



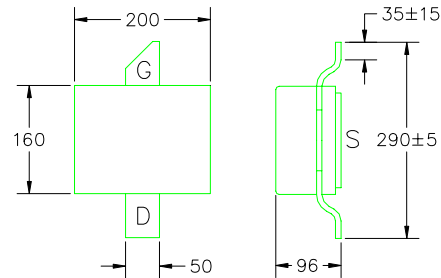
EPA120E-CP083

UPDATED 02/15/2005

High Efficiency Heterojunction Power FET

FEATURES

- NON-HERMETIC SURFACE MOUNT
- 160MIL METAL CERAMIC PACKAGE
- +29 dBm OUTPUT POWER AT 1dB COMPRESSION
- 19.5 dB GAIN AT 2 GHz
- 0.3x1200 MICRON RECESSED "MUSHROOM" GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY



All Dimensions in mil
Tolerance: ± 3 mil

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



Caution! ESD sensitive device.

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression $V_{ds} = 8\text{ V}$, $I_{ds}=50\% I_{dss}$ $f = 2.0\text{ GHz}$ $f = 12.0\text{ GHz}$	27.5	29.0 29.0		dBm
G_{1dB}	Gain at 1dB Compression $V_{ds} = 8\text{ V}$, $I_{ds}=50\% I_{dss}$ $f = 2.0\text{ GHz}$ $f = 12.0\text{ GHz}$	18.0	19.5 7.0		dB
PAE	Power Added Efficiency at 1dB Compression $V_{ds} = 8\text{ V}$, $I_{ds}=50\% I_{dss}$ $f = 2.0\text{ GHz}$		43		%
I_{DSS}	Saturated Drain Current $V_{DS} = 3\text{ V}$, $V_{GS} = 0\text{ V}$	210	360	510	mA
G_M	Transconductance $V_{DS} = 3\text{ V}$, $V_{GS} = 0\text{ V}$	240	380		mS
V_P	Pinch-off Voltage $V_{DS} = 3\text{ V}$, $I_{DS} = 3.5\text{ mA}$		-1.0	-2.5	V
BV_{GD}	Drain Breakdown Voltage $I_{GD} = 1.2\text{ mA}$	-13	-15		V
BV_{GS}	Source Breakdown Voltage $I_{GS} = 1.2\text{ mA}$	-7	-14		V
R_{TH}^*	Thermal Resistance		40		$^\circ\text{C/W}$

Notes: * Overall R_{th} depends on case mounting.

ABSOLUTE MAXIMUM RATINGS FOR CONTINUOUS OPERATION^{1,2}

SYMBOL	CHARACTERISTIC	VALUE
V_{DS}	Drain to Source Voltage	8 V
V_{GS}	Gate to Source Voltage	-3 V
I_{DS}	Drain Current	405 mA
I_{GSF}	Forward Gate Current	10 mA
P_{IN}	Input Power	@ 3dB compression
P_T	Total Power Dissipation	3.8 W
T_{CH}	Channel Temperature	150°C
T_{STG}	Storage Temperature	-65/+150°C

Note: 1. Exceeding any of the above ratings may result in permanent damage.

2. Exceeding any of the above ratings may reduce MTF below design goals.

Specifications are subject to change without notice.

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page 1 of 1

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