

## SILICON MICROWAVE POWER TRANSISTOR

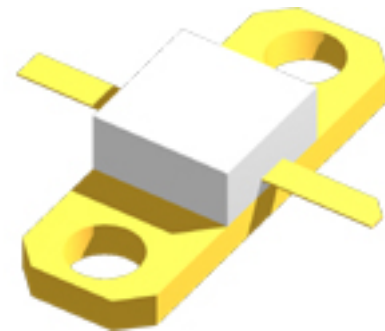
### PRODUCT DATA SHEET

#### FEATURES:

- Common Base, Class C Package Configuration
- High Output Power  
2 W @ 1.7 to 2.0 GHz
- High Gain Bandwidth Product  
 $f_t = 6.0 \text{ GHz @ } I_C = 320 \text{ mA}$
- High Gain  
 $G_{PE} = 7.0 \text{ dB to } 8.2 \text{ dB}$
- High Reliability  
Gold Metallization  
Nitride Passivation
- Diffused Ballast Resistors
- BeO Package
- Built-In Matching Network  
for Broadband Operation

#### PERFORMANCE DATA:

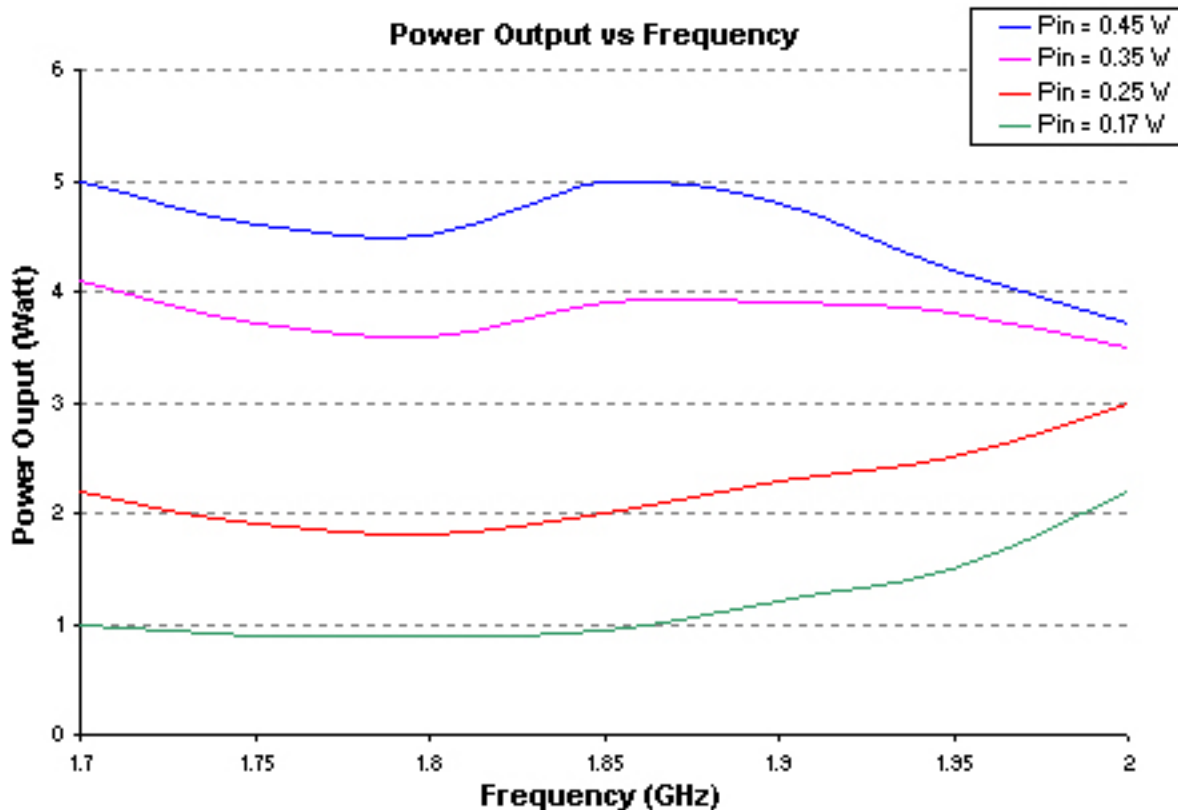
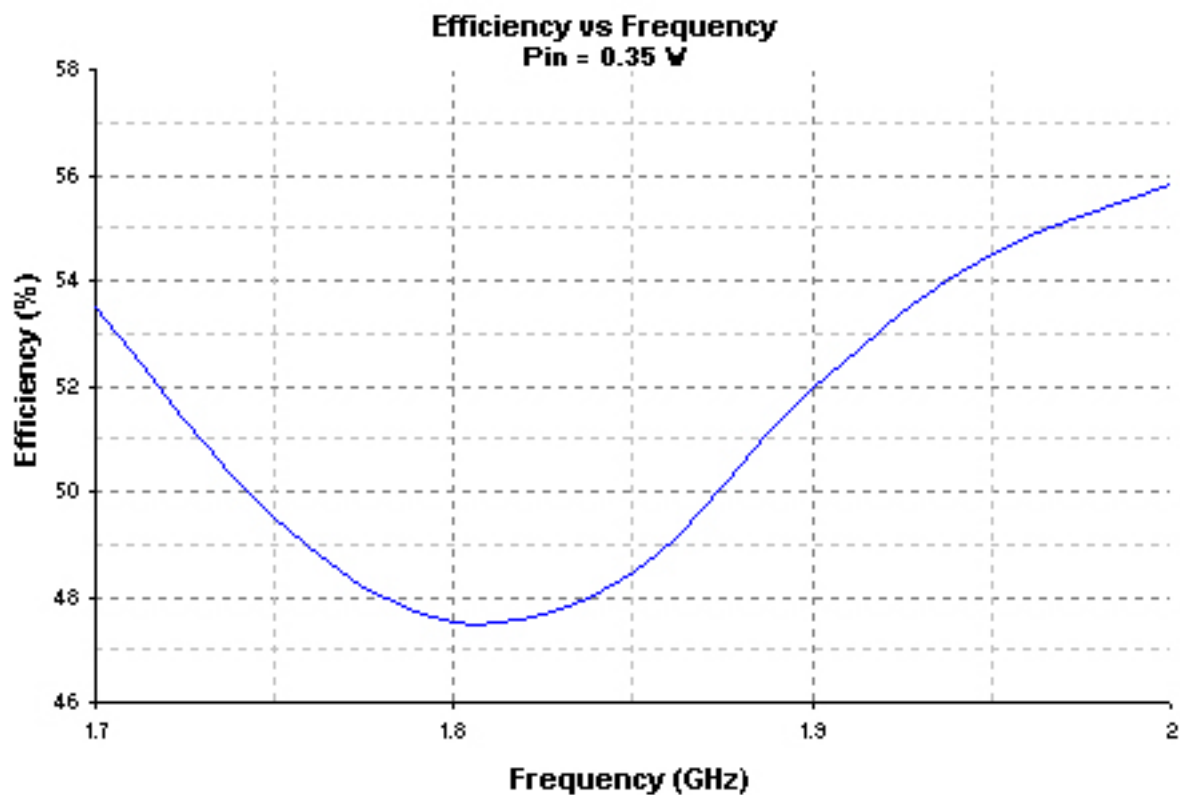
- Electrical Characteristics ( $T_A = 25^\circ\text{C}$ )



#### Absolute Maximum Ratings:

SYMBOL	PARAMETERS	RATING	UNITS
$V_{CBO}$	Collector-Base Voltage	50	V
$V_{CEO}$	Collector-Emitter Voltage	28	V
$V_{EBO}$	Emitter-Base Voltage	3.5	V
$I_C$	Collector Current (instantaneous)	320	mA
$T_J$	Junction Temperature	200	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-65 to 200	$^\circ\text{C}$
$\theta_{JC}$	Thermal Resistance	6.5	C/W

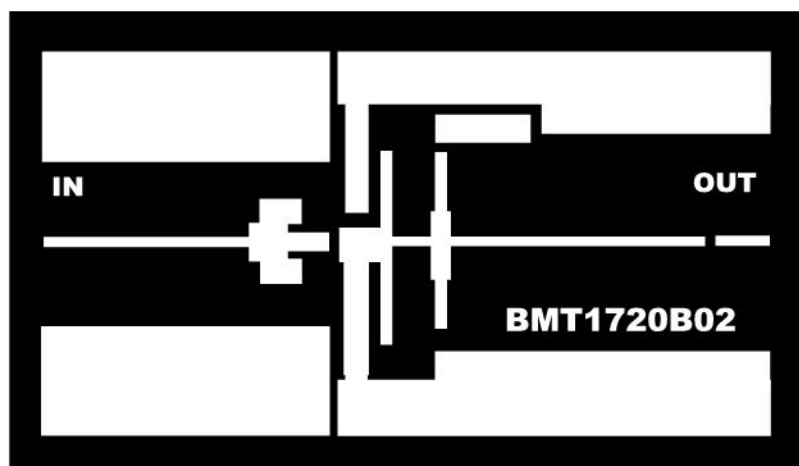
SYMBOL	PARAMETERS & CONDITIONS $V_{CE} = 28\text{V}, I_C = 320 \text{ mA}, \text{Class C}$	UNIT	MIN.	TYP.	MAX.
$P_{1dB}$	Power output at 1 dB compression: $f = 1.7 \text{ GHz}$	W		2	
$\eta$	Collector Efficiency $\text{Class C}$	%		50	
$h_{FE}$	Forward Current Transfer Ratio: $V_{CB} = 5\text{V}, I_C = 100 \text{ mA}$		10	60	100
$C_{OB}$	Output Capacitance: $f = 1 \text{ MHz}, I_E = 0$	pF		4.5	
$P_T$	Total Power Dissipation	W		4	

**BIPOLARICS, INC. Part Number BMT1720B02****SILICON MICROWAVE POWER TRANSISTOR**

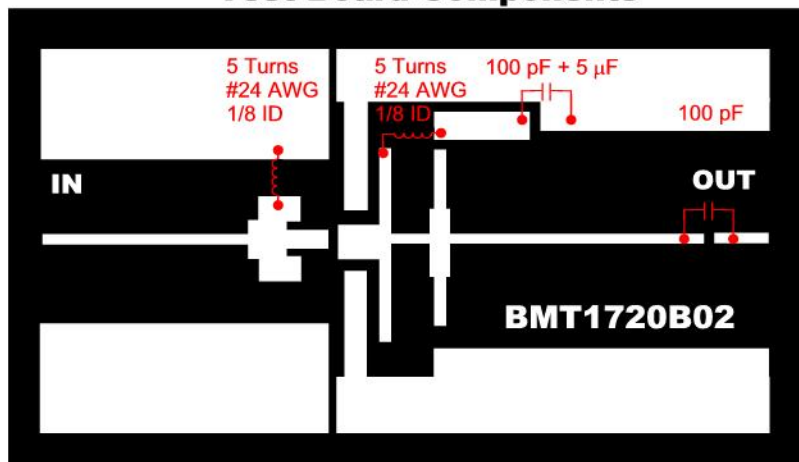
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## SILICON MICROWAVE POWER TRANSISTOR

### Test Board Layout



### Test Board Components



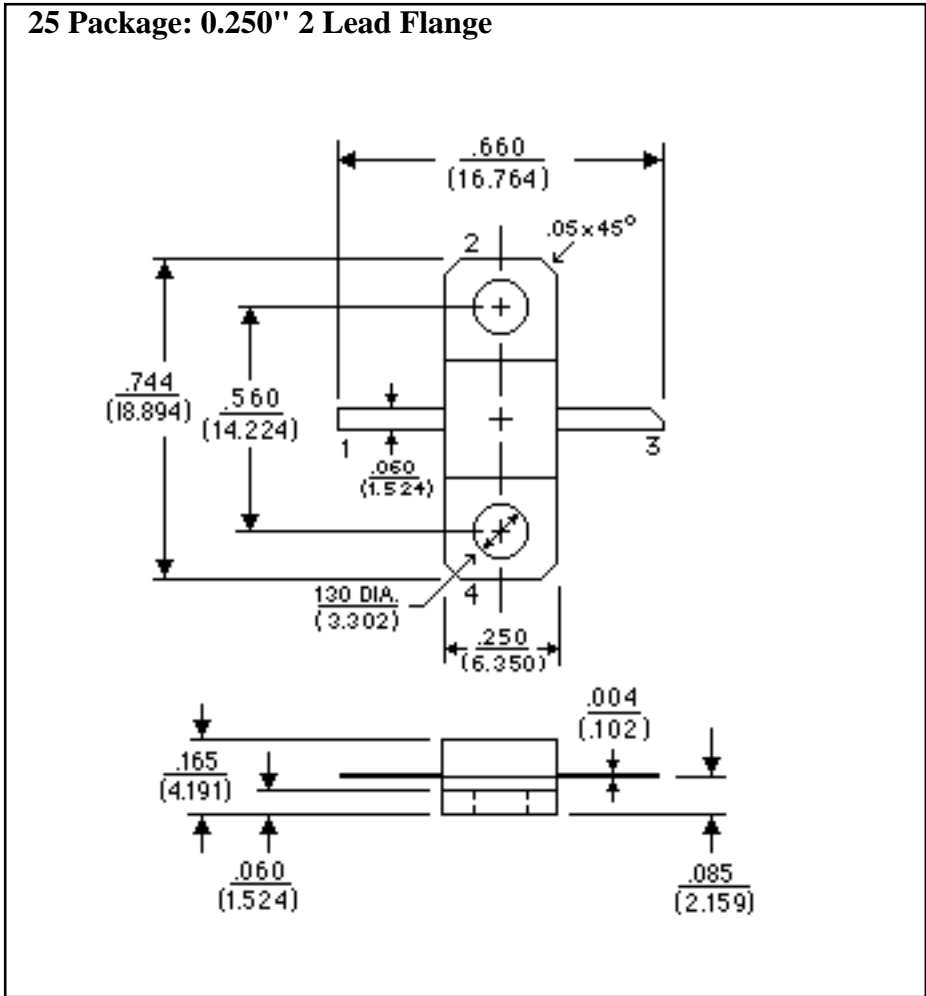
Substrate: 0.030" thick teflon fiberglass  $\epsilon_R = 2.55$

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**NOTES:** (unless otherwise specified)

1. Dimensions are  $\frac{\text{in}}{\text{mm}}$
2. Tolerances:  
 in .xxx =  $\pm .005$   
 mm .xx =  $\pm .13$
3. All dimensions nominal; subject to change without notice

<b>LEAD</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
25 Package	Emitter	Base	Collector	Base

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