

SILICON MICROWAVE POWER TRANSISTOR

PRODUCT DATA SHEET

FEATURES:

- High Output Power
27.0 dBm, P_{1dB} @ 1.0 GHz
- High Gain Bandwidth Product
 $f_t = 6.0$ GHz @ $I_C = 100$ mA
- High Gain
 $G_{PE} = 14.0$ dB @ 1.0 GHz
- Ceramic, BeO & Stripline packages available

PERFORMANCE DATA:

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

DESCRIPTION AND APPLICATIONS:

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.

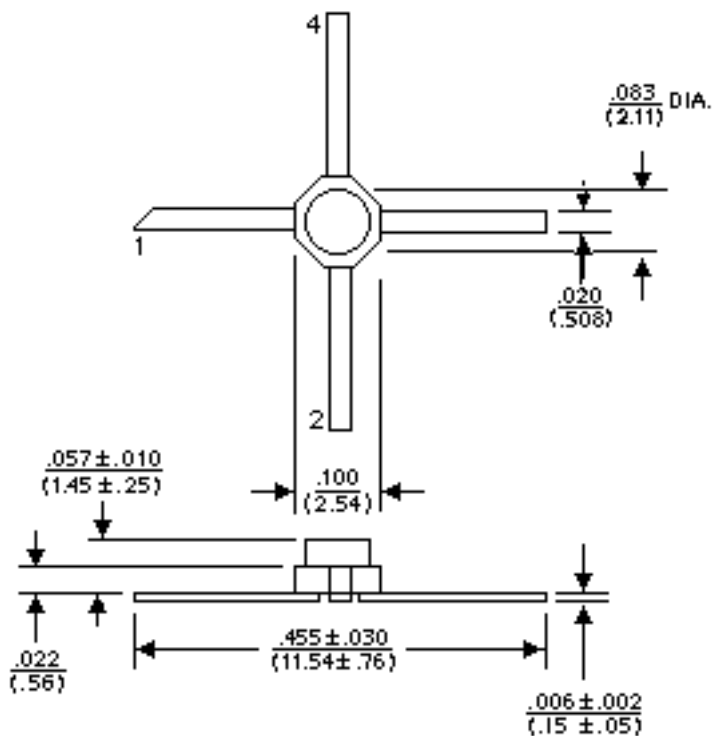
Absolute Maximum Ratings:

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 (instantaneous)	160	mA
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{STG}	Storage Temperature	-65 to +150	$^\circ\text{C}$

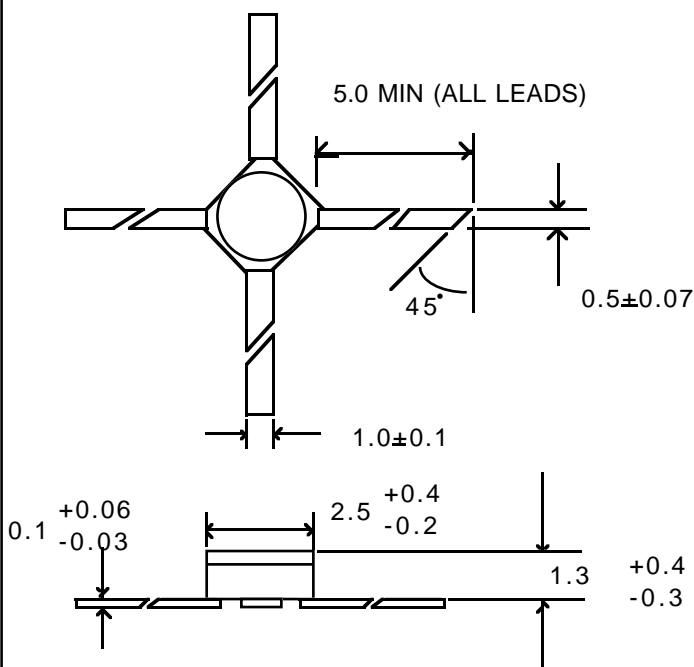
SYMBOL	PARAMETERS & CONDITIONS $V_{CE} = 15\text{V}, I_C = 100$ mA, Class A, unless stated	UNIT	MIN.	TYP.	MAX.
P_{1dB}	Power output at 1 dB compression: $f = 1.0$ GHz	dBm		27.0	
G_{1dB}	Gain at 1dB compression: $f = 1.0$ GHz	dB		9.0	
η	Collector Efficiency Class A	%		30	
C_{CB}	Collector Base Capacitance: $f = 1$ MHz, $I_E = 0$	pF	0.7	1.0	
h_{FE}	Forward Current Transfer Ratio: $V_{CE} = 8\text{V}, I_C = 50$ mA		20	60	100
P_T	Total Power Dissipation	W		1.5	

MEDIUM POWER SILICON MICROWAVE TRANSISTOR

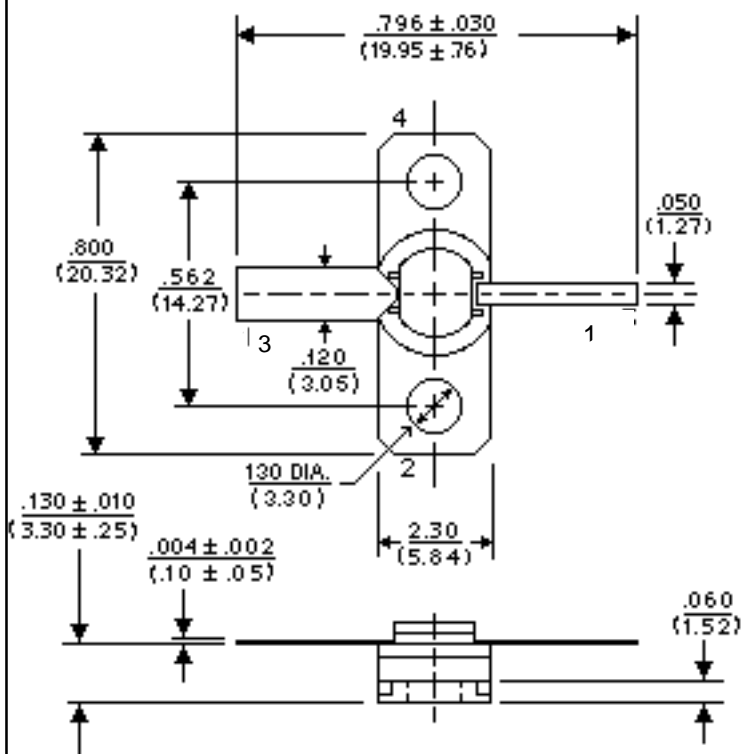
Package Style 85: 0.085" Ceramic Micro-X



Package Style 70: 0.070" Stripline



Package Style 23: 0.230" BeO Flange



LEAD	1	2	3	4
Package	Collector	Emitter	Base	Emitter
70, 85 & 23				

NOTES: (unless otherwise specified)

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