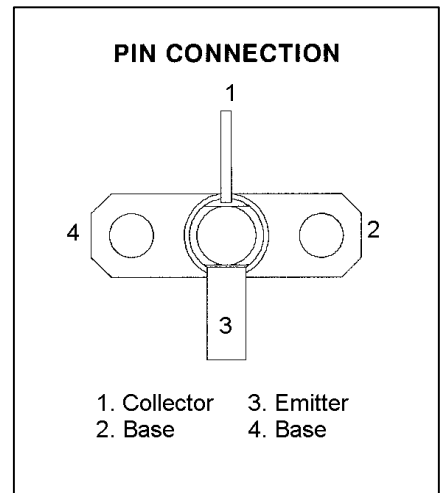
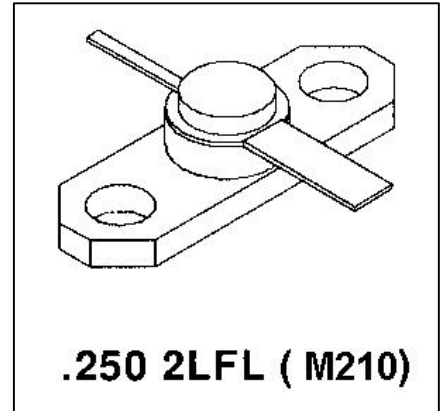


MS3302

RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIER APPLICATIONS

Features

- 3.0 GHz
- GOLD METALIZATION
- EMITTER BALLASTED
- $P_{OUT} = 4.5$ W MINIMUM
- $G_P = 4.5$ dB
- $\infty:1$ VSWR CAPABILITY @ RATED CONDITIONS
- COMMON BASE CONFIGURATION



DESCRIPTION:

The MS3302 is a common base silicon NPN microwave transistor designed for general purpose applications over the 1.0 – 3.0 GHz frequency range. The MS3302 utilizes an emitter ballasted die geometry for maximum load VSWR capability under rated conditions.

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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation	17.6	W
V_{CC}	Collector-Supply Voltage	30	V
I_C	Device Current	700	mA
T_J	Junction Temperature	200	°C
T_{STG}	Storage Temperature	-65 to +200	°C

Thermal Data

$R_{TH(J-C)}$	Thermal Resistance Junction-case	8.5	°C/W
---------------	----------------------------------	-----	------

*Applies only to rated RF amplifier operation

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

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{cbo}	I _C = 1mA	I _E = 0mA	45	---	---	V
BV _{cer}	I _C = 5mA	R _{BE} = 10Ω	45	---	---	V
BV _{ebo}	I _E = 1mA	I _C = 0mA	3.5	---	---	V
I _{cbo}	V _{CE} = 28V		---	---	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 = 3.0GHz	P _{IN} = 1.59W	V _{CC} = 28V	4.5	---	---	W
G _P	f = 3.0GHz	P _{IN} = 1.59W	V _{CC} = 28V	4.5	---	---	dB
η _C	f = 3.0GHz	P _{IN} = 1.59W	V _{CC} = 28V	30	---	---	%
C _{OB}	f = 1 MHz	V _{CB} = 28V		---	---	7.5	pf

IMPEDANCE DATA

FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
1.0 GHz	1.7 + j7.2	9.5 + j15.5
1.7 GHz	2.0 + j11.2	4.2 + j6.7
2.0 GHz	2.4 + j14.0	3.5 + j2.5
2.3 GHz	3.6 + j17.4	3.1 + j1.2
2.7 GHz	6.0 + j21.0	3.0 – j3.8
3.0 GHz	9.5 + j24.0	3.0 – j7.2

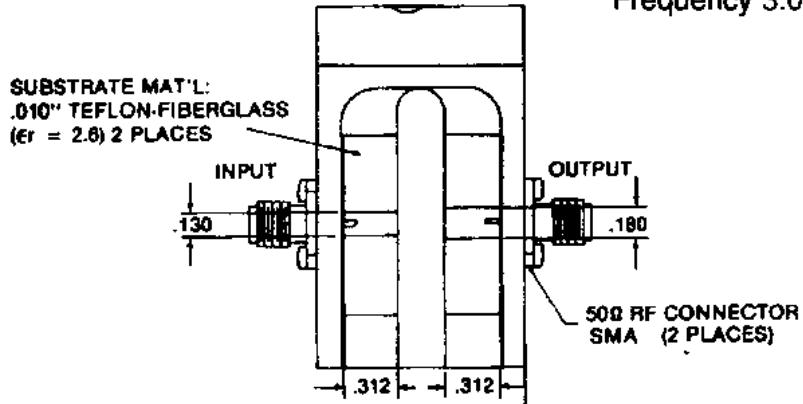
V_{CC} = 28V
P_{IN} = 1.6W

MS3302

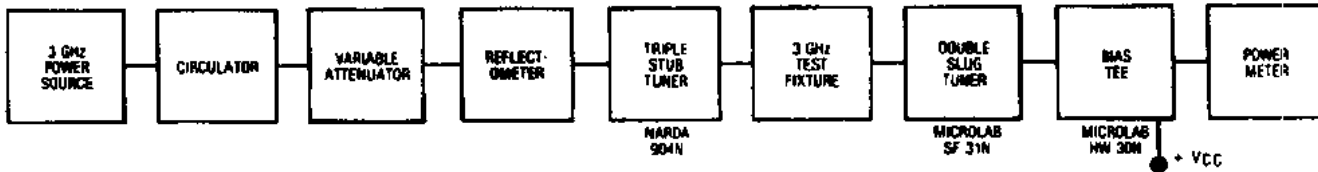
TEST CIRCUIT

Ref.: Dwg. No. C125562

All dimensions are in inches.
Frequency 3.0 GHz



RF Amplifier Power Output Test



PACKAGE MECHANICAL DATA

