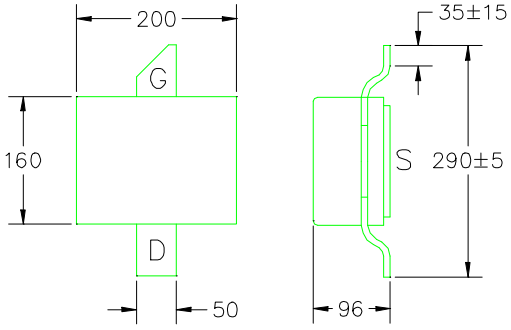
Excelics EPA480C-CP083

PRELIMINARY DATA SHEET

High Efficiency Heterojunction Power FET

- **NON-HERMETIC SURFACE MOUNT 160MIL METAL CERAMIC PACKAGE**
- **+35.5dBm TYPICAL OUTPUT POWER**
- **17.5dB TYPICAL POWER GAIN AT 2GHz**
- **0.4 X 4800 MICRON RECESSED "MUSHROOM" GATE**
- **Si_3N_4 PASSIVATION**
- **ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH RELIABILITY**



All Dimensions In Mils
Tolerance ±3

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	34.0	35.5 35.5		dBm
G_{1dB}	Gain at 1dB Compression Vds=8V, Ids=50% Idss	f= 2GHz f= 4GHz	16.0	17.5 12.5		dB
PAE	Power Added Efficiency at 1dB Compression Vds=8V, Ids=50% Idss	f=2GHz		47		%
Idss	Saturated Drain Current Vds=3V, Vgs=0V		880	1440	1880	mA
Gm	Transconductance Vds=3V, Vgs=0V		960	1560		mS
Vp	Pinch-off Voltage Vds=3V, Ids=14mA			-1.0	-2.5	V
BVgd	Drain Breakdown Voltage Igd=4.8mA		-11	-15		V
BVgs	Source Breakdown Voltage Igs=4.8mA		-7	-14		V
Rth	Thermal Resistance (Au-Sn Eutectic Attach)			12*		°C/W

***** Overall Rth depends on case mounting.

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE[1]	CONTINUOUS[2]
Vds	Drain-Source Voltage	12V	8V
Vgs	Gate-Source Voltage	-8V	-3V
Ids	Drain Current	Idss	1.2A
Igsf	Forward Gate Current	240mA	40mA
Pin	Input Power	33dBm	@ 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.

Excelics Semiconductor, Inc., 2908 Scott Blvd., Santa Clara, CA 95054
Phone: (408) 970-8664 Fax: (408) 970-8998 Web Site: www.excelics.com

EPA480C-CP083

PRILIMINARY DATA SHEET

High Efficiency Heterojunction Power FET

S-PARAMETERS

8V, 1/2 Idss

FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
(GHz)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.5	0.927	-152.0	13.045	93.2	0.013	24.5	0.613	-175.3
1.0	0.935	-175.5	6.698	73.6	0.016	25.5	0.604	178.5
1.5	0.865	170.4	5.609	62.3	0.024	27.8	0.513	171.1
2.0	0.855	159.1	4.341	49.9	0.028	26.7	0.504	166.3
2.5	0.840	149.7	3.652	38.1	0.035	22.6	0.481	162.4
3.0	0.824	139.9	3.298	25.6	0.042	18.5	0.442	158.4
3.5	0.800	127.3	3.085	11.6	0.051	9.5	0.397	153.0
4.0	0.773	111.4	2.921	-4.4	0.061	-1.5	0.356	144.6
4.5	0.759	92.0	2.749	-21.9	0.070	-13.2	0.326	132.1
5.0	0.757	71.4	2.552	-40.0	0.079	-26.5	0.315	117.0
5.5	0.765	50.9	2.346	-58.1	0.086	-40.2	0.315	100.4
6.0	0.777	31.5	2.154	-76.1	0.092	-54.4	0.314	83.0
6.5	0.788	13.0	2.020	-92.7	0.098	-66.9	0.272	64.5
7.0	0.810	-9.3	1.885	-113.5	0.101	-83.5	0.287	38.7
7.5	0.849	-32.1	1.647	-135.8	0.098	-102.0	0.351	7.0
8.0	0.890	-50.8	1.328	-155.9	0.088	-117.3	0.448	-18.9
8.5	0.924	-63.7	1.049	-171.9	0.076	-130.9	0.556	-35.7
9.0	0.932	-72.7	0.828	175.1	0.067	-138.7	0.629	-47.0
9.5	0.939	-79.6	0.695	164.4	0.064	-151.0	0.663	-56.0
10.0	0.955	-88.6	0.622	155.8	0.060	-160.5	0.701	-59.3