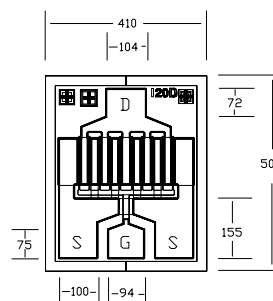


High Efficiency Heterojunction Power FET

FEATURES

- +29.5dBm TYPICAL OUTPUT POWER
- 19.5dB TYPICAL POWER GAIN AT 2GHz
- 0.5 X 1200 MICRON RECESSED "MUSHROOM" GATE
- Si₃N₄ PASSIVATION AND PLATED HEAT SINK
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- Idss SORTED IN 30mA PER BIN RANGE



Chip Thickness: 75 ± 20 microns
 All Dimensions In Microns

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)



Caution! ESD sensitive device.

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P _{1dB}	Output Power at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}	28.0	29.5 29.5		dBm
G _{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}	18.0	19.5 14.5		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}		50		%
I _{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	210	360	510	mA
G _m	Transconductance V _{ds} =3V, V _{gs} =0V	240	380		mS
V _p	Pinch-off Voltage V _{ds} =3V, I _{ds} =3.6mA		-1.0	-2.5	V
BV _{gd}	Drain Breakdown Voltage I _{gd} =1.2mA	-13	-15		V
BV _{gs}	Source Breakdown Voltage I _{gs} =1.2mA	-7	-14		V
R _{th}	Thermal Resistance (Au-Sn Eutectic Attach)		40	45	°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	-5V	-3V
I _{gsf}	Forward Gate Current	5.4 mA	1.8 mA
I _{gsr}	Reverse Gate Current	0.9 mA	0.3 mA
P _{in}	Input Power	26 dBm	@ 3dB Compression
T _{ch}	Channel Temperature	175°C	175°C
T _{stg}	Storage Temperature	-65/175°C	-65/175°C
P _t	Total Power Dissipation	3.3 W	3.3 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.

Specifications are subject to change without notice.

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Revised January 2006



EPA120D

UPDATED 01/13/2006

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
1	0.891	-106.9	15.439	119.2	0.029	40.8	0.290	-64.3
2	0.858	-143.2	9.009	97.3	0.034	27.9	0.219	-86.7
3	0.854	-159.9	6.233	84.9	0.036	26.8	0.207	-97.0
4	0.850	-170.6	4.775	75.1	0.037	25.2	0.212	-103.1
5	0.856	-178.8	3.800	66.3	0.039	29.6	0.228	-112.6
6	0.856	174.1	3.195	58.6	0.041	31.4	0.245	-117.0
7	0.858	168.5	2.766	51.0	0.044	34.1	0.258	-121.6
8	0.863	162.7	2.424	43.9	0.046	35.9	0.279	-127.2
9	0.870	157.6	2.140	36.7	0.048	36.0	0.298	-133.0
10	0.872	153.1	1.926	30.2	0.054	37.5	0.324	-139.4
11	0.880	148.6	1.738	23.4	0.056	38.3	0.352	-146.3
12	0.889	145.4	1.565	17.0	0.059	40.9	0.383	-152.7
13	0.890	142.4	1.412	10.7	0.065	37.4	0.413	-160.3
14	0.898	140.3	1.289	5.2	0.070	36.2	0.459	-165.7
15	0.910	138.5	1.176	0.0	0.075	38.6	0.487	-170.9
16	0.905	136.4	1.080	-5.4	0.080	36.8	0.529	-175.5
17	0.909	135.0	0.991	-9.9	0.083	36.9	0.557	-179.2
18	0.903	133.4	0.922	-14.9	0.092	35.4	0.581	177.8
19	0.901	130.8	0.874	-19.6	0.100	33.4	0.607	173.1
20	0.909	127.3	0.821	-24.3	0.109	32.7	0.614	168.7

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.

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