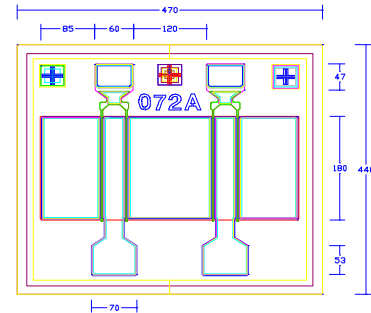


PRELIMINARY DATA SHEET
Low Distortion GaAs Power FET

- +25.0dBm TYPICAL OUTPUT POWER
- 10.0dB TYPICAL POWER GAIN AT 12GHz
- 0.3 X 720 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- Idss SORTED IN 15mA PER BIN RANGE



Chip Thickness: 75 ± 13 microns
All Dimensions In Microns

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P_{1dB}	Output Power at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}		f=12GHz 25.0 f=18GHz 25.0		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}		f=12GHz 10.0 f=18GHz 7.5		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}		f=12GHz 32		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	120	190	270	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	80	110		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =2.0mA		-2.0	-3.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.0mA	-12	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.0mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		55		°C/W

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	12V	8V
V_{gs}	Gate-Source Voltage	-8V	-4V
I_{ds}	Drain Current	I _{dss}	260Ma
I_{gsf}	Forward Gate Current	20mA	4mA
P_{in}	Input Power	25dBm	@ 3dB Compression
T_{ch}	Channel Temperature	175°C	150°C
T_{stg}	Storage Temperature	-65/175°C	-65/150°C
P_t	Total Power Dissipation	2.5 W	2.1 W

Note: 1. Exceeding any of the above ratings may result in permanent damage.

2. Exceeding any of the above ratings may reduce MTTF below design goals.

EFA072A

PRELIMINARY DATA SHEET

Low Distortion GaAs Power FE

S-PARAMETERS

6V, 100 mA

S-PARAMETERS

8V, 1/2Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---		FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.975	-29.2	7.010	158.8	0.020	73.8	0.387	-18.9	1.0	0.972	-29.7	7.064	158.3	0.021	73.2	0.452	-17.3
2.0	0.933	-55.6	6.350	140.9	0.037	59.8	0.365	-37.6	2.0	0.931	-56.4	6.382	140.1	0.037	59.1	0.425	-33.8
3.0	0.899	-77.3	5.596	126.0	0.049	48.7	0.357	-52.5	3.0	0.896	-78.4	5.605	124.8	0.048	48.3	0.410	-47.2
4.0	0.862	-95.5	4.962	114.2	0.057	41.2	0.379	-61.2	4.0	0.858	-96.7	4.934	112.8	0.055	40.4	0.425	-55.4
5.0	0.844	-106.9	4.290	104.2	0.061	35.9	0.346	-68.4	5.0	0.842	-108.0	4.273	102.8	0.059	34.9	0.394	-61.9
6.0	0.822	-120.9	3.774	93.1	0.064	29.0	0.331	-83.0	6.0	0.820	-121.9	3.754	91.5	0.060	28.5	0.373	-75.1
7.0	0.802	-132.2	3.402	85.0	0.065	25.4	0.351	-86.5	7.0	0.802	-133.1	3.377	83.2	0.062	24.6	0.392	-78.9
8.0	0.805	-136.0	3.083	79.0	0.066	23.5	0.328	-90.0	8.0	0.805	-136.8	3.059	77.3	0.063	23.8	0.371	-81.9
9.0	0.805	-141.5	2.754	71.6	0.066	20.6	0.310	-102.9	9.0	0.804	-142.3	2.738	69.9	0.062	20.0	0.350	-93.8
10.0	0.797	-149.6	2.504	64.3	0.064	17.6	0.328	-110.6	10.0	0.799	-150.2	2.483	62.4	0.061	17.3	0.366	-102.0
11.0	0.802	-154.5	2.296	58.2	0.064	17.1	0.333	-117.5	11.0	0.803	-155.2	2.286	55.9	0.061	16.9	0.369	-108.6
12.0	0.802	-160.8	2.097	51.5	0.064	15.7	0.356	-125.0	12.0	0.803	-161.4	2.079	49.1	0.059	14.9	0.391	-116.3
13.0	0.803	-166.1	1.963	45.9	0.064	14.2	0.368	-127.2	13.0	0.805	-166.7	1.943	43.4	0.059	14.4	0.405	-119.2
14.0	0.813	-167.4	1.805	40.8	0.062	15.0	0.374	-137.6	14.0	0.816	-167.9	1.791	38.1	0.059	15.2	0.408	-129.4
15.0	0.828	-175.8	1.581	33.5	0.059	11.8	0.438	-143.2	15.0	0.832	-176.3	1.564	30.4	0.055	14.4	0.471	-136.1
16.0	0.834	171.5	1.508	27.3	0.060	11.4	0.472	-133.5	16.0	0.837	171.1	1.482	23.9	0.056	12.6	0.510	-127.7
17.0	0.819	177.2	1.514	24.7	0.066	14.1	0.439	-141.8	17.0	0.823	176.7	1.491	21.4	0.061	15.2	0.479	-135.6
18.0	0.833	176.8	1.311	20.0	0.062	15.5	0.495	-154.0	18.0	0.836	176.6	1.293	16.4	0.058	15.9	0.530	-148.1
19.0	0.832	160.7	1.194	13.2	0.061	13.5	0.550	-143.2	19.0	0.835	160.3	1.167	9.5	0.058	15.4	0.587	-138.7
20.0	0.824	156.5	1.151	8.4	0.065	13.3	0.564	-143.6	20.0	0.827	156.2	1.121	4.6	0.060	16.0	0.605	-139.5
21.0	0.834	155.4	1.223	4.4	0.077	14.3	0.508	-148.1	21.0	0.837	154.9	1.197	0.5	0.070	18.2	0.549	-143.6
22.0	0.821	162.6	1.109	1.4	0.075	16.7	0.554	-163.5	22.0	0.825	162.2	1.088	-2.7	0.071	20.4	0.595	-158.9
23.0	0.833	154.1	1.012	-4.1	0.075	17.6	0.578	-161.8	23.0	0.837	153.9	0.986	-8.4	0.071	20.2	0.622	-158.1
24.0	0.832	149.9	1.017	-9.0	0.083	16.3	0.571	-165.5	24.0	0.836	149.3	0.991	-13.5	0.080	20.0	0.615	-161.4
25.0	0.831	151.9	0.939	-12.6	0.086	17.9	0.602	-175.8	25.0	0.837	151.2	0.921	-17.9	0.084	20.7	0.649	-172.1
26.0	0.834	144.0	0.899	-18.7	0.090	16.8	0.611	-175.8	26.0	0.842	143.3	0.867	-23.9	0.088	20.8	0.656	-172.4

Note: The data included 0.7 mils diameter Au bonding wires:
2 gate wires, 15 mils each; 2 drain wires, 20 mils each; 6 source wires, 10 mils each.