BIPOLARICS INC. Part Number B15V180C

SILICON MICROWAVE POWER TRANSISTOR

PRODUCT DATA SHEET

FEATURES:

- High Output Power
  30.0 dBm, P_{1dB} @ 1.0 GHz
- High Gain Bandwidth Product
  f_t = 6.0 GHz @ I_C = 100 mA
- High Gain
  G_{PE} = 14.0 dB @ 1.0 GHz
- Ceramic, BeO & Stripline packages available

PERFORMANCE DATA:

- Electrical Characteristics ($T_A = 25^oC$)

DESCRIPTION AND APPLICATIONS:

Bipolarics' B15V180C is a high performance, low cost silicon bipolar transistor intended for linear power applications at frequencies of 0.5 to 2.6 GHz. Uniformity and reliability are assured by the use of advanced process techniques: ion implanted junctions, ion implanted ballast resistors and gold metallization. When the B20V140 is bonded common emitter, linear output power of 1 Watt can be achieved. By driving part type B20V180 or B20V1160 combination thereof, higher output power can be achieved.

Absolute Maximum Ratings:

SYMBOL	PARAMETERS	RATING	UNITS
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	20	V
V_{EBO}	Emitter-Base Voltage	3.0	V
I_C	Collector Current (instantaneous)	160	mA
T_J	Junction Temperature	200	^oC
T_{STG}	Storage Temperature	-65 to +150	^oC

SYMBOL	PARAMETERS & CONDITIONS V_{CE} =15V, I_C = 100 mA, Class A, unless stated		UNIT	MIN.	TYP.	MAX.
P_{1dB}	Power output at 1 dB compression:	f = 1.0 GHz	dBm		27.0	
G_{1dB}	Gain at 1dB compression:	f = 1.0 GHz	dB		9.0	
η	Collector Efficiency	Class A	%		30	
C_{CB}	Collector Base Capacitance:	f = 1 MHz, I_E = 0	pF	0.7	1.0	
h_{FE}	Forward Current Transfer Ratio: V_{CE} = 8V, I_C =50 mA			20	60	100
P_T	Total Power Dissipation		W		1.5	