

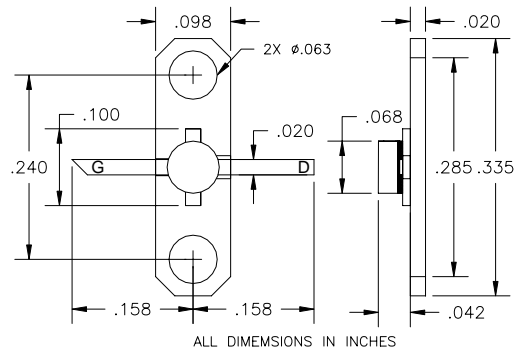


EPA160A-100P

UPDATED 02/15/2005

High Efficiency Heterojunction Power FET

- NON-HERMETIC 100MIL METAL FLANGE PACKAGE
- +31.0dBm TYPICAL OUTPUT POWER
- 11.5dB TYPICAL POWER GAIN AT 12GHz
- 0.3 X 1600 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH RELIABILITY



ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P_{1dB}	Output Power at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{ds}		f= 12GHz 31.0 f= 18GHz 31.0		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{ds}		f= 12GHz 11.5 f= 18GHz 8.0		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8 V, I _{ds} =50% I _{ds}		41		%
I_{ds}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	290	480	660	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	320	500		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =4.5mA		-1.0	-2.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.6mA	-13	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.6mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		33*		°C/W

- Overall R_{th} depends on case mounting.

ABSOLUTE MAXIMUM RATINGS FOR CONTINUOUS OPERATION AT 25°C

SYMBOLS	PARAMETERS	CONTINUOUS ^{1,2}
V_{ds}	Drain-Source Voltage	8V
V_{gs}	Gate-Source Voltage	-3V
I_{ds}	Drain Current	435mA
I_{gsf}	Forward Gate Current	14mA
P_{in}	Input Power	@ 3dB Compression
T_{ch}	Channel Temperature	150 °C
T_{stg}	Storage Temperature	-65 to +150 °C
P_t	Total Power Dissipation	3.4W

- 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.

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 Revised February 2005



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S-PARAMETERS								
8V, 1/2 Idss								
FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1	0.897	-97.83	12.5419	118.91	0.0319	38.76	0.3246	-79.02
2	0.8556	-138.32	7.7689	90.57	0.0388	17.85	0.3218	-106.48
3	0.8463	-161.09	5.4611	71.1	0.0401	7.73	0.3355	-120.16
4	0.8519	-175.22	4.1206	55.4	0.0391	0.48	0.3633	-132.53
5	0.858	174.42	3.3447	41.57	0.0372	-5.8	0.4116	-142.91
6	0.8508	162.41	2.8519	28.46	0.037	-9.6	0.4552	-150.15
7	0.8567	148.39	2.4307	15.06	0.0344	-12.94	0.4795	-154.4
8	0.8622	140.8	2.1652	1.92	0.0338	-16.52	0.4727	-168.28
9	0.8786	133.15	1.8723	-10.15	0.0333	-18.18	0.5245	178.68
10	0.8892	121.59	1.6132	-21.93	0.0319	-26.17	0.589	174.2
11	0.9018	110.17	1.4439	-34.13	0.0296	-28.49	0.5945	167.81
12	0.9046	103.54	1.3256	-46.47	0.0298	-32.38	0.5934	153.54
13	0.8958	100.63	1.1794	-56.99	0.0319	-33	0.6502	139.78
14	0.8898	91.61	1.0351	-65.22	0.0327	-39.8	0.7159	139.11
15	0.9201	79.78	0.9638	-76.98	0.0344	-44.85	0.6957	135.32
16	0.9115	72.91	0.8571	-88.86	0.0329	-50.1	0.6575	123.22
17	0.921	76.49	0.8482	-96.06	0.0386	-53.04	0.7777	108.19
18	0.9757	69.22	0.8496	-105.81	0.0421	-60.11	0.7903	105.94
19	0.9157	54.5	0.7847	-117.28	0.0415	-68.14	0.774	107.95
20	0.887	46.41	0.7575	-129.46	0.0449	-76.32	0.7413	91.66

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