ADVANCED POWER TECHNOLOGY RF®

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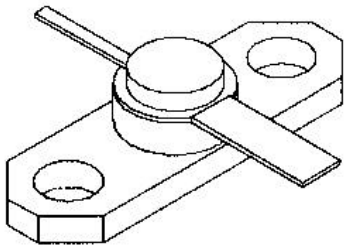
MS3302

RF & MICROWAVE TRANSISTORS
GENERAL PURPOSE AMPLIFIER APPLICATIONS

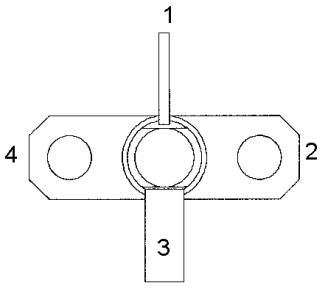


.250 2LFL (M210)

Features

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

PIN CONNECTION



1. Collector
2. Base
3. Emitter
4. Base

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 (Tcase = 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 (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BVcbo	I_C = 1mA	I_E = 0mA	45	---	---	V
BVcer	I_C = 5mA	R_{BE} = 10Ω	45	---	---	V
BVebo	I_E = 1mA	I_C = 0mA	3.5	---	---	V
Icbo	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

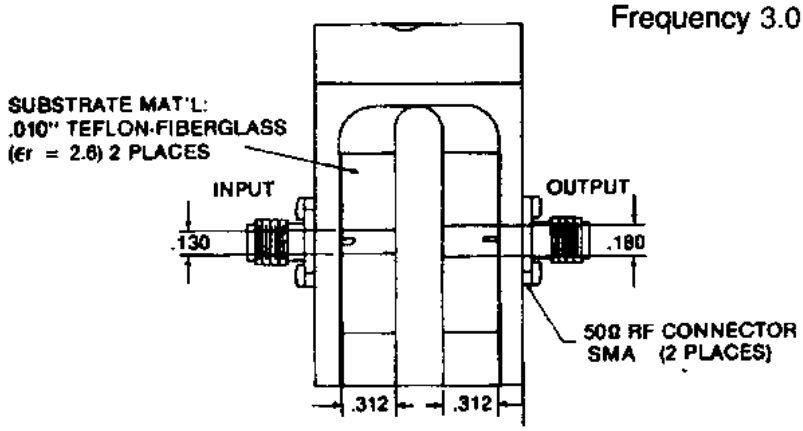
FREQ	$Z_{IN}(\Omega)$	$Z_{CL}(\Omega)$
1.0 GHz	1.7 + j7.2	9.5 + j15.5
1.7 GHz	2.0 + j11.2	4.2 + j6.7
2.0 GHz	2.4 + j14.0	3.5 + j2.5
2.3 GHz	3.6 + j17.4	3.1 + j1.2
2.7 GHz	6.0 + j21.0	3.0 – j3.8
3.0 GHz	9.5 + j24.0	3.0 – j7.2

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

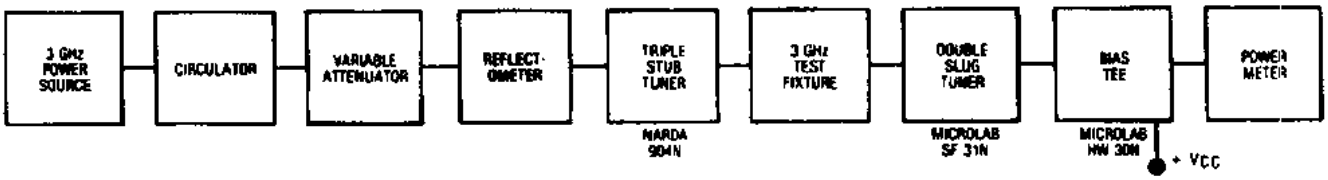
TEST CIRCUIT

Ref.: Dwg. No. C125562

All dimensions are in inches.
Frequency 3.0 GHz

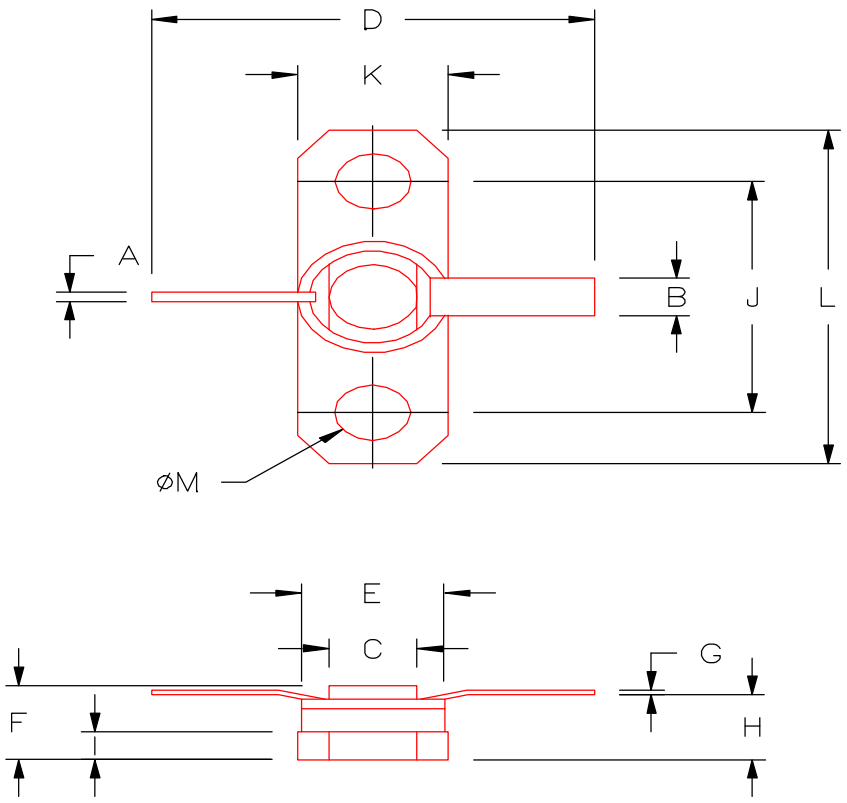


RF Amplifier Power Output Test



PACKAGE MECHANICAL DATA

PACKAGE STYLE M210



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.028/0,71	.032/0,81	J	.115/2,92	.145/3,68
B	.110/2,80	.117/2,97	K	.245/6,22	.255/6,48
C	.165/4,19	.185/4,70	L	.790/20,07	.810/20,57
D	.740/18,80		M	.128/3,25	.132/3,35
E	.225/5,72	.235/5,97			
F	.149/2,30	.187/4,75			
G	.003/0,08	.007/0,18			
H	.117/2,97	.133/3,38			
I	.416/10,57	.465/11,81			