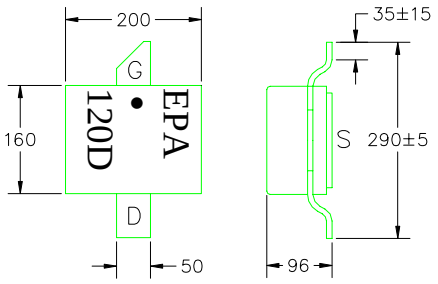
EPA120D-CP083

High Efficiency Heterojunction Power FET

UPDATED 01/13/2006

FEATURES

- NON-HERMETIC SURFACE MOUNT 160MIL METAL CERAMIC PACKAGE
- +29 dBm OUTPUT POWER AT 1dB COMPRESSION
- 18.0 dB GAIN AT 2 GHz
- 0.5x1200 MICRON RECESSED "MUSHROOM" GATE
- Si_3N_4 PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY



All Dimensions in mil
Tolerance: ± 3 mil

Caution! ESD sensitive device.

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

SYMBOL	PARAMETER/TEST CONDITIONS		MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression Vds = 8 V, Ids=50% Idss	f = 2.0 GHz f = 4.0 GHz	27.5	29.0 29.0		dBm
G_{1dB}	Gain at 1dB Compression Vds = 8 V, Ids=50% Idss	f = 2.0 GHz f = 4.0 GHz	16.5	18.0 13.0		dB
PAE	Power Added Efficiency at 1dB Compression Vds = 8 V, Ids=50% Idss	f = 2.0 GHz		44		%
I_{DSS}	Saturated Drain Current	V_{DS} = 3 V, V_{GS} = 0 V	210	360	510	mA
G_M	Transconductance	V_{DS} = 3 V, V_{GS} = 0 V	240	380		mS
V_P	Pinch-off Voltage	V_{DS} = 3 V, I_{DS} = 3.6 mA		-1.0	-2.5	V
BV_{GD}	Drain Breakdown Voltage	I_{GD} = 1.2 mA	-13	-15		V
BV_{GS}	Source Breakdown Voltage	I_{GS} = 1.2 mA	-7	-14		V
R_{TH}*	Thermal Resistance			45	50	°C/W

Notes: * Overall Rth depends on case mounting.

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE[1]	CONTINUOUS[2]
Vds	Drain-Source Voltage	12V	8V
Vgs	Gate-Source Voltage	-5V	-3V
Igsf	Forward Gate Current	5.4 mA	1.8 mA
Igsr	Reserve Gate Current	0.9 mA	0.3 mA
Pin	Input Power	26 dBm	@ 3dB Compression
Tch	Channel Temperature	175°C	175°C
Tstg	Storage Temperature	-65/175°C	-65/175°C
Pt	Total Power Dissipation	3.0 W	3.0 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.