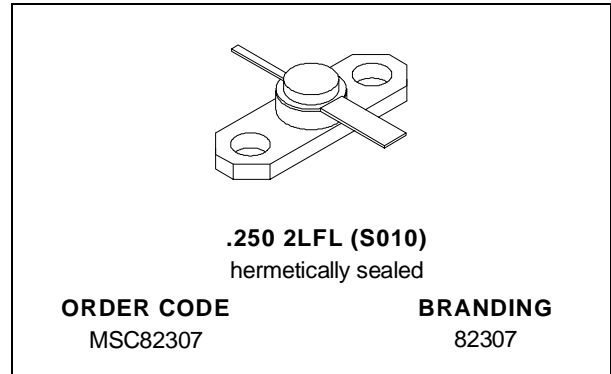


RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIER APPLICATIONS

PRELIMINARY DATA

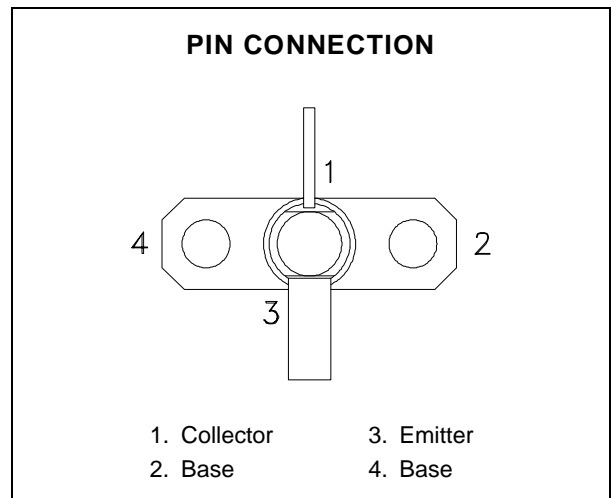
- REFRACTORY/GOLD METALLIZATION
- VSWR CAPABILITY 20:1 @ RATED CONDITIONS
- HERMETIC STRIPAC[®] PACKAGE
- P_{OUT} = 7.0 W MIN. WITH 9.6 dB GAIN



DESCRIPTION

The MSC82307 is a common base hermetically sealed silicon NPN microwave power transistor utilizing a rugged overlay die geometry. This device is capable of withstanding 20:1 load VSWR at any phase angle under rated conditions.

The MSC82307 was designed for Class C amplifier/oscillator applications in the 1.5 - 2.3 GHz frequency range.



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation* (T _C ≤ 50°C)	21.4	W
I _C	Device Current*	1.2	A
V _{CC}	Collector-Supply Voltage*	26	V
T _J	Junction Temperature	200	°C
T _{STG}	Storage Temperature	- 65 to +200	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance*	7.0	°C/W
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*Applies only to rated RF amplifier operation

MSC82307

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 1mA	I _E = 0mA	44	—	—	V
BV _{EBO}	I _E = 1mA	I _C = 0mA	3.5	—	—	V
BV _{CER}	I _C = 5mA	R _{BE} = 10Ω	44	—	—	V
I _{CBO}	V _{CB} = 22V		—	—	0.5	mA
h _{FE}	V _{CE} = 5V	I _C = 500mA	30	—	300	—

DYNAMIC

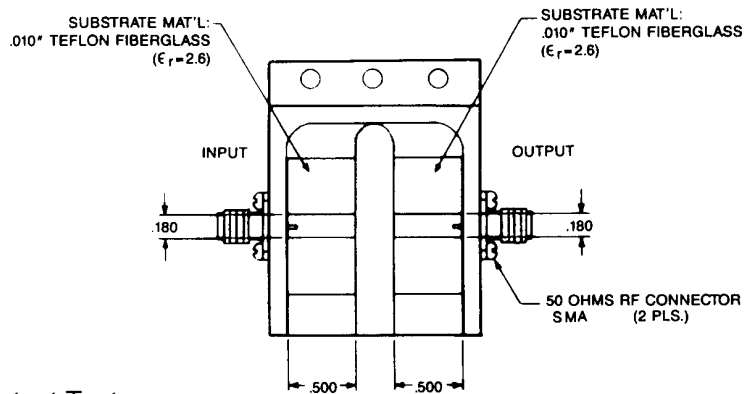
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 2.3 GHz	P _{IN} = 0.76 W	V _{CC} = 22 V	7.0	8.0	—	W
η _C	f = 2.3 GHz	P _{IN} = 0.76 W	V _{CC} = 22 V	40	45	—	%
G _P	f = 2.3 GHz	P _{IN} = 0.76 W	V _{CC} = 22 V	9.6	10.2	—	dB
C _{OB}	f = 1 MHz	V _{CB} = 22 V		—	—	8.5	pF

TEST CIRCUIT

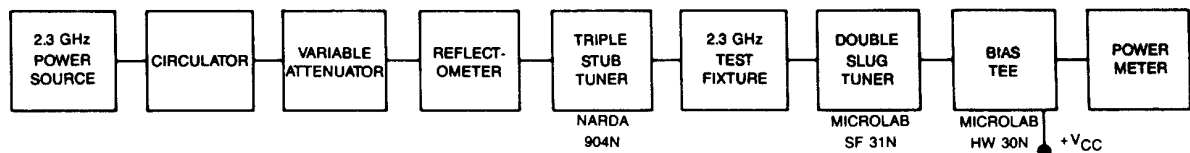
Ref.: Dwg. No. C125518

All dimensions are in inches.

Frequency 2.3 GHz

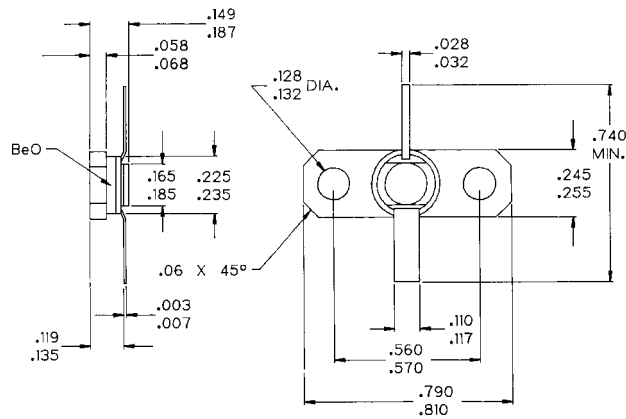


RF Amplifier Power Output Test



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J135021C



NOTES:
 1. ALL TOLERANCE \pm .010 EXCEPT WHERE NOTED;
 DIMENSIONS IN INCHES.

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