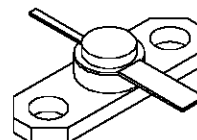


RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIER APPLICATIONS

PRELIMINARY DATA

- REFRACTORY\GOLD METALLIZATION
- VSWR CAPABILITY 20:1 @ RATED CONDITIONS
- HERMETIC STRIPAC® PACKAGE
- $P_{OUT} = 5.5 \text{ W MIN. WITH } 9.6 \text{ dB GAIN}$



.250 2LFL (S010)
hermetically sealed

ORDER CODE

MSC82306

BRANDING

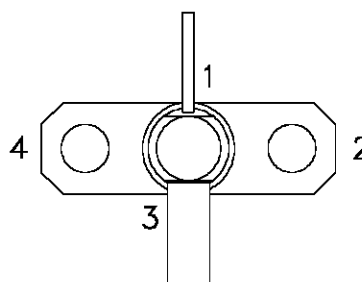
82306

DESCRIPTION

The MSC82306 is a common base hermetically sealed silicon NPN microwave power transistor utilizing a rugged overaly die geometry. This device is capable of withstanding 20:1 load VSWR at any phase angle under rated conditions.

The MSC82306 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* ($T_c \leq 50^{\circ}\text{C}$)	16.7	W
I_c	Device Current*	900	mA
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*	9.0	$^{\circ}\text{C/W}$
---------------	-----------------------------------	-----	----------------------

*Applies only to rated RF amplifier operation

MSC82306

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

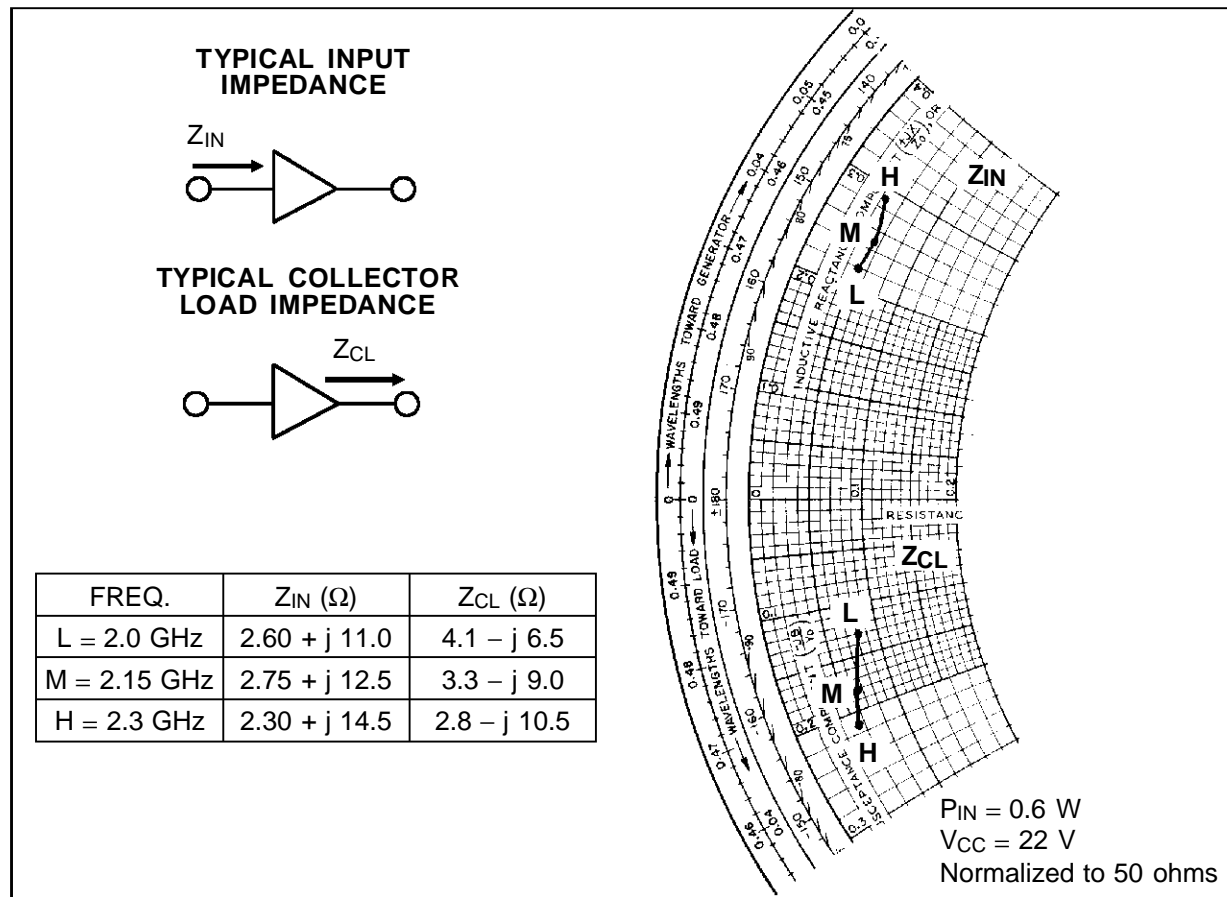
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 1\text{mA}$	$I_{\text{E}} = 0\text{mA}$	44	—	—	V
BV_{EBO}	$I_{\text{E}} = 1\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.5	—	—	V
BV_{CER}	$I_{\text{C}} = 5\text{mA}$	$R_{\text{BE}} = 10\Omega$	44	—	—	V
I_{CBO}	$V_{\text{CB}} = 22\text{V}$		—	—	0.5	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 400\text{mA}$	30	—	300	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 2.3\text{ GHz}$	$P_{\text{IN}} = 0.6\text{ W}$	$V_{\text{CC}} = 22\text{ V}$	5.5	6.3	—	W
η_{C}	$f = 2.3\text{ GHz}$	$P_{\text{IN}} = 0.6\text{ W}$	$V_{\text{CC}} = 22\text{ V}$	40	45	—	%
G_{P}	$f = 2.3\text{ GHz}$	$P_{\text{IN}} = 0.6\text{ W}$	$V_{\text{CC}} = 22\text{ V}$	9.6	10.2	—	dB
C_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 22\text{ V}$		—	—	7.0	pF

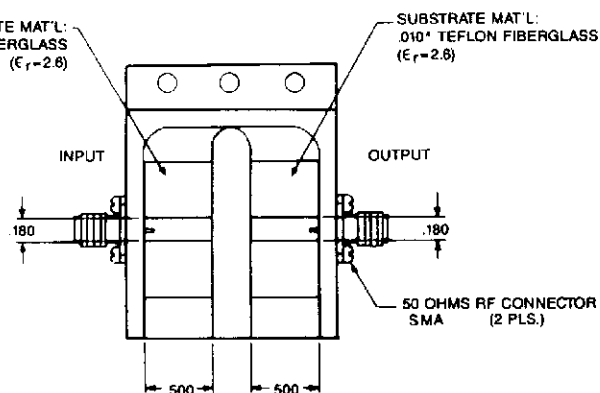
IMPEDANCE DATA



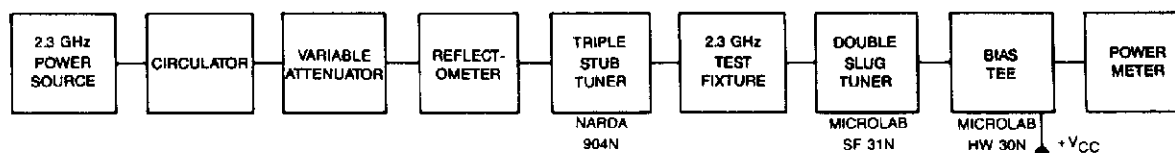
TEST CIRCUIT

Ref.: Dwg. No. C125518

All dimensions are in inches.
 Frequency 2.3 GHz

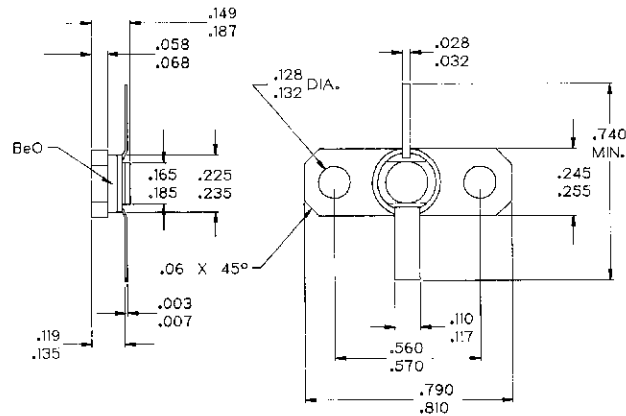


RF Amplifier Power Output Test



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J135021C



NOTES:

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

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may results from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A