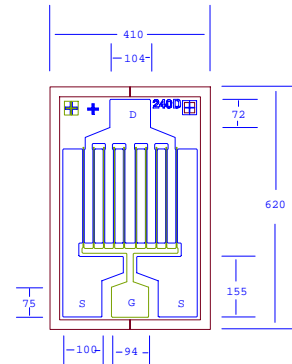


PRELIMINARY DATA SHEET
Low Distortion GaAs Power FET

- +31.0dBm TYPICAL OUTPUT POWER
- 18.5dB TYPICAL POWER GAIN AT 2GHz
- HIGH BV_{gd} FOR 10V BIAS
- 0.5 X 2400 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- Id_{ss} SORTED IN 40mA PER BIN RANGE



Chip Thickness: 75 ± 13 microns
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 f= 2GHz V _{ds} =10V, I _{ds} =50% Id _{ss}	29.0	31.0		dBm
G_{1dB}	Gain at 1dB Compression f= 2GHz V _{ds} =10V, I _{ds} =50% Id _{ss}	16.0	18.5		dB
PAE	Power Added Efficiency at 1dB Compression f=2GHz V _{ds} =10V, I _{ds} =50% Id _{ss}		45		%
Id_{ss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	320	480	720	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	200	280		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =6mA		-2.5	-4.0	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =2.4mA	-15	-20		V
BV_{gs}	Source Breakdown Voltage I _{gs} =2.4mA	-10	-17		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		23		°C/W

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	14V	10V
V_{gs}	Gate-Source Voltage	-8V	-4.5V
I_{ds}	Drain Current	Id _{ss}	500mA
I_{gsf}	Forward Gate Current	60mA	10mA
P_{in}	Input Power	29dBm	@ 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	6.0W	5.0W

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.

EFC240D

PRELIMINARY DATA SHEET

Low Distortion GaAs Power FET

S-PARAMETERS

10V, 1/2 Idss

Freq GHz	S11 Mag	S11 Ang	S21 Mag	S21 Ang	S12 Mag	S12 Ang	S22 Mag	S22 Ang
0.500	0.962	-66.3	11.912	141.2	0.025	55.9	0.239	-129.1
1.000	0.933	-106.1	8.577	117.9	0.036	36.9	0.337	-144.0
1.500	0.859	-121.0	6.591	108.2	0.042	32.6	0.303	-146.3
2.000	0.860	-136.6	5.272	97.9	0.044	26.7	0.330	-151.9
2.500	0.849	-147.5	4.344	89.7	0.046	22.6	0.343	-155.1
3.000	0.848	-155.8	3.689	82.9	0.047	20.8	0.354	-157.6
3.500	0.846	-162.2	3.195	76.9	0.047	19.4	0.365	-159.4
4.000	0.846	-167.3	2.809	71.5	0.048	18.7	0.373	-160.6
4.500	0.849	-172.0	2.472	66.5	0.047	18.7	0.389	-162.9
5.000	0.856	-176.1	2.229	61.8	0.048	18.6	0.399	-163.5
5.500	0.853	-179.3	2.024	57.2	0.048	18.8	0.411	-164.5
6.000	0.855	177.4	1.852	52.9	0.048	20.4	0.422	-165.6
6.500	0.857	174.4	1.708	48.7	0.048	19.7	0.434	-165.8
7.000	0.861	171.7	1.577	44.8	0.049	20.7	0.444	-166.5
7.500	0.861	169.3	1.466	41.0	0.049	20.7	0.457	-167.7
8.000	0.865	167.0	1.375	37.2	0.049	21.7	0.468	-168.4
8.500	0.869	165.2	1.288	33.7	0.050	22.1	0.477	-169.7
9.000	0.873	163.5	1.213	30.1	0.050	24.0	0.487	-171.2
9.500	0.877	161.9	1.146	26.8	0.052	24.7	0.500	-172.4
10.000	0.876	160.4	1.085	23.3	0.053	25.4	0.509	-174.2

Note: The data included 0.7 mils diameter Au bonding wires:
1 gate wires, 20 mils each; 2 drain wires, 12 mils each; 4 source wires, 7 mils each.