



BCP120Z

HIGH EFFICIENCY HETEROJUNCTION POWER FET

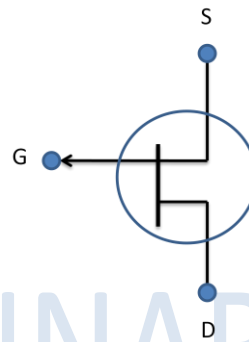
Description – The BeRex BCP120 is a GaAs Power p-HEMT whose nominal 0.35 micron gate length and 1200 micron gate width make the product ideally suited to applications requiring high-gain and medium power in the 1000 MHz to 18.0 GHz frequency range. The product is suited for either wideband (6-18 GHz) or narrow-band applications. The chip is produced using state of the art metallization and devices from each wafer are screened to insure reliability. All chips utilize Si₃N₄ passivation for increased reliability.

Product Features

- +31.0 dBm Typical Output Power
- 8.5 dB Typical Gain
- 0.35 X 1200 Micron Recessed Gate

Applications

- Commercial
- Military / Hi-Rel
- Test & Measurement



Chip Thickness: 100±20um

PRELIMINARY

ELECTRICAL CHARACTERISTIC (T_a = 25° C)

SYMBOLS	PARAMETER/TEST CONDITIONS	TEST FREQUENCY	MINIMUM	TYPICAL	MAXIMUM	UNIT
P _{1dB}	Output Power @ P _{1dB} (V _{ds} = 12V, I _{ds} = 50% I _{dss})	12 GHZ	29.5	31.0		dBm
G _{1dB}	Gain @ P _{1dB} (V _{ds} = 12V, I _{ds} = 50% I _{dss})	12 GHZ	7.0	8.5		dB
PAE	PAE @ P _{1dB} (V _{ds} = 12V, I _{ds} = 50% I _{dss})	12 GHZ		50		%
I _{dss}	Saturated Drain Current			360		mA
G _m	Transconductance			450		mS
V _p	Pinch-off Voltage			-1.1		V
BV _{gd}	Drain Breakdown Voltage			20		V
BV _{gs}	Source Breakdown Voltage			22		V
R _{th}	Thermal Resistance (Au-Sn Eutectic Attach)			40		° C/W

SYMBOLS	PARAMETERS	ABSOLUTE	CONTINUOUS
V _{ds}	Drain-Source Voltage	16V	14V
V _{gs}	Gate-Source Voltage	1.0V	0.6V
I _{ds}	Drain Current	I _{dss}	300mA
I _{gsf}	Forward Gate Current	60mA	15mA
P _{in}	Input Power	27dBm	3dBm Compression
T _{ch}	Channel Temperature	175° C	150° C
T _{stg}	Storage Temperature	-60° C / 150° C	-60° C / 150° C
P _t	Total Power Dissipation	3.4	4.5