

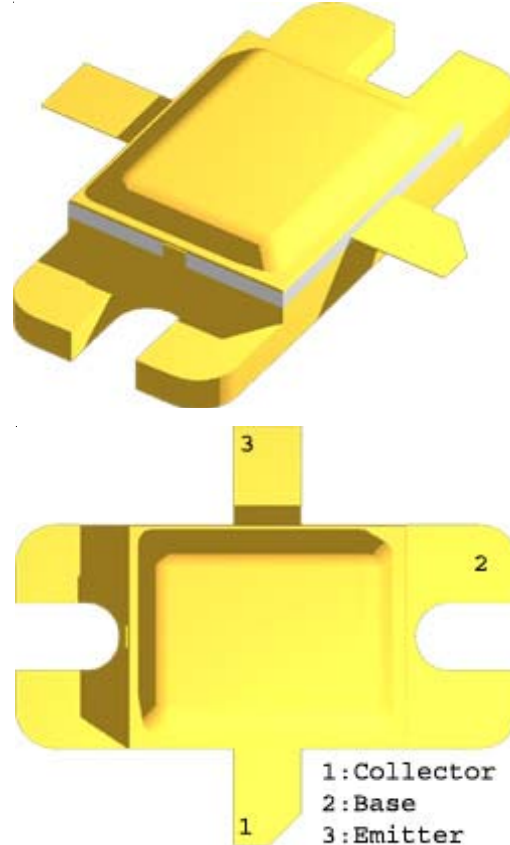
# BIPOLARICS INC. Part Number BMT1214B325-50

## SILICON MICROWAVE POWER TRANSISTOR

Package 50: 0.500" x 0.400" 2 Lead Flange

### FEATURES:

- $P_{out} = 325 \text{ W @ } 1.2 - 1.4 \text{ GHz}$
- High Gain  
 $G_{PE} = 6.4 \text{ dB @ } 1.2 - 1.4 \text{ GHz}$
- High Gain Bandwidth Product  
 $f_t = 6.5 \text{ GHz @ } I_C = 7.22 \text{ A}$
- 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:

BPT1214B325-50 is a 325 watt NPN Microwave Transistor designed for pulse power amplifier applications in the 1.2 to 1.4 GHz range. Avionics application include IFF, TACAN, and DME. Advanced processing techniques such as ion implanted junctions, ballast resistors, gold metallized oxide isolation and nitride 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	45	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:

$\theta_{JC}$	Thermal Resistance	4.5	C/W
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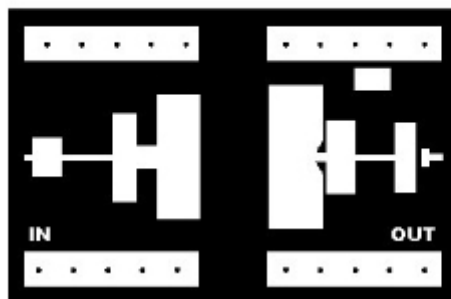
### Performance Data:

SYMBOL	PARAMETERS & CONDITIONS $V_{CB} = 45 \text{ V}, I_C = 7.22 \text{ A}, \text{Class C}$	UNIT	MIN.	TYP.	MAX.
$P_{1dB}$	Power output at 1 dB compression: $f = 1.2 - 1.4 \text{ GHz}$	W		325	
$\eta$	Collector Efficiency Class C	%		50	
$h_{FE}$	Forward Current Transfer Ratio: $V_{CB} = 45 \text{ V}, I_C = 7.22 \text{ A}$		20	60	100
$C_{OB}$	Output Capacitance: $f = 1 \text{ MHz}, I_E = 0$	pF		14.0	
$P_T$	Total Power Dissipation	W		650	

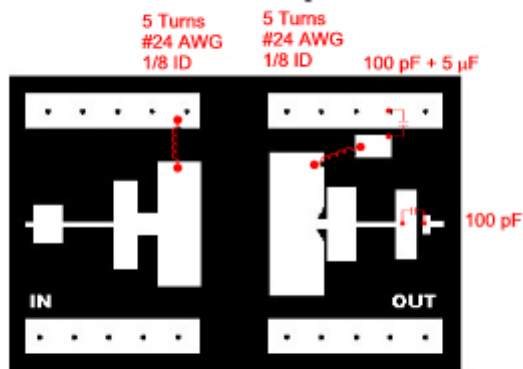
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### Test Board Layout



### Test Board Components



Substrate: 0.025" Duroid  $\epsilon_R = 10.0$

### Test Board Photograph

