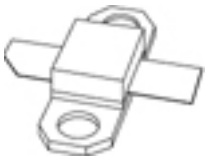
BIPOLARICS, INC. Part Number BPT1419B20

SILICON MICROWAVE POWER TRANSISTOR

PRODUCT DATA SHEET

FEATURES:

- Class C Characteristics
- High Output Power
  20.0 W Typ.@ 1.35-1.85 GHz
- Gold Metallization
- BeO packaging for low thermal resistance



DESCRIPTION AND APPLICATIONS:

Bipolarics' BPT1419B20 is a high performance common base RF power transistor intended for 22V operation across the 1.35 to 1.85 GHz frequency band. Rated at 20 watts minimum output power, it may be used for both CW and PEP applications.

PERFORMANCE DATA:

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

Absolute Maximum Ratings:

SYMBOL	PARAMETERS	RATING	UNITS
V_{CBO}	Collector-Base Voltage	50	V
V_{CER}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Collector Current (instantaneous)	2.0	A
T_J (1)	Junction Temperature	200	^oC
T_{STG}	Storage Temperature	-65 to 150	^oC

(1) Depends on package

SYMBOL	PARAMETERS & CONDITIONS V_{CE} =15 V, I_C = 200 mA, Class A, unless stated	UNIT	MIN.	TYP.	MAX.
BV_{CBO}	Collector-Base Break down Voltage I_C = 50 mA, V_{BE} = 0 V	V	50		
BV_{EBO}	Emitter-Base Breakdown Voltage I_E = 5 mA, I_C = 0	V	4	5	
G_{pe}	Gain f = 1.35 - 1.85 GHz, V_{CC} = 22 V, P_{out} = 20 W	dB	6.0		7
η_C	Collector Efficiency f = 1.35 - 1.85 GHz, V_{CC} = 22 V, P_{out} = 20 W	%	40		50
h_{FE}	DC Current Gain I_C = 500 mA, V_{CE} = 5 V		20	50	100
f_T	Cut off Frequency	GHz		6.0	
P_{out}	Output power	W	20		
I_{CBO}	Collector Current V_{CB} = 28, I_E = 0	A			2
ψ	Load Mismatch V_{Cc} = 22 V I_E = 2.0 A, f = 1.35 - 1.85 GHz P_{out} = 20 W			10:1	

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Frequency	Z Source		Z Load	
GHz	R	jX	R	jX
1.35	8.2	-15.0	9.3	-15
1.40	7.7	-13.0	8.8	-15
1.45	7.4	-12.0	8.3	-14
1.50	7.3	-11.0	7.9	-14
1.55	7.2	-10.0	7.5	-13
1.60	7.3	-9.2	7.2	-13
1.65	7.4	-8.6	6.9	-13
1.70	7.6	-8.1	6.6	-12
1.75	7.9	-7.8	6.4	-12
1.80	8.7	-7.6	6.2	-11
1.85	8.4	-7.5	6.1	-11