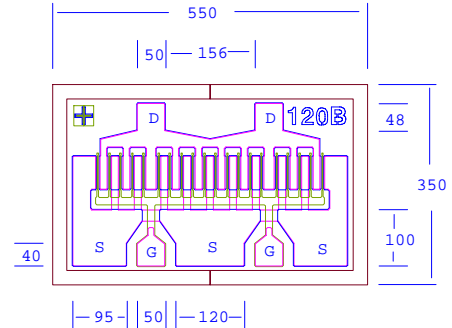


PRELIMINARY DATA SHEET
Low Distortion GaAs Power FET

- +28.0dBm TYPICAL OUTPUT POWER
- 9.5dB TYPICAL POWER GAIN AT 12GHz
- HIGH BV_{gd} FOR 10V BIAS
- 0.3 X 1200 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- Id_{ss} SORTED IN 20mA 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 V _{ds} =10V, I _{ds} =50% Id _{ss}	26.0	28.0 28.0		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =10V, I _{ds} =50% Id _{ss}	7.5	9.5 7.0		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =10V, I _{ds} =50% Id _{ss}		33		%
Id_{ss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	160	260	360	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	100	140		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =3.0 mA		-2.5	-4.0	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.2mA	-15	-20		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.2mA	-10	-17		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		40		°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}	285mA
I_{gsf}	Forward Gate Current	30mA	5mA
P_{in}	Input Power	26dBm	@ 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	3.4W	2.8W

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.

EFC120B

PRELIMINARY DATA SHEET

Low Distortion GaAs Power FET

S-PARAMETERS

10V, 1/2 Idss

Freq	S11	S11	S21	S21	S12	S12	S22	S22
GHz	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
1.000	0.970	-47.8	6.538	148.7	0.034	62.7	0.293	-35.9
2.000	0.928	-83.3	5.302	125.7	0.056	44.8	0.284	-63.5
3.000	0.899	-108.1	4.250	108.6	0.067	31.7	0.281	-83.1
4.000	0.884	-125.3	3.482	95.4	0.072	22.4	0.290	-95.4
5.000	0.876	-138.0	2.884	84.1	0.073	15.7	0.296	-107.6
6.000	0.868	-147.5	2.462	74.5	0.073	11.0	0.323	-114.8
7.000	0.871	-155.2	2.141	66.3	0.073	6.4	0.354	-119.3
8.000	0.866	-161.2	1.889	58.7	0.072	3.1	0.384	-123.7
9.000	0.868	-166.6	1.681	51.6	0.070	0.3	0.415	-127.2
10.000	0.871	-171.5	1.516	44.7	0.068	-2.2	0.445	-130.5
11.000	0.874	-176.7	1.380	38.1	0.066	-4.5	0.475	-134.0
12.000	0.878	179.1	1.263	31.7	0.064	-6.4	0.507	-137.2
13.000	0.878	175.3	1.159	25.4	0.063	-8.0	0.532	-140.6
14.000	0.884	172.1	1.074	19.5	0.062	-8.3	0.561	-144.4
15.000	0.885	168.4	0.992	13.5	0.060	-9.9	0.581	-148.3
16.000	0.890	164.3	0.926	6.6	0.059	-11.4	0.599	-152.8
17.000	0.890	160.9	0.862	0.5	0.059	-13.3	0.621	-158.4
18.000	0.895	158.2	0.807	-5.3	0.059	-14.0	0.644	-163.6
19.000	0.898	155.5	0.754	-11.4	0.058	-14.0	0.662	-168.7
20.000	0.905	152.1	0.703	-17.3	0.058	-13.8	0.676	-173.6
21.000	0.911	143.9	0.647	-23.3	0.056	-14.3	0.699	-172.1
22.000	0.912	141.1	0.595	-28.0	0.056	-13.1	0.713	-177.2
23.000	0.922	139.7	0.549	-33.2	0.055	-13.0	0.748	178.7
24.000	0.919	138.2	0.505	-36.9	0.054	-10.6	0.765	176.4
25.000	0.923	137.3	0.460	-40.3	0.054	-6.3	0.787	173.6
26.000	0.930	135.8	0.442	-44.3	0.056	-3.4	0.799	171.0

Note: The data included 0.7 mils diameter Au bonding wires:
2 gate wires, 15 mils each; 2 drain wires, 20 mils each; 6 source wires, 7 mils each.