

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' B30V140 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 B30V140 is bonded common emitter, linear output power of 1 Watt can be achieved. By driving part type B30V180 or B30V1160 combination thereof, higher output power can be achieved.

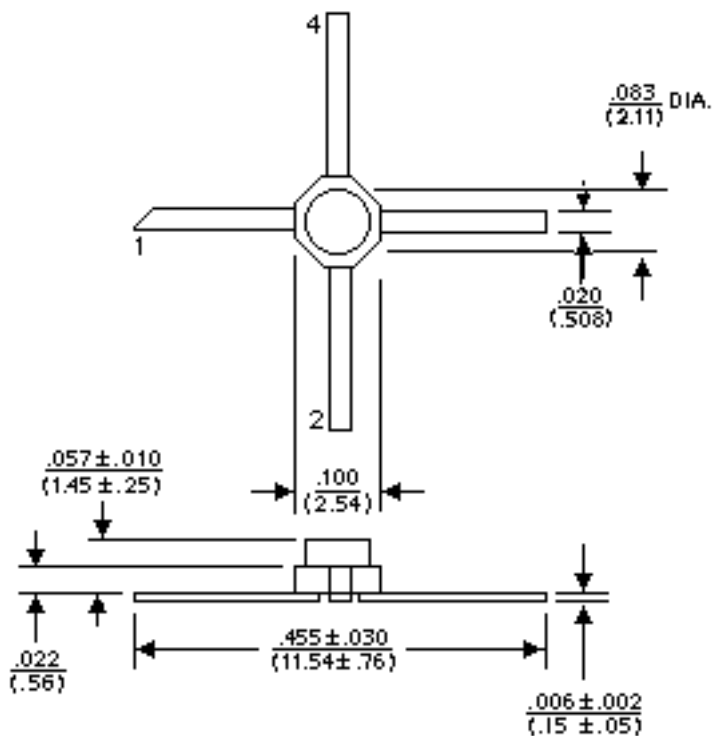
Absolute Maximum Ratings:

SYMBOL	PARAMETERS	RATING	UNITS
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	30	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	$^\circ\text{C}$

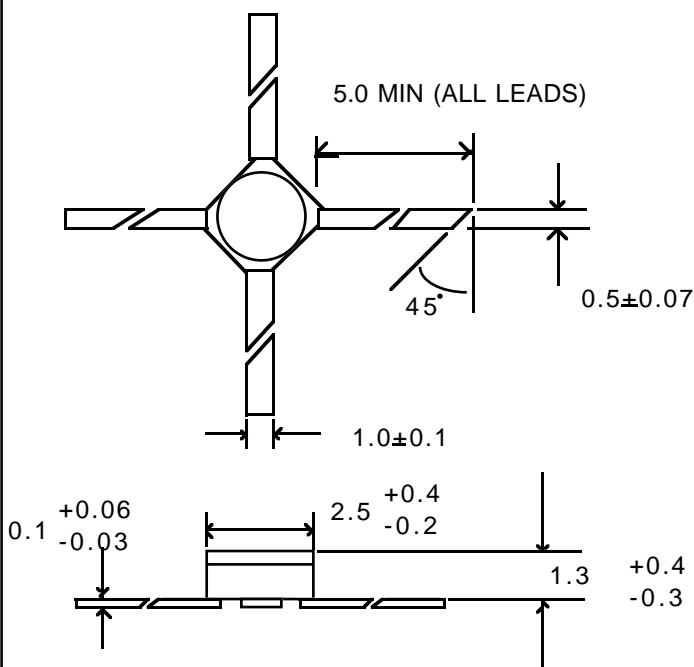
SYMBOL	PARAMETERS & CONDITIONS <small>$V_{CE} = 15\text{V}, I_C = 100\text{ mA}, \text{Class A}, \text{ unless stated}$</small>	UNIT	MIN.	TYP.	MAX.
P_{1dB}	Power output at 1 dB compression: $f = 1.0$ GHz	dBm		27.0	
G_{1dB}	Gain at 1dB compression: $f = 1.0$ GHz	dB		9.0	
η	Collector Efficiency Class A	%		30	
C_{CB}	Collector Base Capacitance: $f = 1$ MHz, $I_E = 0$	pF	1.3	2.0	
h_{FE}	Forward Current Transfer Ratio: $V_{CE} = 8\text{V}, I_C = 50\text{ mA}$		20	60	100
P_T	Total Power Dissipation	W		1.5	

MEDIUM POWER SILICON MICROWAVE TRANSISTOR

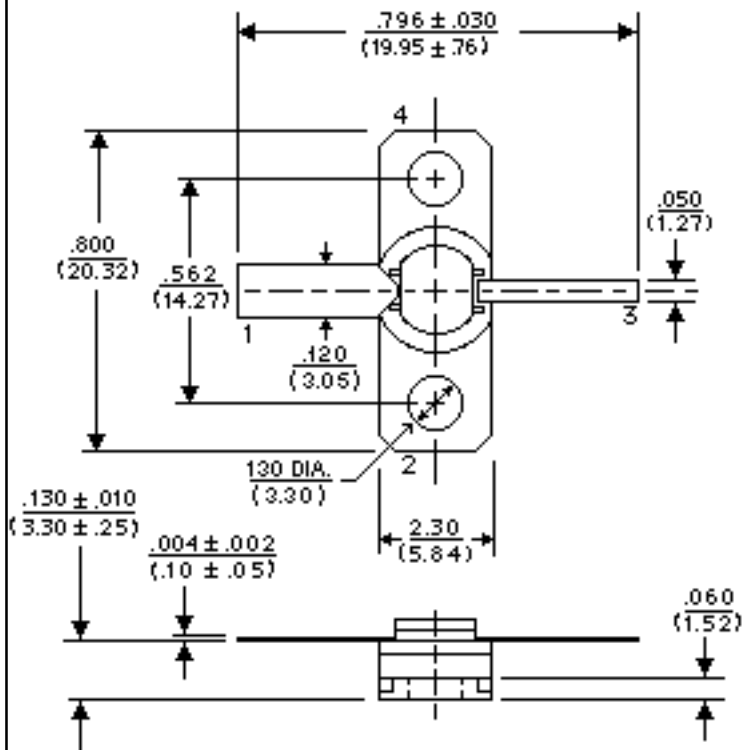
Package Style 35: Micro-X 0.085" Ceramic



Package Style 70: 0.070" Stripline



Package Style 23: 0.230" BeO Flange

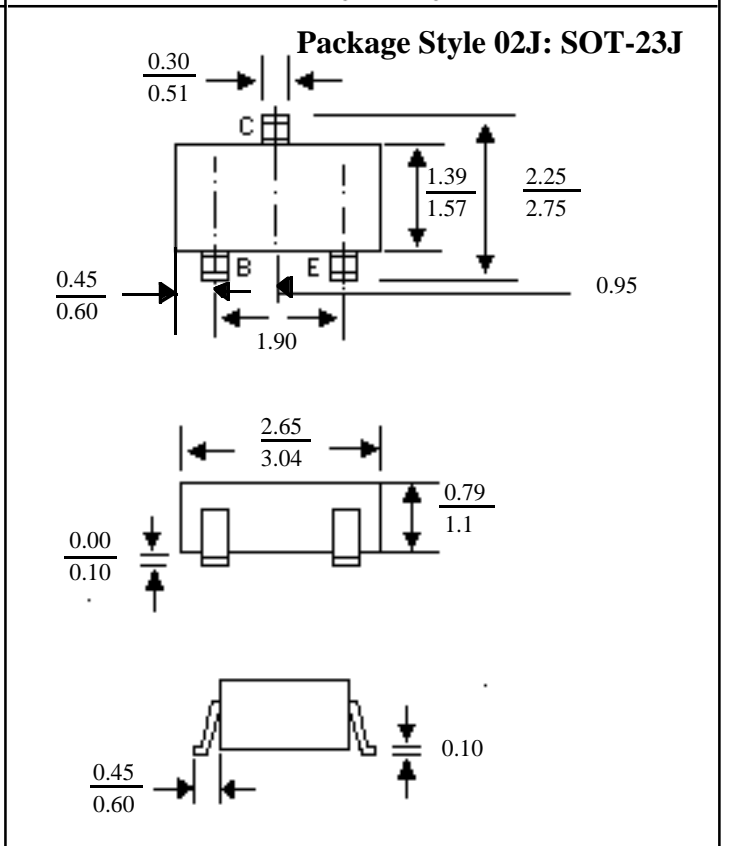
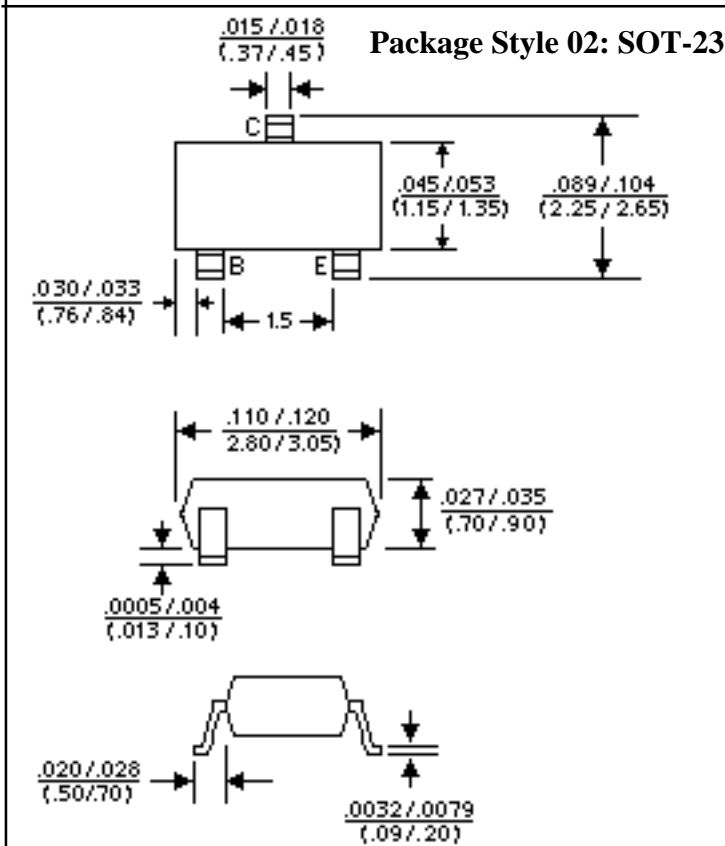
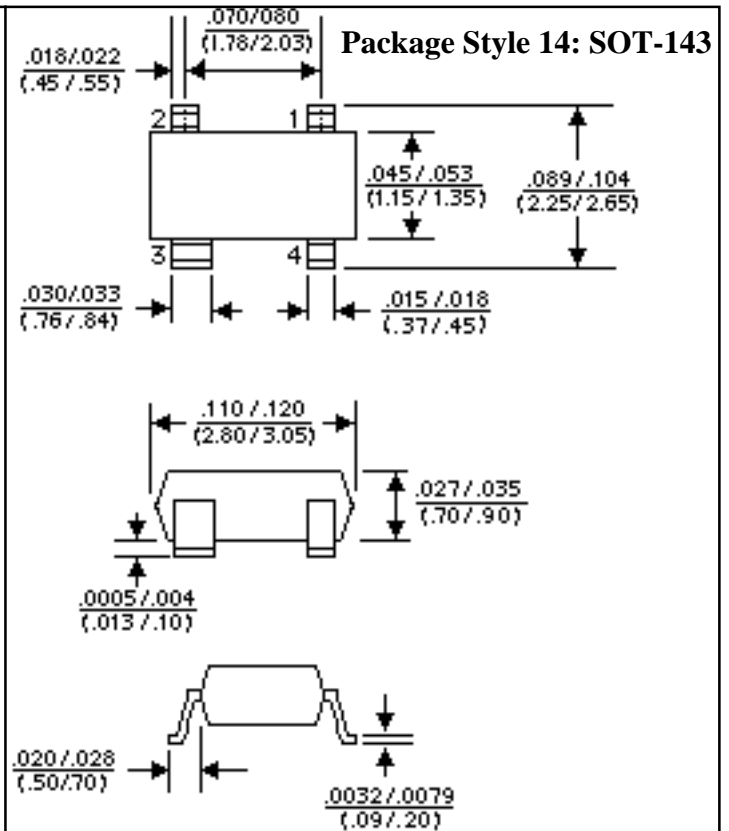
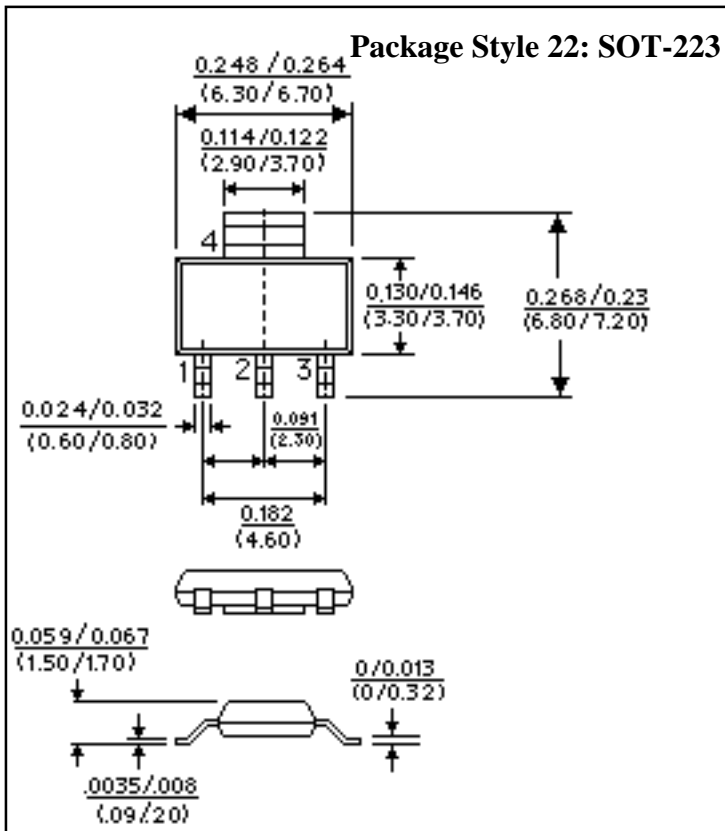


LEAD	1	2	3	4
Package	Base	Emitter	Collector	Emitter
70, 35 & 23				

NOTES: (unless otherwise specified)

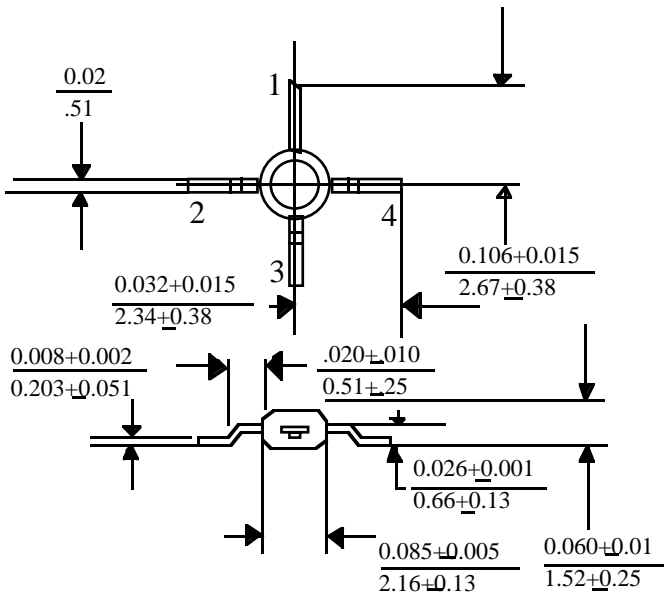
- Dimensions are $\frac{\text{in}}{\text{mm}}$
- Tolerances:
in .xxx = $\pm .005$
mm .xx = $\pm .13$
- All dimensions nominal; subject to change without notice

MEDIUM POWER SILICON MICROWAVE TRANSISTOR

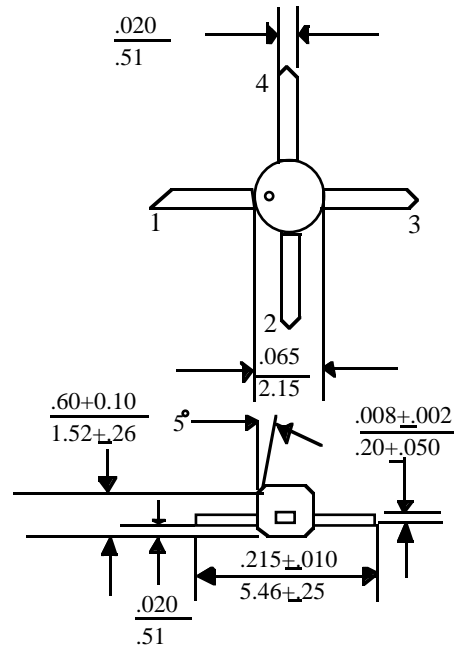


MIDIUM POWER SILICON MICROWAVE TRANSISTOR

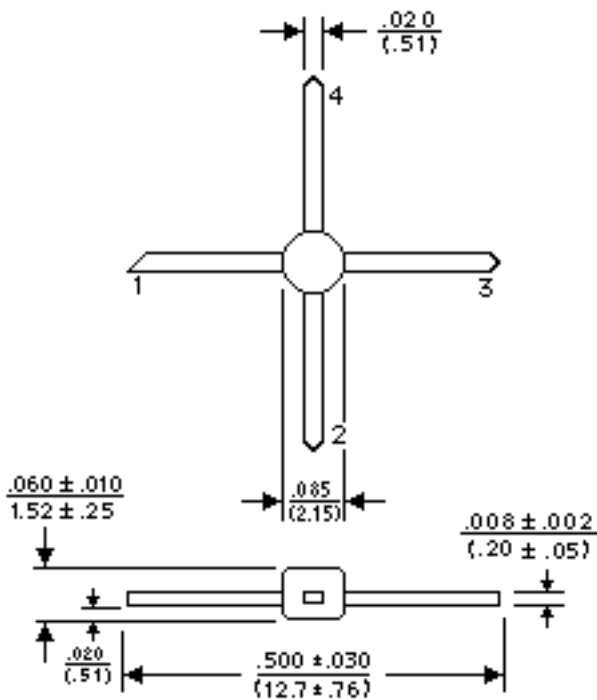
Package Style 4SM: 85 mil Plastic, Micro-X Surface Mount



Package Style 4SL: 85 mil Plastic, Micro-X Short Lead



Package Style 4: 85 mil Plastic, Micro-X



Package Style 10: 145 mil Plastic Macro-X

