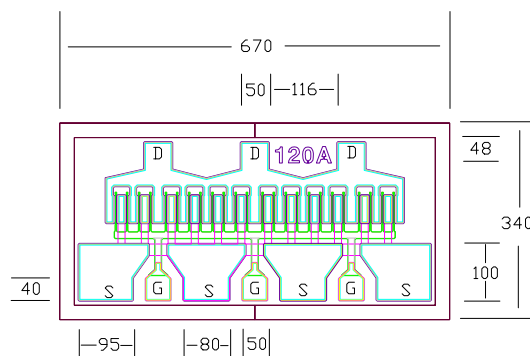


FEATURES

- +29.5dBm TYPICAL OUTPUT POWER
- 9.5dB TYPICAL POWER GAIN AT 18GHz
- 0.3 X 1200 MICRON RECESSED "MUSHROOM" GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH RELIABILITY
- Idss SORTED IN 30mA PER BIN RANGE



Chip Thickness: 75 ± 13 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} f= 12GHz f= 18GHz	28.0	29.5 29.5		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f= 12GHz f= 18GHz	10.0	12.0 9.5		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	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)		37		°C/W

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	10V	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	26.5 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	3.7 W	3.7 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.

Excelics Semiconductor, Inc. 310 De Guigne Drive, Sunnyvale, CA 94085

Phone: 408-737-1711 Fax: 408-737-1868 Web: www.excelics.com

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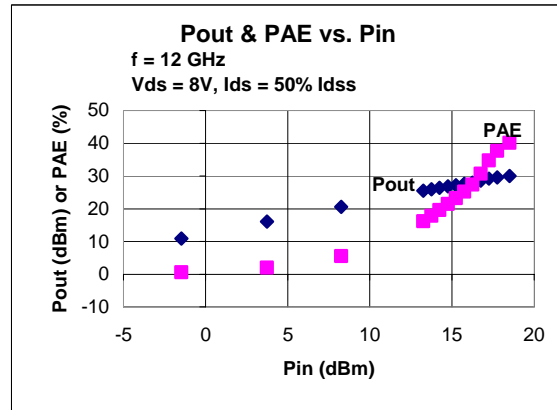
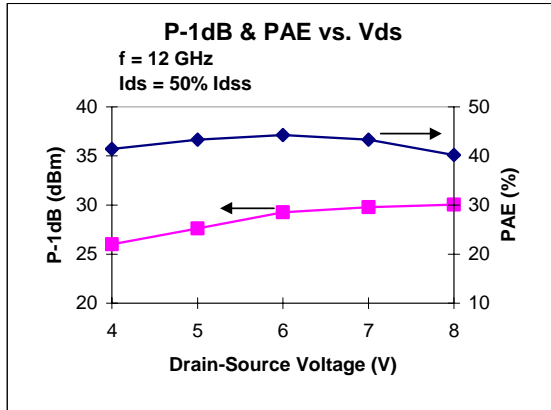
Revised June 2006



EPA120A

UPDATED 05/12/2006

High Efficiency Heterojunction Power FET



S-PARAMETERS 8V, 1/2 I_{ds}

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.890	-98.0	15.016	124.1	0.029	40.0	0.262	-100.0
2.0	0.878	-132.7	9.107	103.0	0.036	26.8	0.278	-127.9
3.0	0.871	-148.6	6.343	91.3	0.037	20.5	0.290	-138.9
4.0	0.871	-157.2	4.875	82.8	0.037	19.1	0.307	-142.9
5.0	0.865	-163.0	3.927	75.8	0.036	18.9	0.325	-145.1
6.0	0.870	-167.0	3.304	69.5	0.036	20.4	0.345	-146.0
7.0	0.873	-169.9	2.838	64.1	0.036	21.0	0.367	-147.1
8.0	0.878	-173.0	2.483	58.4	0.035	21.0	0.391	-148.0
9.0	0.876	-175.1	2.192	53.7	0.034	21.1	0.407	-149.2
10.0	0.879	-177.1	1.960	49.0	0.032	24.3	0.428	-150.3
11.0	0.885	-178.9	1.774	44.4	0.032	25.5	0.450	-152.0
12.0	0.896	179.2	1.616	39.8	0.032	27.6	0.469	-154.4
13.0	0.904	177.4	1.474	34.9	0.032	27.3	0.490	-157.4
14.0	0.905	175.7	1.343	30.3	0.033	27.3	0.507	-160.9
15.0	0.911	174.5	1.235	25.5	0.033	28.1	0.526	-165.2
16.0	0.906	173.3	1.126	20.7	0.034	27.9	0.551	-169.8
17.0	0.913	172.6	1.044	16.4	0.035	25.9	0.576	-174.1
18.0	0.922	171.3	0.971	11.5	0.036	23.3	0.604	-178.8
19.0	0.925	169.9	0.899	6.6	0.037	25.8	0.637	176.8
20.0	0.920	168.6	0.827	1.8	0.039	24.4	0.663	172.6
21.0	0.910	168.0	0.760	-2.2	0.042	25.1	0.686	169.6
22.0	0.907	166.8	0.715	-5.9	0.045	26.2	0.711	167.1
23.0	0.910	165.7	0.676	-9.1	0.049	27.8	0.736	165.3
24.0	0.911	164.1	0.642	-12.8	0.056	28.2	0.758	163.7
25.0	0.893	161.9	0.600	-15.8	0.060	31.5	0.766	162.5
26.0	0.883	161.5	0.573	-17.2	0.065	31.4	0.763	163.6

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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