# BIPOLARICS INC.   Part Number BMT10B450-50

SILICON MICROWAVE POWER TRANSISTOR

Package 50: 0.500" x 0.400" 2 Lead Flange

FEATURES:

- P_{out} = 450 W @ 1.0 GHz
- High Gain
  - G_{PE} = 7.0 dB @ 1.0 GHz
- High Gain Bandwidth Product
  - f_t = 6.5 GHz @ I_C = 9.00 A
- High Reliability
  - Gold Metallization
  - Nitride Passivation
- Input/Output Impedance Matching
- Ballasted Emitter
- Hermetic Stripline BeO Package
- Common Base
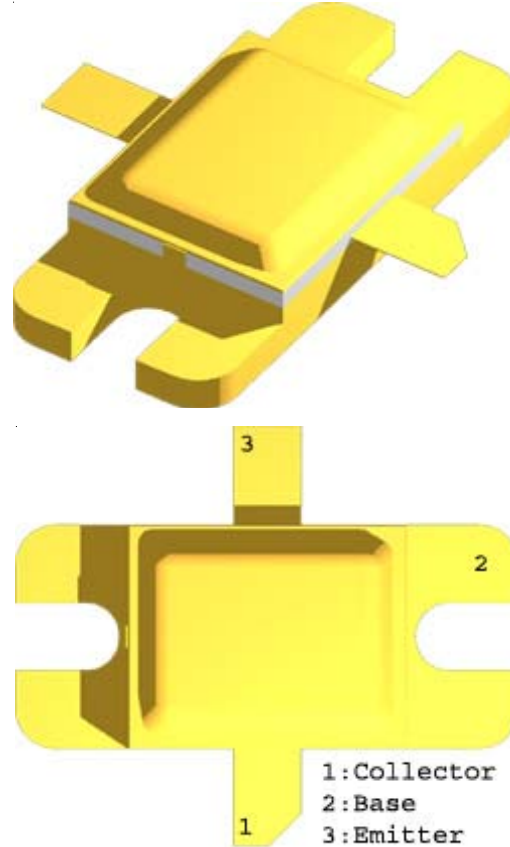
1:Collector
2:Base
3:Emitter

Description:

BPT10B450-50 is a 450 watt NPN Microwave Transistor designed for pulse power amplifier applications in the 1.0 GHz range. Avionics application include IFF, TACAN, and DME. Advanced processing techniques such as ion implanted junctions, ballast resistors, gold metallized oxide isolation and nitrade passivations assure high performance and reliability. Hermetic BeO package with gold-tin seal is compatible with the most demanding high reliability industrial and military standards.

Absolute Maximum Ratings:

SYMBOL	PARAMETERS	RATING	UNITS
V_{CC}	Collector-Supply Voltage	55	V
P_{DISS}	Power Dissipation	1250	W
I_C	Collector Current	25	A
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} = 50 V, I_C = 9.00 A, Class C	UNIT	MIN.	TYP.	MAX.
P_{1dB}	Power output at 1 dB compression: f = 1.0 GHz	W		450	
η	Collector Efficiency Class C	%		50	
h_{FE}	Forward Current Transfer Ratio: V_{CB} = 50 V, I_C = 9.00 A		20	60	100
C_{OB}	Output Capacitance: f = 1 MHz, I_E = 0	pF		14.0	
P_T	Total Power Dissipation	W		900	

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Test Board Layout
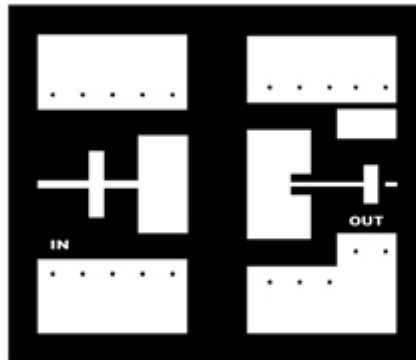
Test Board Components
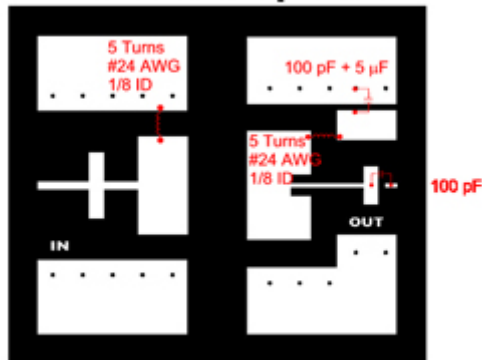
Substrate: 0.025" Duroid $\varepsilon_R = 2.55$

Test Board Photograph