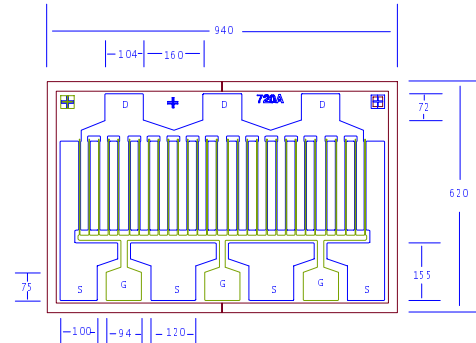


DATA SHEET
Low Distortion GaAs Power FET

- **+35.5dBm TYPICAL OUTPUT POWER**
- **17.5dB TYPICAL POWER GAIN AT 2GHz**
- **0.5 X 7200 MICRON RECESSED “MUSHROOM” GATE**
- **Si₃N₄ PASSIVATION AND PLATED HEAT SINK**
- **ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY**
- **Idss SORTED IN 120mA PER BIN RANGE**



Chip Thickness: 50 ± 10 microns
(with > 20 microns Gold Plated Heat Sink (PHS))
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 f= 4GHz	33.5	35.5 35.5		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f= 2GHz f= 4GHz	16.0	17.5 12.5		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f= 2GHz		36		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	1200	2040	2640	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	840	1100		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =20mA		-2.0	-3.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =7.2mA	-12	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =7.2mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		6		°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	-4V
I_{ds}	Drain Current	I _{dss}	2.4A
I_{gsf}	Forward Gate Current	180mA	30mA
P_{in}	Input Power	34dBm	@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	23 W	19 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.

EFA720A

DATA SHEET

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
0.500	0.954	-139.8	7.651	105.9	0.018	25.1	0.664	-173.7
1.000	0.950	-160.3	4.004	92.2	0.019	20.5	0.680	-176.3
1.500	0.949	-168.0	2.694	84.8	0.020	22.1	0.685	-177.2
2.000	0.949	-172.3	2.027	79.1	0.020	25.1	0.689	-177.6
2.500	0.949	-175.1	1.624	74.1	0.021	28.5	0.692	-177.7
3.000	0.949	-177.3	1.354	69.5	0.022	32.1	0.696	-177.8
3.500	0.950	-179.1	1.161	65.2	0.023	35.5	0.700	-177.8
4.000	0.950	179.4	1.016	61.0	0.024	38.8	0.704	-177.9
4.500	0.951	178.1	0.903	57.0	0.025	41.8	0.709	-177.9
5.000	0.951	176.9	0.812	53.1	0.026	44.6	0.715	-178.0
5.500	0.952	175.7	0.737	49.3	0.028	47.2	0.720	-178.1
6.000	0.953	174.7	0.675	45.6	0.029	49.5	0.726	-178.2
6.500	0.953	173.6	0.621	42.0	0.031	51.6	0.733	-178.4
7.000	0.954	172.7	0.575	38.5	0.033	53.5	0.739	-178.6
7.500	0.955	171.7	0.535	35.1	0.034	55.2	0.746	-178.8
8.000	0.956	170.7	0.499	31.8	0.036	56.7	0.753	-179.0
8.500	0.957	169.8	0.468	28.6	0.038	58.0	0.760	-179.3
9.000	0.957	168.9	0.439	25.5	0.040	59.1	0.767	-179.6
9.500	0.958	168.0	0.413	22.6	0.042	60.1	0.774	-180.0
10.000	0.959	167.1	0.389	19.7	0.044	61.0	0.782	179.6

Note: The data included 0.7 mils diameter Au bonding wires:
3 gate wires, 20 mils each; 3 drain wires, 12 mils each; 8 source wires, 7 mils each.