



BCP180Z

HIGH EFFICIENCY HETEROJUNCTION POWER FET

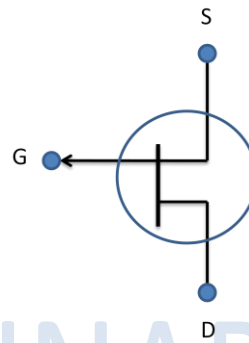
Description – The BeRex BCP180Z is a GaAs Power p-HEMT whose nominal 0.35 micron gate length and 1800 micron gate width make the product ideally suited to applications requiring high-gain and medium power in the 1000 MHz to 18.0 GHz frequency range. The product is suited for power applications thru 18.0 GHz. The chip is produced using state of the art metallization and devices from each wafer are screened to insure reliability. All chips utilize Si_3N_4 passivation for increased reliability.

Product Features

- +32.0 dBm Typical Output Power
- 9.0 dB Typical Gain
- 0.35 X 1800 Micron Recessed Gate

Applications

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



Chip Thickness: 100±20 um

PRELIMINARY

ELECTRICAL CHARACTERISTIC ($T_a = 25^\circ C$)

SYMBOLS	PARAMETER/TEST CONDITIONS	TEST FREQUENCY	MINIMUM	TYPICAL	MAXIMUM	UNIT
P_{1dB}	Output Power @ P_{1dB} ($V_{ds} = 10V, I_{ds} = 50\% I_{dss}$)	12 GHZ	30.5	32.0		dBm
G_{1dB}	Gain @ P_{1dB} ($V_{ds} = 10V, I_{ds} = 50\% I_{dss}$)	12 GHZ	7.5	9.0		dB
PAE	PAE @ P_{1dB} ($V_{ds} = 10V, I_{ds} = 50\% I_{dss}$)	12 GHZ		46		%
I_{dss}	Saturated Drain Current			540		mA
Gm	Transconductance			675		mS
V_p	Pinch-off Voltage			-1		V
BV_{gd}	Drain Breakdown Voltage			20		V
BV_{gs}	Source Breakdown Voltage			22		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)			33		$^\circ C/W$

SYMBOLS	PARAMETERS	ABSOLUTE	CONTINUOUS
V_{ds}	Drain-Source Voltage	16V	14V
V_{gs}	Gate-Source Voltage	-6V	-3V
I_{ds}	Drain Current	I_{dss}	500mA
I_{gsf}	Forward Gate Current	90mA	15mA
Pin	Input Power	28dBm	3dB Compression
Tch	Channel Temperature	175 $^\circ C$	150 $^\circ C$
Tstg	Storage Temperature	-60 $^\circ C$ / 150 $^\circ C$	-60 $^\circ C$ / 150 $^\circ C$
Pt	Total Power Dissipation	4.2W	3.5W