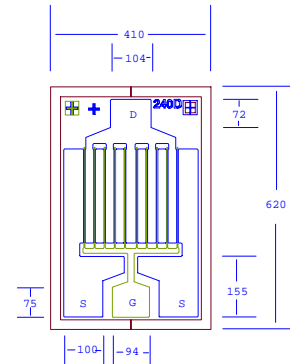


DATA SHEET
High Efficiency Heterojunction Power FET

- +33dBm TYPICAL OUTPUT POWER
- 20.0 dB TYPICAL POWER GAIN AT 2GHz
- 0.4 X 2400 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH RELIABILITY
- Idss SORTED IN 60mA 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= 2GHz 31.0	f= 2GHz 33.0	f= 4GHz 33.0	dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}	f= 2GHz 18.5	f= 2GHz 20.0	f= 4GHz 15.0	dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}	f=2GHz	55		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	440	720	940	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	480	760		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =6mA		-1.0	-2.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =2.4mA	-11	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =2.4mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		23		°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}	620mA
I_{gsf}	Forward Gate Current	120mA	20mA
P_{in}	Input Power	30dBm	@ 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	6.0 W	5.0W

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.

EPA240D

DATA SHEET High Efficiency Heterojunction Power FET

S-PARAMETERS

8V, 1/2 Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.500	0.932	-84.1	15.622	132.6	0.023	49.4	0.267	-50.6
1.000	0.885	-124.4	10.061	109.7	0.029	33.4	0.194	-76.5
1.500	0.868	-144.6	7.154	97.1	0.031	27.8	0.165	-92.0
2.000	0.861	-156.7	5.496	88.3	0.032	26.3	0.156	-103.5
2.500	0.859	-165.1	4.443	81.3	0.033	26.8	0.158	-113.0
3.000	0.858	-171.6	3.720	75.2	0.034	28.5	0.166	-121.5
3.500	0.859	-176.9	3.194	69.7	0.034	30.9	0.179	-129.2
4.000	0.860	178.6	2.794	64.5	0.035	33.8	0.194	-136.4
4.500	0.862	174.6	2.478	59.5	0.037	36.8	0.212	-143.3
5.000	0.864	171.0	2.223	54.7	0.039	39.7	0.232	-149.8
5.500	0.867	167.6	2.012	50.0	0.041	42.4	0.255	-156.0
6.000	0.870	164.4	1.833	45.4	0.044	44.7	0.279	-162.0
6.500	0.873	161.4	1.680	40.9	0.048	46.5	0.304	-167.8
7.000	0.877	158.5	1.546	36.5	0.051	47.8	0.331	-173.5
7.500	0.880	155.8	1.428	32.2	0.055	48.5	0.359	-178.9
8.000	0.884	153.1	1.323	27.9	0.060	48.7	0.388	175.8
8.500	0.888	150.5	1.229	23.8	0.065	48.5	0.417	170.6
9.000	0.892	147.9	1.143	19.7	0.069	47.8	0.447	165.6
9.500	0.896	145.4	1.064	15.7	0.074	46.8	0.477	160.7
10.000	0.900	143.0	0.993	11.8	0.079	45.5	0.506	155.9

Note: The data included 0.7 mils diameter Au bonding wires:
1 gate wires, 20 mils each; 1 drain wires, 12 mils each; 4 source wires, 7 mils each.