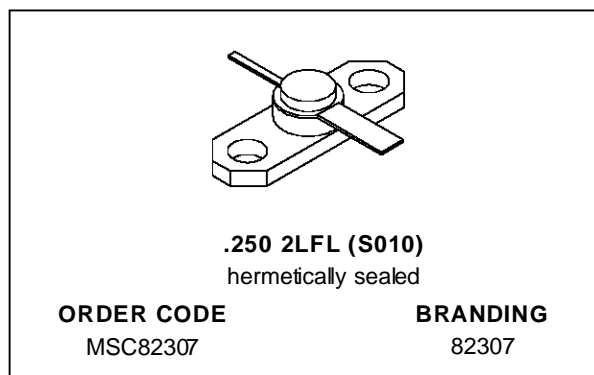


RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIER APPLICATIONS

PRELIMINARY DATA

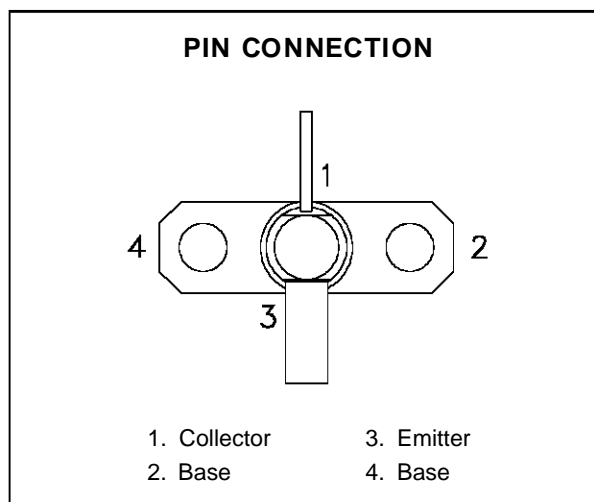
- REFRACTORY/GOLD METALLIZATION
- VSWR CAPABILITY 20:1 @ RATED CONDITIONS
- HERMETIC STRIPAC® PACKAGE
- P_{OUT} = 7.0 W MIN. WITH 9.6 dB GAIN



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 ($T_{case} = 25^{\circ}C$)

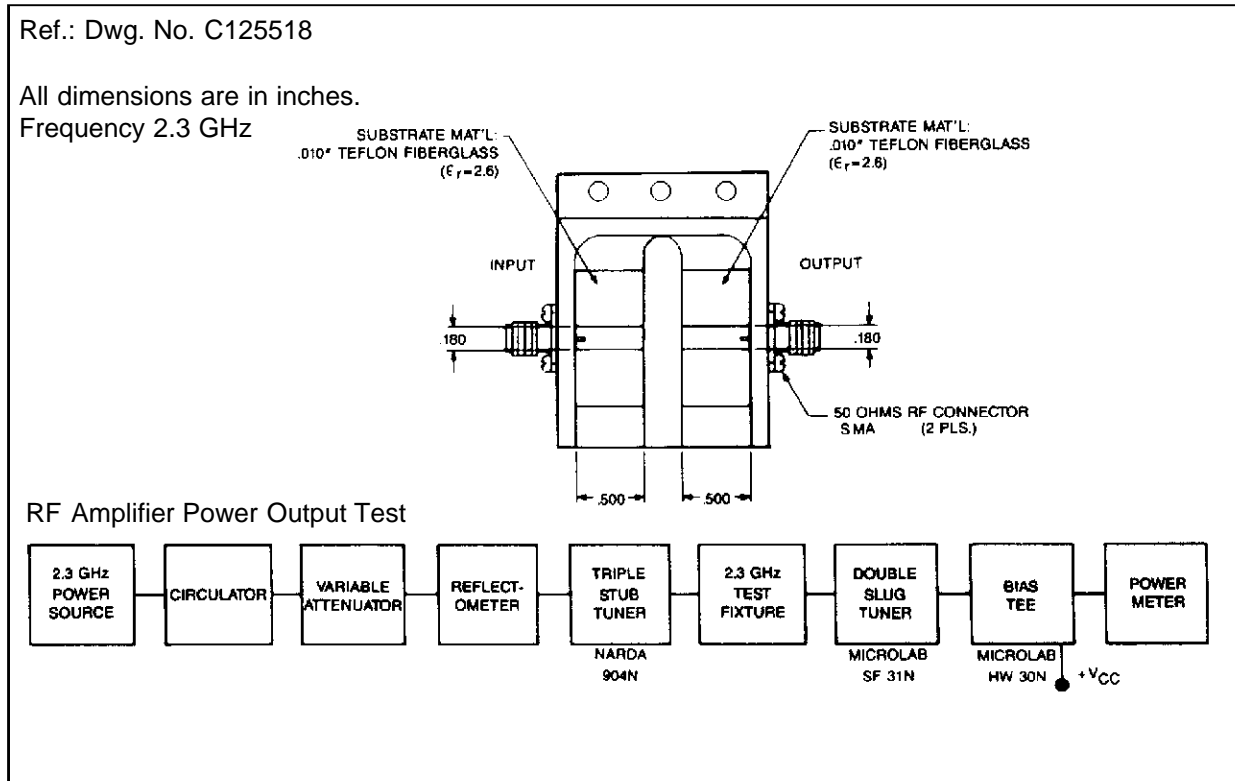
STATIC

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}	$I_C = 5mA$	$R_{BE} = 10\Omega$	44	—	—	V
I_{CBO}	$V_{CB} = 22V$		—	—	0.5	mA
h_{FE}	$V_{CE} = 5V$	$I_C = 500mA$	30	—	300	—

DYNAMIC

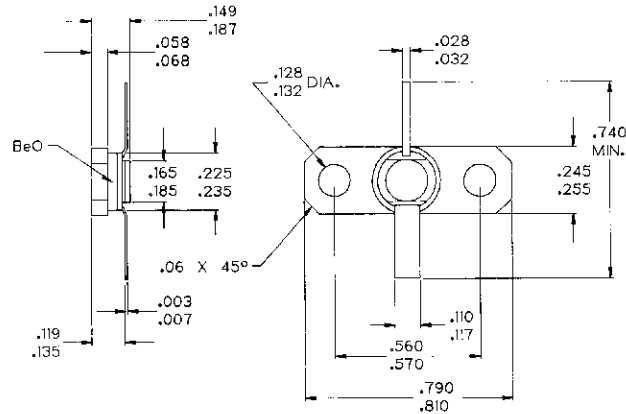
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 2.3 GHz$	$P_{IN} = 0.76 W$	$V_{CC} = 22 V$	7.0	8.0	—	W
η_C	$f = 2.3 GHz$	$P_{IN} = 0.76 W$	$V_{CC} = 22 V$	40	45	—	%
G_P	$f = 2.3 GHz$	$P_{IN} = 0.76 W$	$V_{CC} = 22 V$	9.6	10.2	—	dB
C_{OB}	$f = 1 MHz$	$V_{CB} = 22 V$		—	—	8.5	pF

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J135021C



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

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