



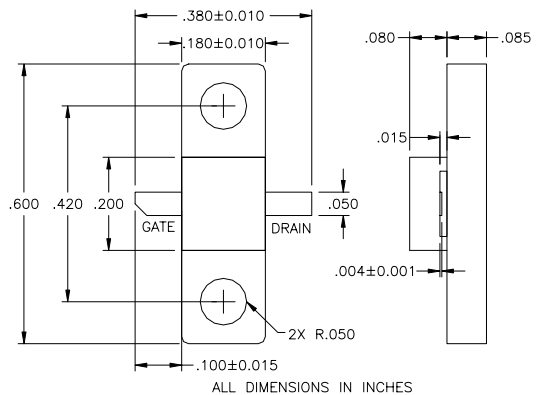
EPA680A-180F

ISSUED 05/02/2006

High Efficiency Heterojunction Power FET

FEATURES

- Non-Hermetic 180mil Metal Flange Package
- +36.5 dBm Typical Output Power
- 16.0 dB Typical Power Gain at 2GHz
- 0.4 x 6800 Micron Recessed "Mushroom" Gate
- Si₃N₄ Passivation
- Advanced Epitaxial Heterojunction Profile Provides Extra High Power Efficiency and High Reliability



ELECTRICAL CHARACTERISTICS (T_a = 25°C)



Caution! ESD sensitive device.

SYMBOL	PARAMETERS/TEST CONDITIONS ¹	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression V _{DS} = 8 V, I _{DS} ≈ 50% I _{DSS} f = 2GHz f = 4GHz	35.0	36.5 36.5		dBm
G_{1dB}	Gain at 1dB Compression V _{DS} = 8 V, I _{DS} ≈ 50% I _{DSS} f = 2GHz f = 4GHz	14.5	16.0 11.0		dB
PAE	Power Added Efficiency at 1dB Compression V _{DS} = 8 V, I _{DS} ≈ 50% I _{DSS} f = 2GHz		44		%
I_{DSS}	Saturated Drain Current V _{DS} = 3 V, V _{GS} = 0 V	1250	2050	2690	mA
G_M	Transconductance V _{DS} = 3 V, V _{GS} = 0 V	1360	2150		mS
V_P	Pinch-off Voltage V _{DS} = 3 V, I _{DS} = 20 mA		-1.0	-2.5	V
BV_{GD}	Drain Breakdown Voltage I _{GD} = 6.8 mA	-13	-15		V
BV_{GS}	Source Breakdown Voltage I _{GS} = 6.8 mA	-7	-14		V
R_{TH}	Thermal Resistance		7*		°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	-5V	-3V
I_{gsf}	Forward Gate Current	30.6 mA	10.2 mA
I_{gsr}	Reversed Gate Current	-5.1 mA	-1.7 mA
P_{in}	Input Power	33.5 dBm	@ 3dB Compression
T_{ch}	Channel Temperature	175°C	175°C
T_{stg}	Storage Temperature	-65/175°C	-65/175°C
P_t	Total Power Dissipation	20 W	20 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.

Specifications are subject to change without notice.

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