



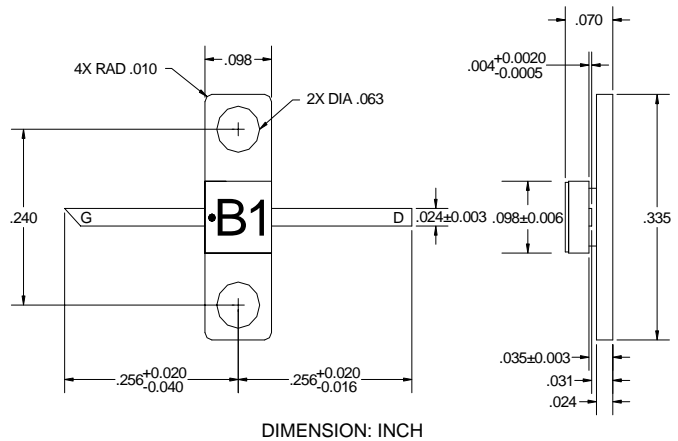
EPA080A-100F

ISSUED 08/10/2005

High Efficiency Heterojunction Power FET

FEATURES

- HERMETIC 100mil CERAMIC FLANGE PACKAGE
- +27.5dBm TYPICAL OUTPUT POWER
- 8.5dB TYPICAL POWER GAIN AT 12GHz
- Si3N4 PASSIVATION
- ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH RELIABILITY



ELECTRICAL CHARACTERISTICS (T_a = 25°C)



Caution! ESD sensitive device.

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P _{1dB}	Output Power at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz	26.0	27.5		dBm
G _{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz	7.0	8.5		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz		42		%
I _{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	130	240	320	mA
G _m	Transconductance V _{ds} =3V, V _{gs} =0V	160	260		mS
V _p	Pinch-off Voltage V _{ds} =3V, I _{ds} =2.5mA		-1.0	-2.5	V
BV _{gd}	Drain Breakdown Voltage I _{gd} =1.0mA	-11	-15		V
BV _{gs}	Source Breakdown Voltage I _{gs} =1.0mA	-7	-14		V
R _{th}	Thermal Resistance		58*		°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}	250mA
I _{gsf}	Forward Gate Current	40mA	7mA
P _{in}	Input Power	25dBm	@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	2.5W	2.0W

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.

Specifications are subject to change without notice.

Excelics Semiconductor, Inc. 310 De Guigne Drive, Sunnyvale, CA 94085
Phone: 408-737-1711 Fax: 408-737-1868 Web: www.excelics.com

page 1 of 2
Revised August 2005



EPA080A-100F

ISSUED 08/10/2005

High Efficiency Heterojunction Power FET

S-PARAMETERS

FREQ (GHz)	S11 ---		8V, 1/2 Idss				S22 ---	
	MAG	ANG	S21 ---		S12 ---		MAG	ANG
			MAG	ANG	MAG	ANG		
1.0	0.891	-72.9	13.691	129.5	0.027	52.8	0.442	-43.0
2.0	0.793	-113.6	9.350	99.6	0.037	34.9	0.383	-64.0
3.0	0.745	-136.8	6.955	79.3	0.041	27.7	0.363	-76.6
4.0	0.713	-157.6	5.601	61.6	0.046	21.5	0.360	-87.0
5.0	0.693	-176.8	4.738	44.8	0.050	16.0	0.349	-95.4
6.0	0.681	170.3	4.131	29.3	0.055	9.8	0.312	-109.7
7.0	0.669	156.6	3.653	13.7	0.059	2.2	0.302	-128.5
8.0	0.655	143.8	3.254	-1.5	0.063	-4.8	0.317	-147.6
9.0	0.667	124.6	2.867	-17.2	0.066	-13.2	0.346	-152.2
10.0	0.679	112.0	2.584	-32.1	0.073	-21.9	0.352	-160.8
11.0	0.650	107.2	2.466	-47.5	0.083	-32.5	0.369	175.6
12.0	0.594	98.6	2.339	-63.8	0.094	-43.9	0.416	159.0
13.0	0.589	80.7	2.163	-79.5	0.105	-54.9	0.417	158.1
14.0	0.601	63.9	2.034	-96.0	0.122	-68.8	0.381	150.6
15.0	0.567	51.1	1.903	-116.3	0.141	-85.8	0.405	121.5
16.0	0.529	41.2	1.756	-135.6	0.162	-102.1	0.452	104.0
17.0	0.531	34.3	1.672	-152.7	0.196	-116.3	0.461	105.2
18.0	0.512	28.0	1.588	-172.7	0.246	-133.5	0.489	96.7
19.0	0.504	23.8	1.406	166.8	0.299	-153.4	0.560	75.9
20.0	0.616	14.9	1.332	148.0	0.401	-173.7	0.629	65.9

Specifications are subject to change without notice.

Excelics Semiconductor, Inc. 310 De Guigne Drive, Sunnyvale, CA 94085
Phone: 408-737-1711 Fax: 408-737-1868 Web: www.excelics.com

page 2 of 2
Revised August 2005