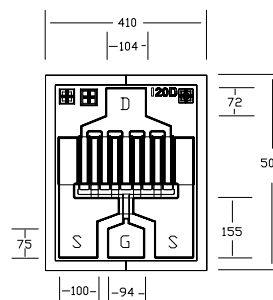


UPDATED 09/05/2006

Low Distortion GaAs Power FET

FEATURES

- +28.0dBm 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}	26.0	28.0 28.0		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}		45		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	220	340	440	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	140	180		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =3.4mA		-2.0	-3.5	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	-4V
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	25 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.



EFA120D

UPDATED 09/05/2006

Low Distortion GaAs Power FET

S-PARAMETERS

8V, 1/2 Idss

Freq GHz	S11		S21		S12		S22	
	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
1	0.918	-74.7	9.820	134.4	0.031	52.7	0.290	-41.9
2	0.878	-117.1	6.762	108.7	0.043	33.4	0.240	-68.5
3	0.858	-141.0	4.898	92.3	0.046	27.4	0.223	-84.0
4	0.852	-156.5	3.781	80.0	0.047	23.7	0.226	-96.2
5	0.849	-167.9	3.041	69.8	0.046	21.4	0.243	-106.1
6	0.849	-176.5	2.558	60.8	0.047	22.4	0.261	-111.3
7	0.846	176.6	2.200	52.9	0.049	24.8	0.282	-117.3
8	0.848	170.3	1.925	45.2	0.049	23.7	0.306	-123.0
9	0.848	164.8	1.720	37.9	0.049	26.5	0.331	-128.9
10	0.851	159.9	1.538	31.0	0.052	28.2	0.354	-134.1
11	0.859	154.9	1.392	23.9	0.054	30.5	0.383	-140.2
12	0.860	151.1	1.261	17.5	0.056	32.3	0.416	-145.8
13	0.865	147.4	1.149	11.3	0.061	30.9	0.449	-151.0
14	0.870	144.0	1.053	5.3	0.065	33.5	0.480	-155.5
15	0.869	140.7	0.962	-0.6	0.068	32.0	0.511	-159.8
16	0.877	137.8	0.893	-6.1	0.073	33.3	0.538	-163.7
17	0.878	134.8	0.823	-11.1	0.079	32.4	0.564	-167.5
18	0.876	131.7	0.766	-16.2	0.085	32.2	0.586	-171.0
19	0.881	128.4	0.719	-21.4	0.093	31.5	0.599	-174.8
20	0.882	124.6	0.671	-26.2	0.103	30.0	0.611	-178.6
21	0.872	116.8	0.662	-33.0	0.116	25.9	0.605	176.8
22	0.875	113.1	0.618	-37.8	0.124	24.2	0.626	172.2
23	0.876	110.2	0.574	-41.6	0.132	22.4	0.637	166.9
24	0.878	107.5	0.524	-45.6	0.141	21.3	0.662	161.9
25	0.876	105.0	0.482	-48.6	0.150	20.4	0.701	156.7
26	0.878	103.0	0.442	-51.6	0.163	17.3	0.714	151.8

Note: The data included 0.7 mils diameter Au bonding wires:
1 gate wires, 15 mils each; 2 drain wires, 12 mils each; 4 source wires, 7 mils each.

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