BIPOLARICS, INC. Part Number B15V180

MEDIUM POWER SILICON MICROWAVE TRANSISTOR

PRODUCT DATA SHEET

DESCRIPTION AND APPLICATIONS:

Bipolarics' B15V180 is a high performance silicon bipolar transistor intended for medium power linear and Class C applications at VHF, UHF and microwave frequencies in 7.2 and 12V systems. Depending on package type, the B15V180 can operate at up to 0.5W. These applications include high intermod receivers, CATV and instrumentation amplifiers as well as pre-drivers, drivers and final stages in transmitter applications such as cellular telephone.

FEATURES:

- High Gain Bandwidth Product
  f_t = 8 GHz typ @ I_C = 14 mA
- High Gain
  $|S_{21}|^2$ = 14.2 dB @ 1.0 GHz
  8.2 dB @ 2.0 GHz
- Dice, Plastic, Hermetic and Surface Mount packages available

PERFORMANCE DATA:

- Electrical Characteristics (T_A = 25°C)

Absolute Maximum Ratings:

SYMBOL	PARAMETERS	RATING	UNITS
V_{CBO}	Collector-Base Voltage	25	V
V_{CEO}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	1.5	V
I_C	Collector Current (continuous)	240	mA
$I_{C_{MAX}}$	Collector Current (instantaneous)	360	mA
$T_{J\,(1)}$	Junction Temperature	200	°C
T_{STG}	Storage Temperature	-65 to 150	°C

(1) Depends on package

SYMBOL	PARAMETERS & CONDITIONS V_{CE} = 8V, I_C =120 mA, Class A, unless stated		UNIT	MIN.	TYP.	MAX.
f_t	Gain Bandwidth Product		GHz		8.0	
$\|S_{21}\|^2$	Insertion Power Gain:	f = 1.0 GHz f = 2.0 GHz	dB dB		14.2 8.2	
P_{1dB}	Power output at 1dB compression:	f = 1.0 GHz I_C = 150 mA	dBm		30.0	
NF	Noise Figure: V_{CE} =8V, I_C =20 mA	f = 1.0 GHz	dB		1.6	
h_{FE}	Forward Current Transfer Ratio: V_{CE} = 5V, I_C =30 mA			30	100	300
I_{CBO}	Collector Cutoff Current : V_{CB} =8V		µA			0.8
C_{CB}	Collector Base Capacitance: V_{CB} =8V	f = 1MHz	pF		.75	

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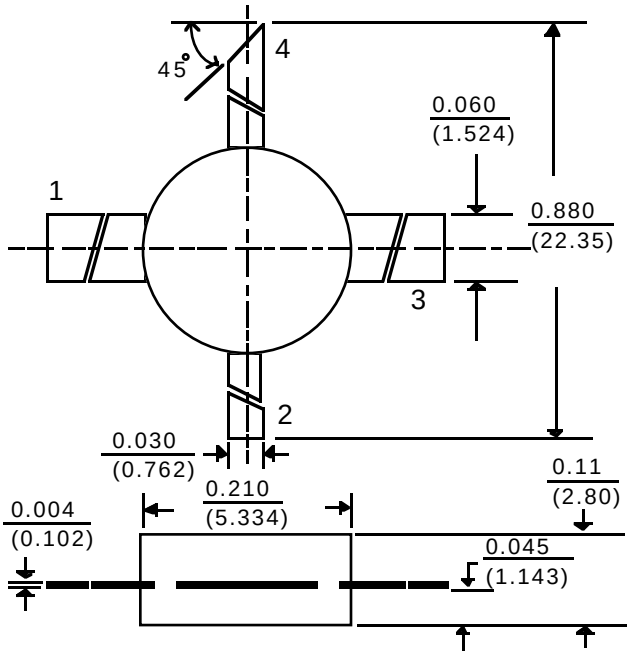
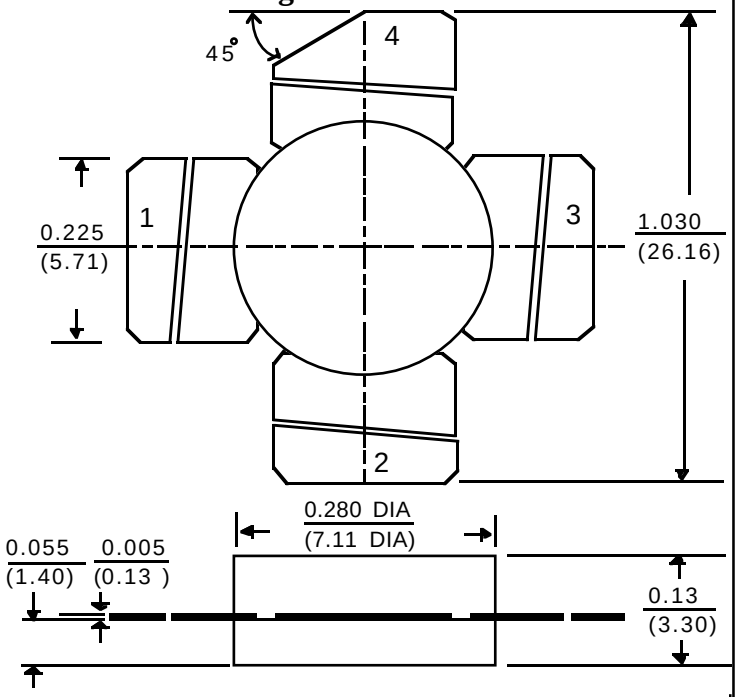
SILICON MICROWAVE POWER TRANSISTOR

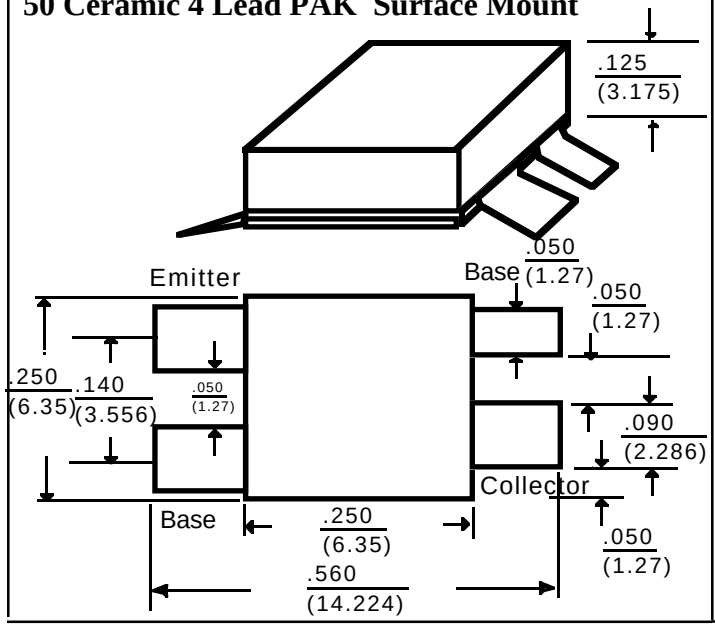
20 0.200" Pill Package



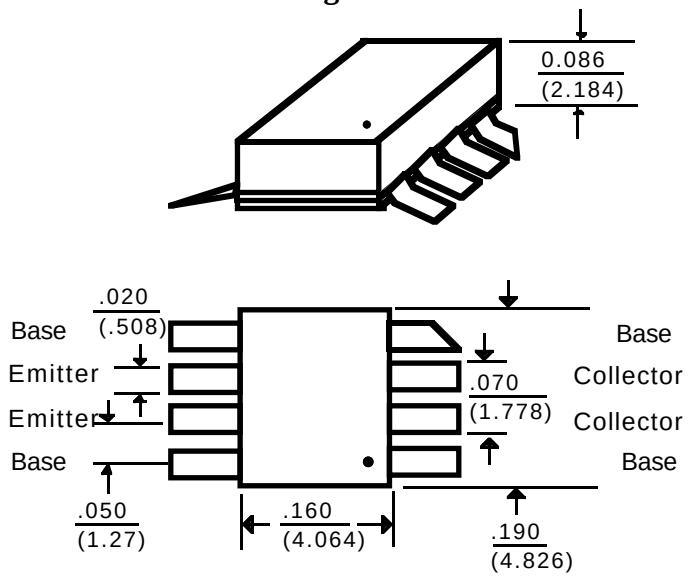
28 0.280" Pill Package



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 = ± .005
   mm .xx = ± .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