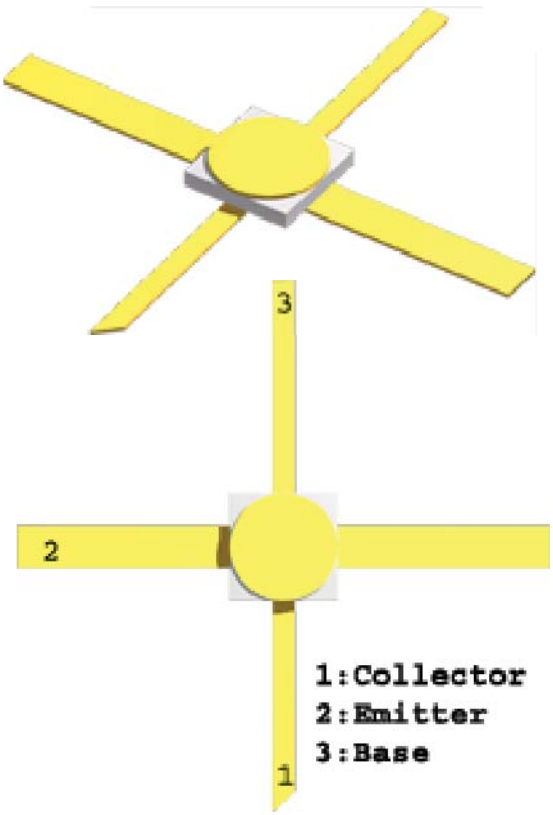
BIPOLARICS INC. Part Number B12V140-10

SILICON MICROWAVE POWER TRANSISTOR

Package 10: 0.100" 4 Lead Pill

FEATURES:

- P_{1dB} = 27.0 dBm @ 1.0 GHz
- High Gain
  G_{PE} = 14.0 dB @ 1.0 GHz
- High Gain Bandwidth Product
  f_t = 6.5 GHz @ I_C = 100 mA
- High Reliability
  Gold Metallization
  Nitride Passivation
- Ballasted Emitter
- Hermetic BeO Package
- Common Emitter



Description:

Bipolarics' B20V140 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	1200	mA
T_J	Junction Temperature	200	°C
T_{STG}	Storage Temperature	-65 to 200	°C

Thermal Data:

θ_{JC}	Thermal Resistance	4.5	C/W

Performance Data:

SYMBOL	PARAMETERS & CONDITIONS V_{CB} = 15V, I_C = 100 mA, Class A	UNIT	MIN.	TYP.	MAX.
P_{1dB}	Power output at 1 dB compression: f = 1.0 GHz	dB		27.0	
η	Collector Efficiency Class A	%		30	
h_{FE}	Forward Current Transfer Ratio: V_{CB} = 8 V, I_C = 50 mA		20	60	100
C_{OB}	Collector BaseCapacitance f = 1 MHz, I_E = 0	pF	7.0	10.0	
P_T	Total Power Dissipation	W		1.5	