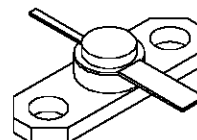


RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIER APPLICATIONS

PRELIMINARY DATA

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



.250 2LFL (S010)
hermetically sealed

ORDER CODE

MSC82307

BRANDING

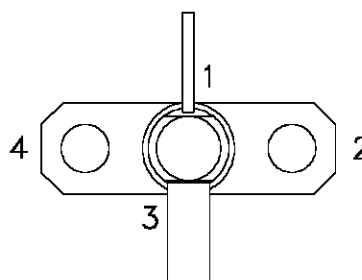
82307

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.

PIN CONNECTION



1. Collector

2. Base

3. Emitter

4. Base

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 50^{\circ}\text{C}$)	21.4	W
I_C	Device Current*	1.2	A
V_{CC}	Collector-Supply Voltage*	26	V
T_J	Junction Temperature	200	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +200	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	7.0	$^{\circ}\text{C/W}$
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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

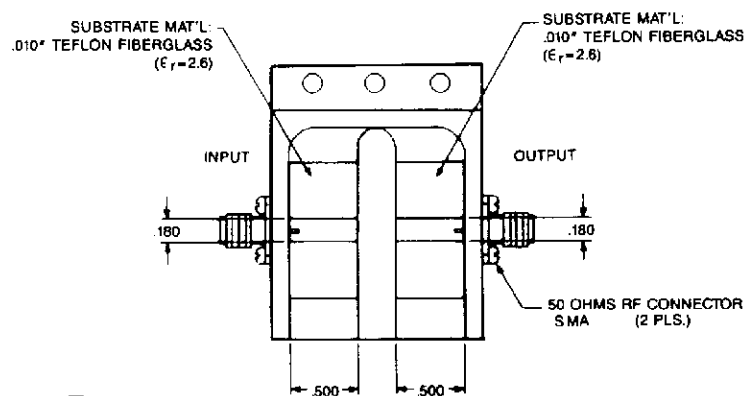
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 2.3 \text{ GHz}$ $P_{IN} = 0.76 \text{ W}$ $V_{CC} = 22 \text{ V}$	7.0	8.0	—	W
η_c	$f = 2.3 \text{ GHz}$ $P_{IN} = 0.76 \text{ W}$ $V_{CC} = 22 \text{ V}$	40	45	—	%
G_p	$f = 2.3 \text{ GHz}$ $P_{IN} = 0.76 \text{ W}$ $V_{CC} = 22 \text{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

TEST CIRCUIT

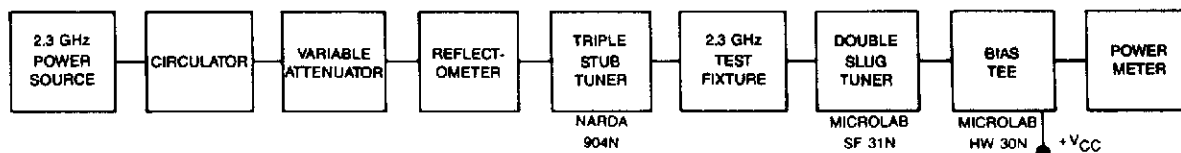
Ref.: Dwg. No. C125518

All dimensions are in inches.

Frequency 2.3 GHz

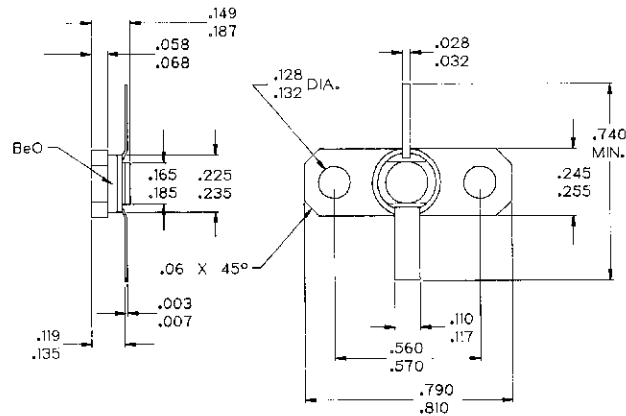


RF Amplifier Power Output Test



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J135021C



NOTES:

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

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