

## SILICON MICROWAVE POWER TRANSISTOR

### PRODUCT DATA SHEET

#### FEATURES:

- High Output Power  
4W @ 1.0 GHz
- High Gain Bandwidth Product  
 $f_t = 6.0 \text{ GHz @ } I_C = 800 \text{ mA}$
- High Gain  
 $G_{PE} = 10.0 \text{ dB @ } 1.0 \text{ GHz}$

#### DESCRIPTION AND APPLICATIONS:

Bipolarics' B20V1320 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 B20V1320 is bonded common emitter, linear output power of 4 Watt can be achieved. By driving part type B20V1640 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 (instantaneous)	1200	mA
$T_J$	Junction Temperature	200	°C
$T_{STG}$	Storage Temperature	-65 to +150	°C

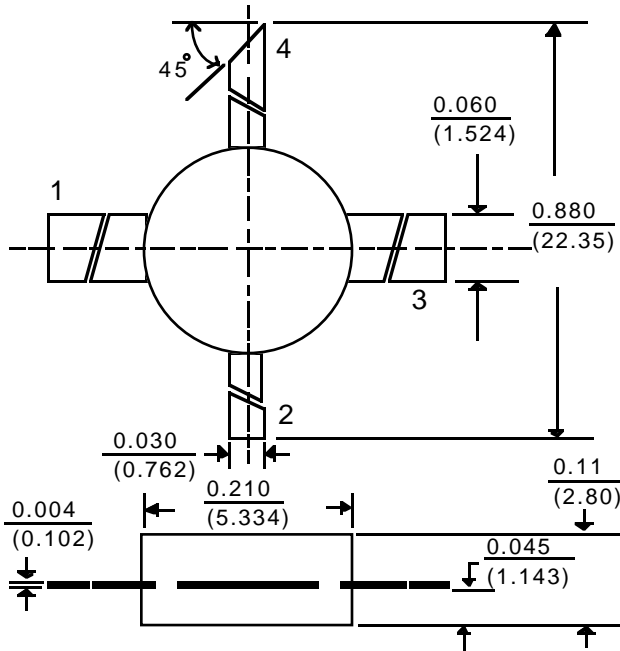
#### PERFORMANCE DATA:

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

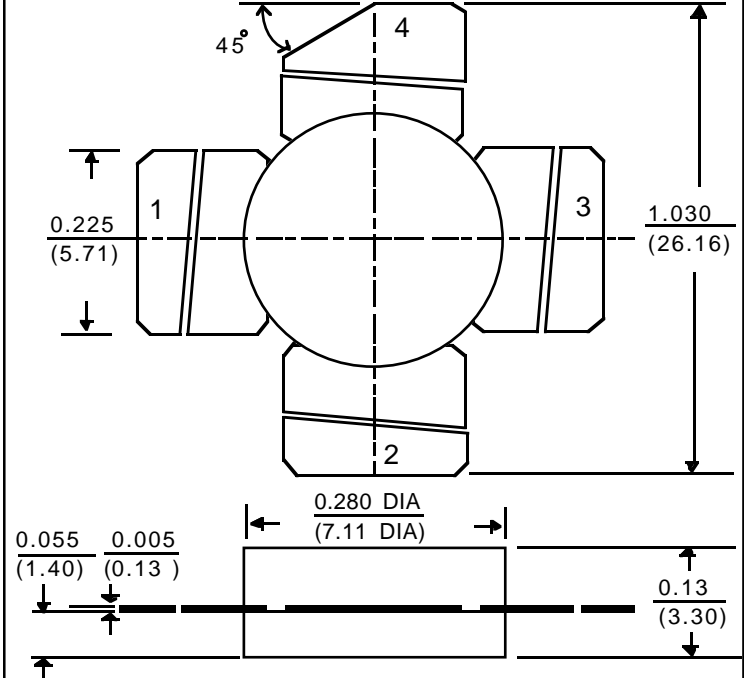
SYMBOL	PARAMETERS & CONDITIONS $V_{CE} = 15V, I_C = 800 \text{ mA}, \text{Class A, unless stated}$	UNIT	MIN.	TYP.	MAX.
$P_{1dB}$	Power output at 1 dB compression: $f = 1.0 \text{ GHz}$	W		4.0	
$G_{1dB}$	Gain at 1dB compression: $f = 1.0 \text{ GHz}$	dB		10.0	
$\eta$	Collector Efficiency <span style="float: right;">Class A</span>	%		30	
$C_{CB}$	Collector Base Capacitance: $f = 1 \text{ MHz}, I_E = 0$	pF	2.6	4.0	
$h_{FE}$	Forward Current Transfer Ratio: $V_{CE} = 8V, I_C = 400 \text{ mA}$		20	60	100
$P_T$	Total Power Dissipation	W		12	

**SILICON MICROWAVE POWER TRANSISTOR**

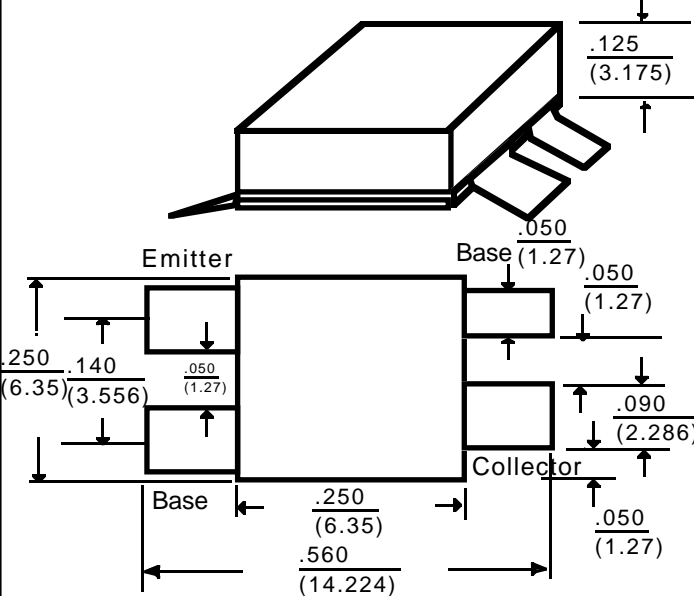
**20 0.200" Pill Package**



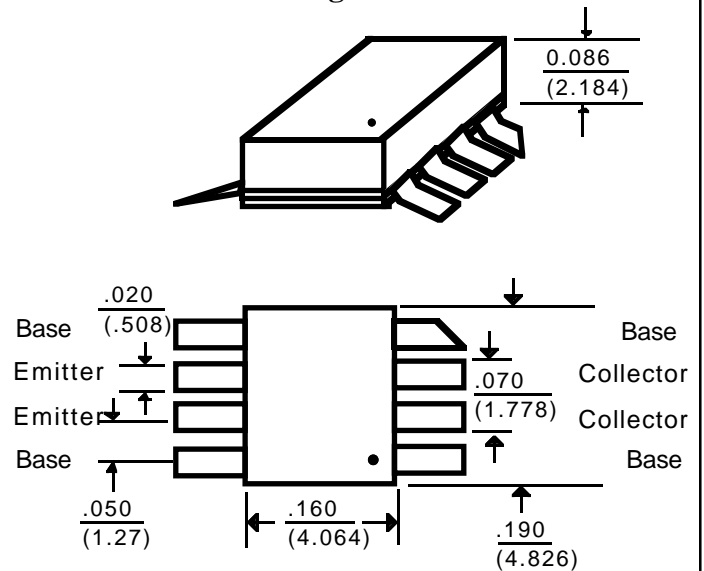
**28 0.280" Pill Package**



**50 Ceramic 4 Lead PAK Surface Mount**



**08 Ceramic SO8 Package**



**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

Drawings are not to scale.

LEAD	1	2	3	4
20 & 28 Package	Base	Emitter	Base	Collector