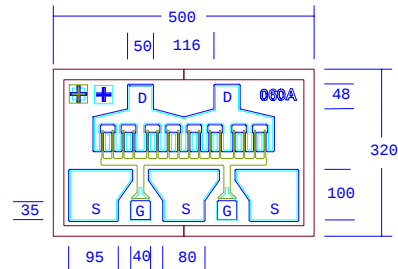


DATA SHEET
High Efficiency Heterojunction Power FET

- +26.5dBm TYPICAL OUTPUT POWER
- 10.5dB TYPICAL POWER GAIN AT 18GHz
- 0.3 X 600 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH 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 f=18GHz	25.0	26.5 26.5		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz f=18GHz	11.5	13.0 10.5		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz		45		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	105	180	255	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	120	190		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =2.0mA		-1.0	-2.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.0mA	-11	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.0mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		65		°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	-3V
I_{ds}	Drain Current	I _{dss}	220mA
I_{gsf}	Forward Gate Current	30mA	5mA
P_{in}	Input Power	24dBm	@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	2.1W	1.7W

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.

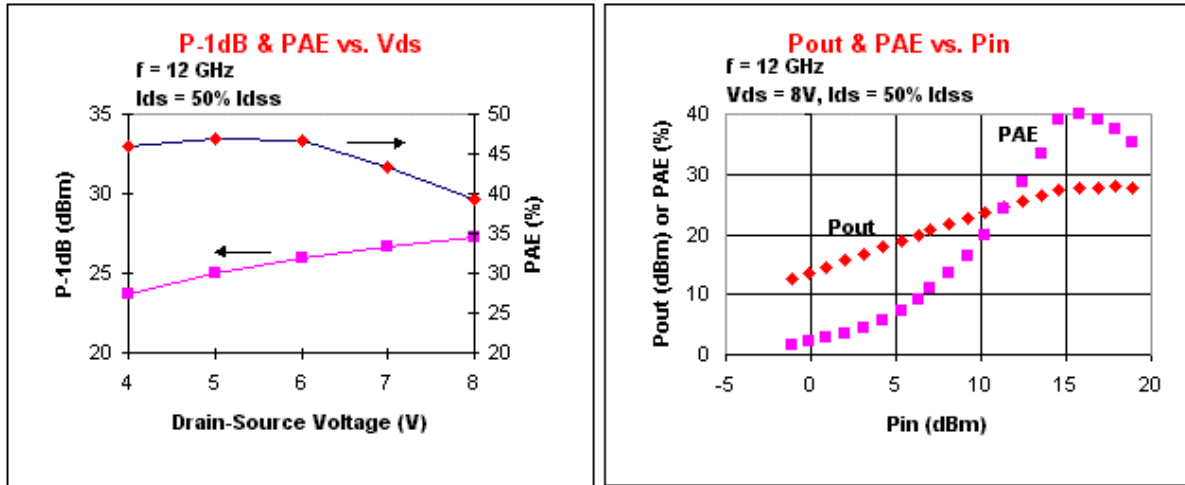
Excelics Semiconductor, Inc., 2908 Scott Blvd., Santa Clara, CA 95054

Phone: (408) 970-8664 Fax: (408) 970-8998 Web Site: www.excelics.com

EPA060A

DATA SHEET

High Efficiency Heterojunction Power FET



S-PARAMETERS

8V, 1/2 Idss

FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---		FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
(GHz)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	(GHz)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.944	-49.2	12.673	148.9	0.027	63.8	0.506	-26.9	21.0	0.863	154.4	1.284	3.3	0.049	-0.4	0.523	-161.7
2.0	0.898	-85.9	10.129	127.1	0.043	44.6	0.428	-47.2	22.0	0.866	152.6	1.207	-1.1	0.050	0.1	0.547	-166.3
3.0	0.862	-110.2	8.004	111.6	0.051	33.7	0.364	-60.8	23.0	0.872	151.2	1.140	-5.4	0.051	1.2	0.572	-170.4
4.0	0.850	-126.7	6.507	100.2	0.054	26.2	0.329	-71.5	24.0	0.877	149.9	1.078	-9.9	0.053	2.5	0.594	-174.5
5.0	0.848	-138.3	5.426	91.1	0.055	22.0	0.306	-80.2	25.0	0.885	148.7	1.023	-14.1	0.054	2.9	0.620	-178.5
6.0	0.845	-146.8	4.644	83.5	0.057	17.1	0.301	-87.7	26.0	0.893	148.0	0.987	-18.2	0.055	3.6	0.642	178.5
7.0	0.845	-153.7	4.056	76.5	0.057	14.6	0.306	-95.1	27.0	0.896	146.6	0.931	-22.1	0.058	3.5	0.657	175.3
8.0	0.843	-159.5	3.585	70.2	0.057	12.3	0.315	-101.2	28.0	0.902	144.8	0.895	-26.1	0.061	5.8	0.675	172.9
9.0	0.844	-164.5	3.205	64.3	0.056	9.4	0.327	-106.9	29.0	0.904	143.4	0.853	-29.8	0.062	6.2	0.684	170.5
10.0	0.846	-168.3	2.897	59.2	0.053	6.7	0.342	-111.8	30.0	0.898	141.4	0.817	-33.6	0.064	5.1	0.699	168.4
11.0	0.849	-172.2	2.638	53.5	0.053	5.8	0.359	-116.6	31.0	0.906	139.0	0.786	-37.2	0.065	4.0	0.708	166.3
12.0	0.851	-175.6	2.416	48.4	0.052	4.9	0.379	-121.3	32.0	0.898	136.0	0.752	-41.1	0.064	3.0	0.720	163.8
13.0	0.852	-179.3	2.234	43.2	0.051	2.5	0.396	-125.6	33.0	0.890	133.2	0.705	-45.4	0.065	0.7	0.733	161.2
14.0	0.855	-177.3	2.068	38.0	0.050	1.9	0.413	-129.8	34.0	0.891	129.2	0.671	-49.3	0.064	2.6	0.740	157.9
15.0	0.859	-173.7	1.931	32.7	0.050	1.0	0.431	-134.2	35.0	0.896	125.5	0.641	-53.4	0.066	-2.0	0.759	154.2
16.0	0.857	-170.3	1.801	27.5	0.049	1.0	0.447	-138.3	36.0	0.891	122.5	0.604	-58.2	0.066	-4.6	0.774	149.6
17.0	0.855	-166.4	1.685	22.0	0.049	-2.8	0.461	-142.9	37.0	0.903	119.1	0.577	-62.3	0.066	-12.0	0.788	143.8
18.0	0.856	-162.7	1.576	16.9	0.050	-2.9	0.472	-146.6	38.0	0.914	116.3	0.551	-67.0	0.069	-21.6	0.789	138.7
19.0	0.854	-159.4	1.486	11.8	0.049	-3.1	0.479	-151.6	39.0	0.923	111.4	0.520	-72.6	0.070	-33.8	0.788	133.9
20.0	0.854	-156.5	1.404	7.1	0.048	-2.1	0.492	-155.7	40.0	0.909	108.9	0.497	-79.1	0.073	-41.6	0.786	129.4

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, 7 mils each.