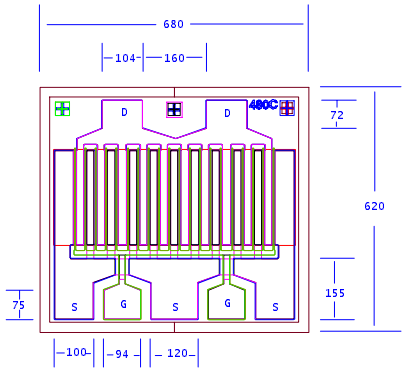
Excelics

EFC480C

PRELIMINARY DATA SHEET

Low Distortion GaAs Power FET

- **+33.5dBm TYPICAL OUTPUT POWER**
- **18.0dB TYPICAL POWER GAIN AT 2GHz**
- **High BVgd FOR 10V BIAS**
- **0.5 X 4800 MICRON RECESSED "MUSHROOM" GATE**
- **Si_3N_4 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_a = 25 °C)

SYMBOLS	PARAMETERS/TEST CONDITIONS		MIN	TYP	MAX	UNIT
P_{1dB}	Output Power at 1dB Compression Vds=8V, Ids=50% Idss	f= 2GHz f= 4GHz	32.0	33.5 33.5		dBm
G_{1dB}	Gain at 1dB Compression Vds=8V, Ids=50% Idss	f= 2GHz f= 4GHz	16.0	18.0 12.5		dB
PAE	Gain at 1dB Compression Vds=8V, Ids=50% Idss	f= 2GHz		40		%
Idss	Saturated Drain Current Vds=3V, Vgs=0V		640	960	1440	mA
Gm	Transconductance Vds=3V, Vgs=0V		200	560		mS
Vp	Pinch-off Voltage Vds=3V, Ids=10mA			-2.5	-4.0	V
BVgd	Drain Breakdown Voltage Igd=4.8mA		-15	-20		V
BVgs	Source Breakdown Voltage Igs=4.8mA		-10	-17		V
Rth	Thermal Resistance (Au-Sn Eutectic Attach)			12		°C/W

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE [1]	CONTINUOUS[2]
Vds	Drain-Source Voltage	14V	10V
Vgs	Gate-Source Voltage	-8V	-4.5V
Ids	Drain Current	Idss	960mA
Igsf	Forward Gate Current	120mA	20mA
Pin	Input Power	32dBm	@3dB Compression
Tch	Channel Temperature	175°C	150°C
Tstg	Storage Temperature	-65/175°C	-65/150°C
Pt	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.

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S-PARAMETERS

10V, 1/2 Idss

Freq	---S11---		---S21---		---S12---		---S22---	
GHz	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
0.500	0.937	-106.2	10.161	120.8	0.022	35.8	0.518	-166.8
1.000	0.897	-134.9	6.389	104.7	0.028	26.4	0.505	-168.3
1.500	0.897	-151.8	4.443	93.5	0.028	21.5	0.524	-171.2
2.000	0.897	-161.0	3.370	85.4	0.029	19.0	0.533	-173.0
2.500	0.898	-167.2	2.695	79.2	0.030	20.2	0.539	-173.8
3.000	0.895	-171.8	2.231	73.9	0.030	19.5	0.542	-174.2
3.500	0.890	-175.4	1.894	69.4	0.030	20.9	0.542	-173.9
4.000	0.850	-176.6	1.654	66.9	0.026	27.6	0.560	-172.2
4.500	0.901	177.7	1.535	59.9	0.032	23.1	0.607	-169.5
5.000	0.899	174.5	1.357	55.2	0.031	25.8	0.617	-170.8
5.500	0.900	172.5	1.208	51.4	0.031	28.1	0.620	-171.8
6.000	0.901	170.8	1.087	48.2	0.031	30.4	0.619	-172.8
6.500	0.902	169.6	0.999	45.8	0.032	32.0	0.616	-172.6
7.000	0.893	168.8	0.941	43.3	0.033	37.1	0.637	-171.2
7.500	0.904	170.7	0.916	39.2	0.037	34.8	0.669	-172.8
8.000	0.919	169.5	0.840	34.2	0.036	35.0	0.681	-175.0
8.500	0.918	169.2	0.783	31.0	0.038	36.6	0.693	-176.9
9.000	0.924	168.7	0.729	27.9	0.037	37.6	0.701	-178.6
9.500	0.927	168.0	0.687	24.5	0.038	39.8	0.706	-179.3
10.000	0.932	167.3	0.647	22.3	0.040	42.4	0.716	179.8

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.