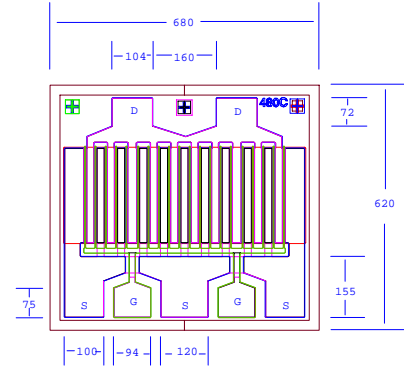


**DATA SHEET**
**Low Distortion GaAs Power FET**

- **+34.0dBm TYPICAL OUTPUT POWER**
- **18.0dB TYPICAL POWER GAIN AT 2GHz**
- **0.5 X 4800 MICRON RECESSED “MUSHROOM” GATE**
- **Si<sub>3</sub>N<sub>4</sub> PASSIVATION AND PLATED HEAT SINK**
- **ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY**
- **Idss SORTED IN 80mA PER BIN RANGE**



Chip Thickness: 75 ± 13 microns  
All Dimensions In Microns

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25 °C)**

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>P<sub>1dB</sub></b>	Output Power at 1dB Compression V <sub>ds</sub> =8V, I <sub>ds</sub> =50% I <sub>ds</sub>	32.0	34.0		dBm
<b>G<sub>1dB</sub></b>	Gain at 1dB Compression V <sub>ds</sub> =8V, I <sub>ds</sub> =50% I <sub>ds</sub>	16.0	18.0		dB
<b>PAE</b>	Gain at 1dB Compression V <sub>ds</sub> =8V, I <sub>ds</sub> =50% I <sub>ds</sub>		40		%
<b>I<sub>ds</sub></b>	Saturated Drain Current V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	800	1360	1760	mA
<b>G<sub>m</sub></b>	Transconductance V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	560	720		mS
<b>V<sub>p</sub></b>	Pinch-off Voltage V <sub>ds</sub> =3V, I <sub>ds</sub> =10mA		-2.0	-3.5	V
<b>BV<sub>gd</sub></b>	Drain Breakdown Voltage I <sub>gd</sub> =4.8mA	-12	-15		V
<b>BV<sub>gs</sub></b>	Source Breakdown Voltage I <sub>gs</sub> =4.8mA	-7	-14		V
<b>R<sub>th</sub></b>	Thermal Resistance (Au-Sn Eutectic Attach)		12		°C/W

**MAXIMUM RATINGS AT 25 °C**

SYMBOLS	PARAMETERS	ABSOLUTE <sup>1</sup>	CONTINUOUS <sup>2</sup>
<b>V<sub>ds</sub></b>	Drain-Source Voltage	12V	8V
<b>V<sub>gs</sub></b>	Gate-Source Voltage	-8V	-4V
<b>I<sub>ds</sub></b>	Drain Current	I <sub>ds</sub>	1.2A
<b>I<sub>gsf</sub></b>	Forward Gate Current	120mA	20mA
<b>P<sub>in</sub></b>	Input Power	32dBm	@3dB Compression
<b>T<sub>ch</sub></b>	Channel Temperature	175°C	150°C
<b>T<sub>stg</sub></b>	Storage Temperature	-65/175°C	-65/150°C
<b>P<sub>t</sub></b>	Total Power Dissipation	11.4 W	9.5 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.

# EFA480C

## 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	0.944	-119.8	9.669	115.5	0.023	33.8	0.515	-166.9
1.000	0.931	-149.2	5.352	97.6	0.026	24.2	0.553	-172.1
1.500	0.928	-161.0	3.646	88.3	0.027	23.1	0.564	-174.0
2.000	0.927	-167.6	2.756	81.6	0.027	24.4	0.569	-175.0
2.500	0.927	-172.0	2.213	75.9	0.028	26.6	0.574	-175.4
3.000	0.927	-175.4	1.849	70.7	0.029	29.2	0.580	-175.7
3.500	0.928	-178.1	1.587	66.0	0.030	31.9	0.585	-175.9
4.000	0.928	179.6	1.389	61.4	0.031	34.6	0.591	-176.0
4.500	0.929	177.5	1.235	57.0	0.032	37.2	0.597	-176.1
5.000	0.930	175.6	1.112	52.8	0.034	39.6	0.604	-176.3
5.500	0.931	173.9	1.010	48.7	0.035	41.9	0.612	-176.5
6.000	0.932	172.3	0.925	44.7	0.037	44.1	0.620	-176.7
6.500	0.933	170.7	0.853	40.8	0.039	46.0	0.628	-176.9
7.000	0.934	169.2	0.790	37.0	0.040	47.8	0.636	-177.2
7.500	0.935	167.7	0.735	33.3	0.042	49.4	0.645	-177.5
8.000	0.937	166.3	0.687	29.7	0.044	50.8	0.654	-177.9
8.500	0.938	164.9	0.643	26.2	0.047	52.1	0.664	-178.3
9.000	0.939	163.6	0.604	22.8	0.049	53.2	0.673	-178.8
9.500	0.941	162.3	0.569	19.5	0.051	54.1	0.683	-179.4
10.000	0.942	160.9	0.537	16.2	0.054	54.9	0.693	-179.9

Note: The data included 0.7 mils diameter Au bonding wires:  
2 gate wires, 20 mils each; 2 drain wires, 12 mils each; 6 source wires, 7 mils each.