

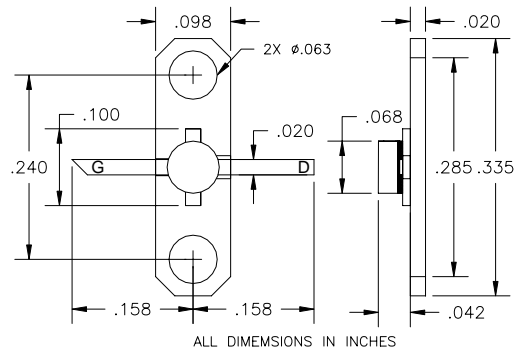


# EPA240D-100P

UPDATED 11/14/2005

## High Efficiency Heterojunction Power FET

- NON-HERMETIC 100MIL METAL FLANGE PACKAGE
- +33 dBm TYPICAL OUTPUT POWER
- 20 dB TYPICAL POWER GAIN AT 2GHz
- 0.4 X 2400 MICRON RECESSED “MUSHROOM” GATE
- Si<sub>3</sub>N<sub>4</sub> PASSIVATION
- ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH RELIABILITY



### ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25 °C)

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>P<sub>1dB</sub></b>	Output Power at 1dB Compression V <sub>ds</sub> =8V, I <sub>ds</sub> =50% I <sub>ds</sub>	f= 2GHz 31.0	f= 4GHz 33.0 33.0		dBm
<b>G<sub>1dB</sub></b>	Gain at 1dB Compression V <sub>ds</sub> =8V, I <sub>ds</sub> =50% I <sub>ds</sub>	f= 2GHz 18.5	f= 4GHz 20.0 14.5		dB
<b>PAE</b>	Power Added Efficiency at 1dB Compression V <sub>ds</sub> =8 V, I <sub>ds</sub> =50% I <sub>ds</sub>		f=2GHz 55		%
<b>I<sub>ds</sub></b>	Saturated Drain Current V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	440	720	940	mA
<b>G<sub>m</sub></b>	Transconductance V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	480	760		mS
<b>V<sub>p</sub></b>	Pinch-off Voltage V <sub>ds</sub> =3V, I <sub>ds</sub> =6mA		-1.0	-2.5	V
<b>BV<sub>gd</sub></b>	Drain Breakdown Voltage I <sub>gd</sub> =2.4mA	-11	-15		V
<b>BV<sub>gs</sub></b>	Source Breakdown Voltage I <sub>gs</sub> =2.4mA	-7	-14		V
<b>R<sub>th</sub></b>	Thermal Resistance (Au-Sn Eutectic Attach)		26*		°C/W

\* Overall R<sub>th</sub> depends on case mounting.

### ABSOLUTE MAXIMUM RATING<sup>1,2</sup>

SYMBOLS	PARAMETERS	ABSOLUTE <sup>1</sup>	CONTINUOUS <sup>2</sup>
<b>V<sub>ds</sub></b>	Drain-Source Voltage	12V	8V
<b>V<sub>gs</sub></b>	Gate-Source Voltage	-8V	-3V
<b>I<sub>ds</sub></b>	Drain Current	I <sub>ds</sub>	620mA
<b>I<sub>gsf</sub></b>	Forward Gate Current	120mA	20mA
<b>P<sub>in</sub></b>	Input Power	30 dBm	@ 3dB Compression
<b>T<sub>ch</sub></b>	Channel Temperature	175 °C	150 °C
<b>T<sub>stg</sub></b>	Storage Temperature	-65 to +175 °C	-65 to +150 °C
<b>P<sub>t</sub></b>	Total Power Dissipation	6.0W	5.0W

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.

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