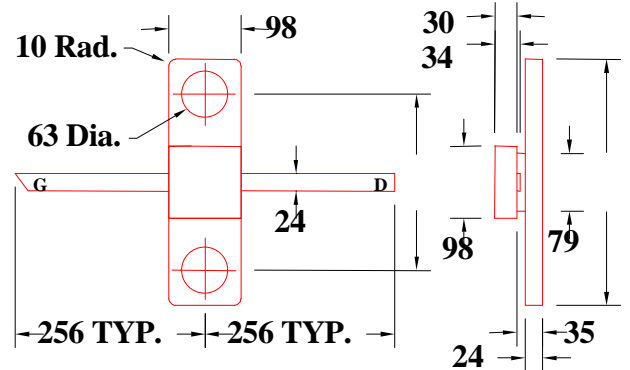


**DATA SHEET**
**Low Distortion GaAs Power FET**

- HERMETIC 100mil CERAMIC FLANGE PACKAGE
- +31.0dBm TYPICAL OUTPUT POWER
- HIGH BV<sub>gd</sub> FOR 10V BIAS
- 7.0dB TYPICAL POWER GAIN AT 8GHz
- 0.3 X 2400 MICRON RECESSED “MUSHROOM” GATE
- Si<sub>3</sub>N<sub>4</sub> PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY


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

All Dimensions In mils

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>P<sub>1dB</sub></b>	Output Power at 1dB Compression V <sub>ds</sub> =10V, I <sub>ds</sub> =50% I <sub>ds</sub> f=8GHz	29.0	31.0		dBm
<b>G<sub>1dB</sub></b>	Gain at 1dB Compression V <sub>ds</sub> =10V, I <sub>ds</sub> =50% I <sub>ds</sub> f=8GHz	5.5	7.0		dB
<b>PAE</b>	Power Added Efficiency at 1dB Compression V <sub>ds</sub> =10V, I <sub>ds</sub> =50% I <sub>ds</sub> f=8GHz		30		%
<b>I<sub>ds</sub></b>	Saturated Drain Current V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	320	520	720	mA
<b>G<sub>m</sub></b>	Transconductance V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	200	280		mS
<b>V<sub>p</sub></b>	Pinch-off Voltage V <sub>ds</sub> =3V, I <sub>ds</sub> =6mA		-2.5	-4.0	V
<b>BV<sub>gd</sub></b>	Drain Breakdown Voltage I <sub>gd</sub> =2.4mA	-15	-20		V
<b>BV<sub>gs</sub></b>	Source Breakdown Voltage I <sub>gs</sub> =2.4mA	-10	-17		V
<b>R<sub>th</sub></b>	Thermal Resistance		22*		°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	14V	10V
<b>V<sub>gs</sub></b>	Gate-Source Voltage	-8V	-4.5V
<b>I<sub>ds</sub></b>	Drain Current	I <sub>ds</sub>	520mA
<b>I<sub>gsf</sub></b>	Forward Gate Current	60mA	10mA
<b>P<sub>in</sub></b>	Input Power	29dBm	@ 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	6.3W	5.2W

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.

# EFC240B-100F

## DATA SHEET

### Low Distortion GaAs Power FET

#### S-PARAMETERS

10V, 1/2 Idss

FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
1.0	0.996	-103.9	5.570	115.3	0.041	31.6	0.374	-142.9
2.0	0.872	-125.4	3.730	95.1	0.051	27.3	0.315	-140.3
3.0	0.851	-147.2	2.763	74.4	0.056	21.3	0.331	-149.8
4.0	0.834	-165.2	2.222	55.9	0.061	18.4	0.340	-159.8
5.0	0.826	178.5	1.866	38.1	0.066	13.8	0.349	-172.8
6.0	0.812	166.4	1.593	21.8	0.072	9.8	0.372	169.2
7.0	0.807	153.3	1.386	6.2	0.078	5.4	0.416	157.7
8.0	0.812	143.6	1.211	-8.3	0.085	1.0	0.473	145.9
9.0	0.817	130.0	1.062	-22.6	0.092	-5.5	0.506	139.9
10.0	0.814	119.8	0.954	-35.9	0.100	-12.3	0.517	130.4
11.0	0.802	112.7	0.902	-48.3	0.114	-18.3	0.545	120.7
12.0	0.780	101.6	0.876	-61.5	0.134	-25.8	0.553	114.6
13.0	0.773	85.5	0.827	-76.4	0.154	-36.2	0.539	104.8
14.0	0.774	72.0	0.777	-91.7	0.175	-48.9	0.537	87.1
15.0	0.769	60.1	0.729	-107.9	0.200	-62.8	0.548	68.8
16.0	0.743	47.0	0.679	-122.4	0.224	-76.1	0.532	56.6
17.0	0.726	37.1	0.668	-134.3	0.266	-87.8	0.507	50.1
18.0	0.691	28.3	0.676	-148.3	0.324	-102.7	0.454	38.1
19.0	0.634	19.5	0.701	-164.1	0.404	-121.0	0.371	26.5
20.0	0.638	11.5	0.743	176.6	0.509	-144.5	0.217	46.1
21.0	0.663	5.4	0.750	153.7	0.609	-174.3	0.246	89.1
22.0	0.675	-3.3	0.734	131.9	0.668	154.5	0.426	72.3
23.0	0.705	-23.1	0.716	107.0	0.680	118.5	0.593	44.4
24.0	0.777	-47.3	0.657	83.2	0.573	80.0	0.584	3.4
25.0	0.752	-68.3	0.615	60.7	0.343	54.8	0.332	-83.8
26.0	0.630	-114.0	0.586	37.6	0.390	65.2	0.442	130.4