9	2.676	39.82	0.03279	-36.1	0.5966	-174.9
2.80	0.8876	168.4	2.471	35.96	0.0324	-39.34	0.6054	-176.7
3.00	0.8893	165.8	2.323	31.84	0.03178	-42.24	0.613	-178.4
3.20	0.8916	163.3	2.188	28.41	0.03099	-45.49	0.6239	179.9
3.40	0.8945	160.9	2.091	25.21	0.03027	-47.93	0.6309	178
3.60	0.8932	158.5	2.017	20.31	0.02975	-50.12	0.6399	176.4
3.80	0.8907	156.3	1.932	14.87	0.02958	-52.31	0.6454	175
4.00	0.8952	153.8	1.826	11.86	0.02901	-54.32	0.6533	173
4.20	0.8943	150.9	1.808	8.627	0.02907	-56.47	0.66	171.6
4.40	0.8891	148.1	1.788	3.352	0.02895	-58.62	0.6634	169.7
4.60	0.8849	145.5	1.721	-2.706	0.02893	-60.74	0.6712	168.5
4.80	0.8874	142.2	1.68	-4.9	0.02905	-62.67	0.6711	166
5.00	0.8831	138.6	1.69	-8.75	0.02915	-65.05	0.6763	164.6
5.20	0.8754	134.8	1.698	-13.29	0.02938	-66.54	0.6742	162.5
5.40	0.8718	130.8	1.707	-18.11	0.02986	-69.05	0.6754	160.6
5.60	0.8648	126.5	1.715	-23.26	0.03053	-70.92	0.6729	158.1
5.80	0.8606	121.7	1.719	-28.08	0.031	-73.43	0.6706	155.7
6.00	0.8508	116.4	1.755	-32.78	0.03184	-75.63	0.6628	153
6.20	0.8413	110.7	1.798	-38.45	0.03282	-78.49	0.6601	150.4
6.40	0.8305	104.6	1.84	-44.69	0.0339	-81.54	0.6525	147
6.60	0.8211	97.98	1.883	-51.74	0.03496	-84.57	0.6425	143.9
6.80	0.8164	90.31	1.923	-57.84	0.03663	-87.92	0.6331	140
7.00	0.8045	81.98	1.988	-64.79	0.03853	-92.67	0.6168	136.2
7.20	0.7927	72.33	2.06	-72.26	0.04007	-98.31	0.609	131.8
7.40	0.7743	62.28	2.103	-80.59	0.04053	-103.3	0.5838	128.1
7.60	0.7681	50.71	2.146	-88.1	0.04174	-109.9	0.5641	123.9
7.80	0.7558	38.54	2.208	-96.46	0.04171	-112.9	0.5434	119.9
8.00	0.7495	24.31	2.285	-107.4	0.04352	-119.9	0.512	114.6
8.20	0.7495	10.5	2.33	-117.1	0.04074	-124.3	0.4837	111.1
8.40	0.7509	-3.387	2.337	-126.7	0.04189	-120.5	0.4648	106.9
8.60	0.7629	-19.43	2.343	-137.3	0.04488	-125.2	0.4392	102.3
8.80	0.7848	-35	2.358	-148.2	0.05078	-132.5	0.4177	92.26
9.00	0.8006	-49.93	2.256	-158.8	0.05381	-139	0.3597	90.97
9.20	0.8202	-63.48	2.187	-172	0.05618	-148	0.2765	72.16
9.40	0.8472	-76.75	2.147	174.9	0.05899	-157.6	0.2344	43.77
9.60	0.8774	-88.19	2.034	161.6	0.06011	-167.5	0.1941	13.14
9.80	0.9076	-99.04	1.892	147	0.05992	-179.7	0.2296	-36.79
10.00	0.9302	-109.6	1.675	133.6	0.05745	169.4	0.3017	-69.5

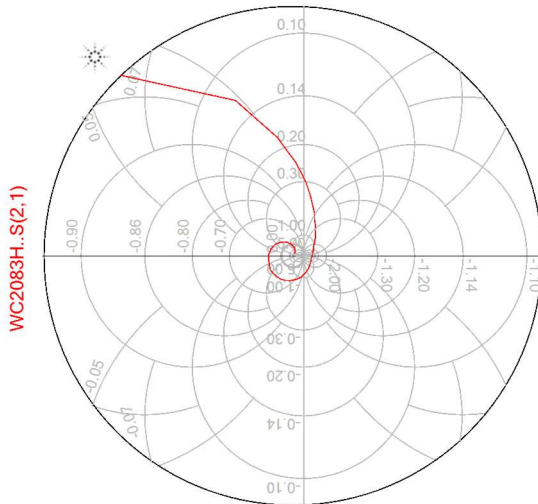
10.20	0.9484	-118.9	1.484	121	0.05485	160.7	0.3993	-84.99
10.40	0.9583	-127.2	1.279	109.3	0.05048	151.7	0.4926	-100.5
10.60	0.9667	-134.7	1.087	97.8	0.04615	142.8	0.5873	-112.1
10.80	0.9731	-141.2	0.9029	88.26	0.04111	135.8	0.6501	-123.6
11.00	0.9793	-147.1	0.7473	77.32	0.037	127.5	0.7415	-132.2
11.20	0.9829	-152.4	0.621	70.72	0.03399	123.1	0.7724	-139.2
11.40	0.9881	-157.1	0.5234	63.39	0.03169	117.2	0.8089	-144.7
11.60	0.991	-161.5	0.4348	57.48	0.02919	112	0.8371	-150.4
11.80	0.9925	-165.4	0.367	51.7	0.02668	104.9	0.8577	-155.2
12.00	0.9937	-169	0.3099	47.09	0.02418	99.3	0.8773	-159.7



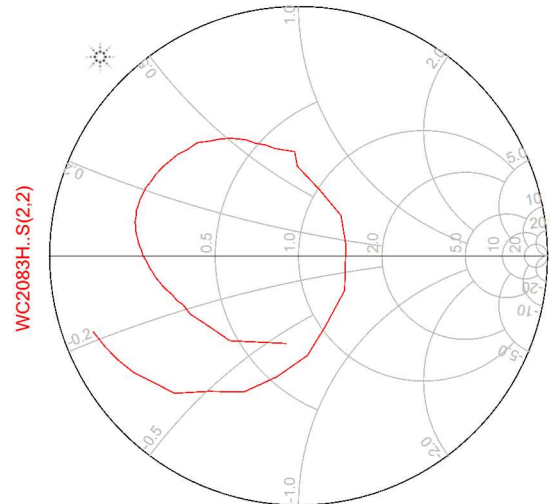
freq (200.0MHz to 12.00GHz)



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