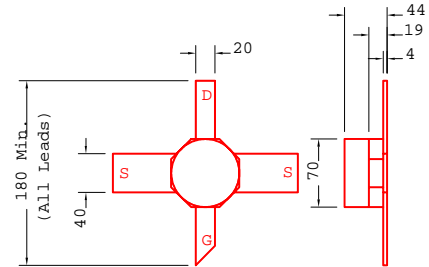


**DATA SHEET**
**Low Distortion GaAs Power FET**

- **NON-HERMETIC LOW COST CERAMIC 70mil PACKAGE**
- **+23.5dBm TYPICAL OUTPUT POWER**
- **7.0 dB TYPICAL POWER GAIN AT 12GHz**
- **0.3 X 800 MICRON RECESSED “MUSHROOM” GATE**
- **Si<sub>3</sub>N<sub>4</sub> PASSIVATION**
- **ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY**



All Dimensions In mils.

**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> =5V, I <sub>ds</sub> =50% I <sub>dss</sub>	21.5	23.5 23.5		dBm
<b>G<sub>1dB</sub></b>	Gain at 1dB Compression V <sub>ds</sub> =5V, I <sub>ds</sub> =50% I <sub>dss</sub>	6.0	7.0 4.5		dB
<b>PAE</b>	Power Added Efficiency at 1dB Compression V <sub>ds</sub> =5V, I <sub>ds</sub> =50% I <sub>dss</sub>		30		%
<b>I<sub>dss</sub></b>	Saturated Drain Current V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	130	210	300	mA
<b>G<sub>m</sub></b>	Transconductance V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	90	120		mS
<b>V<sub>p</sub></b>	Pinch-off Voltage V <sub>ds</sub> =3V, I <sub>ds</sub> =2.0mA		-2.0	-3.5	V
<b>BV<sub>gd</sub></b>	Drain Breakdown Voltage I <sub>gd</sub> =1.0mA	-10	-15		V
<b>BV<sub>gs</sub></b>	Source Breakdown Voltage I <sub>gs</sub> =1.0mA	-6	-14		V
<b>R<sub>th</sub></b>	Thermal Resistance		135*		°C/W

\* Overall R<sub>th</sub> depends on case mounting.

**MAXIMUM RATINGS AT 25 °C**

SYMBOLS	PARAMETERS	ABSOLUTE <sup>1</sup>	CONTINUOUS <sup>2</sup>
<b>V<sub>ds</sub></b>	Drain-Source Voltage	8V	5V
<b>V<sub>gs</sub></b>	Gate-Source Voltage	-5V	-4V
<b>I<sub>ds</sub></b>	Drain Current	I <sub>dss</sub>	185mA
<b>I<sub>gsf</sub></b>	Forward Gate Current	20mA	4mA
<b>P<sub>in</sub></b>	Input Power	22dBm	@ 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	1.1W	0.9W

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.

# EFA080A-70

## 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
1.0	0.909	-42.3	6.038	146.2	0.032	59.9	0.452	-26.1
2.0	0.826	-77.0	5.067	118.9	0.049	45.3	0.405	-47.4
3.0	0.766	-104.2	4.189	96.7	0.059	33.8	0.383	-64.2
4.0	0.724	-128.4	3.590	77.3	0.064	26.9	0.366	-77.3
5.0	0.691	-148.9	3.129	59.7	0.068	21.6	0.338	-90.8
6.0	0.672	-163.0	2.766	44.3	0.072	18.6	0.317	-108.5
7.0	0.653	-178.5	2.487	29.4	0.075	15.9	0.322	-122.3
8.0	0.639	167.4	2.266	14.8	0.079	14.7	0.306	-136.5
9.0	0.645	144.9	2.073	-1.1	0.087	11.4	0.308	-148.4
10.0	0.658	126.6	1.885	-16.7	0.096	5.8	0.317	-166.1
11.0	0.655	116.0	1.793	-31.1	0.109	-0.3	0.337	171.2
12.0	0.667	101.8	1.690	-46.7	0.124	-7.8	0.366	150.2
13.0	0.719	84.9	1.512	-62.2	0.133	-17.2	0.387	131.4
14.0	0.752	70.5	1.334	-76.1	0.138	-25.8	0.419	116.3
15.0	0.754	57.6	1.230	-91.4	0.148	-37.2	0.480	98.5
16.0	0.763	43.0	1.113	-108.5	0.152	-49.6	0.527	78.5
17.0	0.760	32.5	0.951	-120.4	0.153	-55.6	0.535	66.4
18.0	0.779	25.1	0.886	-129.9	0.169	-66.8	0.584	58.5
19.0	0.788	10.8	0.815	-144.0	0.166	-77.8	0.627	45.7
20.0	0.818	-1.5	0.742	-158.2	0.169	-89.6	0.679	32.6
21.0	0.833	-8.6	0.680	-169.6	0.171	-99.0	0.684	22.4
22.0	0.808	-17.7	0.639	179.7	0.181	-108.3	0.671	15.3
23.0	0.803	-34.1	0.601	164.5	0.188	-122.5	0.659	-0.8
24.0	0.820	-48.4	0.550	147.3	0.191	-139.2	0.662	-20.3
25.0	0.788	-59.1	0.524	135.1	0.202	-151.7	0.666	-31.0
26.0	0.782	-73.7	0.538	121.1	0.236	-164.9	0.639	-45.2