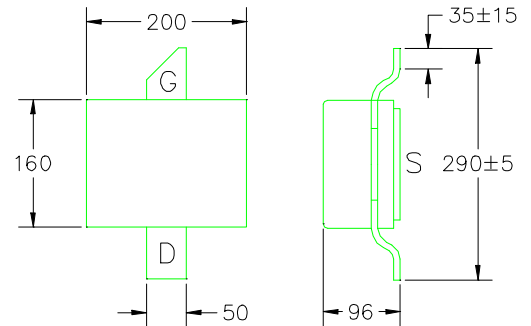


PRELIMINARY DATA SHEET
High Efficiency Heterojunction Power FET

- **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**
- **Si₃N₄ PASSIVATION**
- **ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH RELIABILITY**



All Dimensions In Mils
Tolerance ±3

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P_{1dB}	Output Power at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f= 2GHz f= 4GHz	34.0	35.5 35.5		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f= 2GHz f= 4GHz	16.0	17.5 12.5		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=2GHz		47		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	880	1440	1880	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	960	1560		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =14mA		-1.0	-2.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =4.8mA	-11	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =4.8mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		12*		°C/W

* Overall R_{th} depends on case mounting.

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	12V	8V
V_{gs}	Gate-Source Voltage	-8V	-3V
I_{ds}	Drain Current	I _{dss}	1.2A
I_{gsf}	Forward Gate Current	240mA	40mA
P_{in}	Input Power	33dBm	@ 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	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.

EPA480C-CP083

PRILIMINARY DATA SHEET

High Efficiency Heterojunction Power FET

S-PARAMETERS

8V, 1/2 Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	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