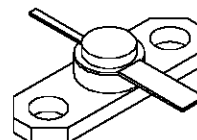


RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIER APPLICATIONS

PRELIMINARY DATA

- REFRACTORY/GOLD METALLIZATION
- VSWR CAPABILITY 20:1 @ RATED CONDITIONS
- HERMETIC STRIPAC® PACKAGE
- $P_{OUT} = 3.8 \text{ W MIN. WITH } 10.0 \text{ dB GAIN}$



.250 2LFL (S010)
hermetically sealed

ORDER CODE

MSC82304

BRANDING

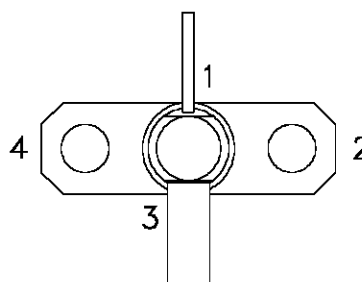
82304

DESCRIPTION

The MSC82304 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 MSC82304 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* ($T_C \leq 50^{\circ}\text{C}$)	11.5	W
I_C	Device Current*	600	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*	13	$^{\circ}\text{C/W}$
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*Applies only to rated RF amplifier operation

MSC82304

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

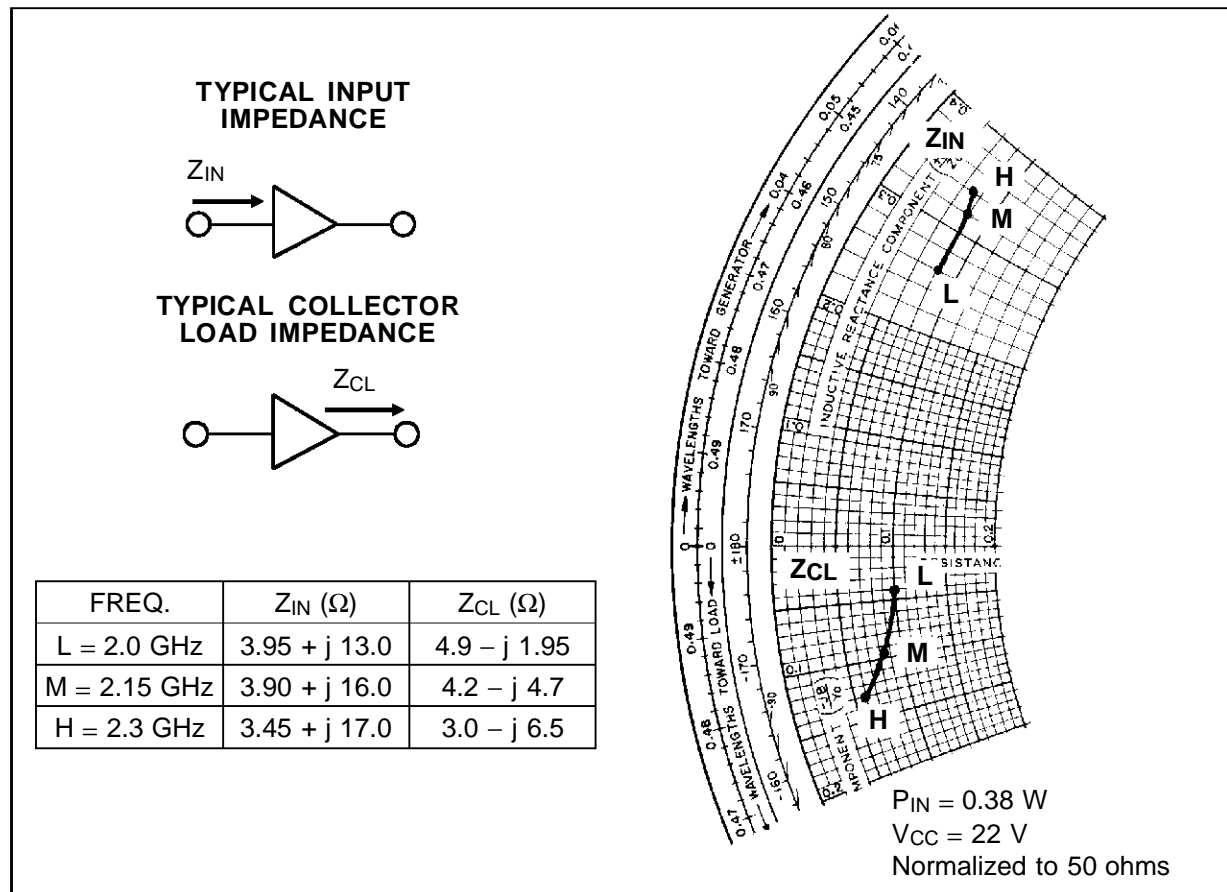
STATIC

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}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 250\text{mA}$	30	—	300	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 2.3\text{ GHz}$	$P_{\text{IN}} = 0.38\text{ W}$	$V_{\text{CC}} = 22\text{ V}$	3.8	—	—	W
η_{C}	$f = 2.3\text{ GHz}$	$P_{\text{IN}} = 0.38\text{ W}$	$V_{\text{CC}} = 22\text{ V}$	40	—	—	%
G_{P}	$f = 2.3\text{ GHz}$	$P_{\text{IN}} = 0.38\text{ W}$	$V_{\text{CC}} = 22\text{ V}$	10.0	—	—	dB
C_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 22\text{ V}$		—	—	5.0	pF

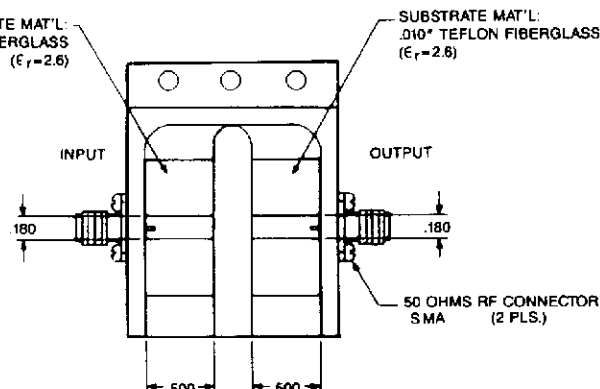
IMPEDANCE DATA



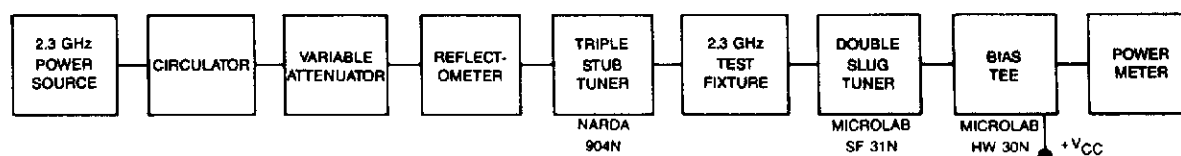
TEST CIRCUIT

Ref.: Dwg. No. C125518

All dimensions are in inches.
 Frequency 2.3 GHz

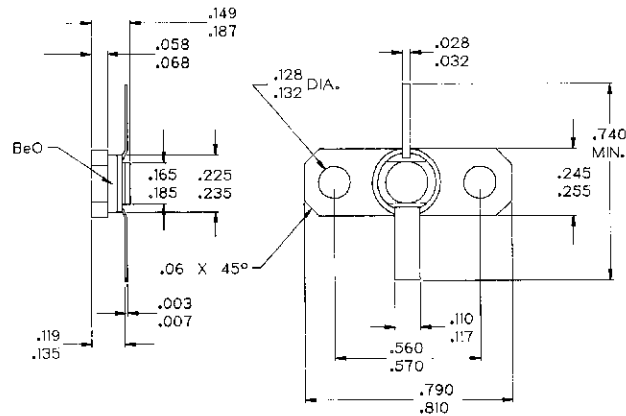


RF Amplifier Power Output Test



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J135021C



NOTES:

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

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