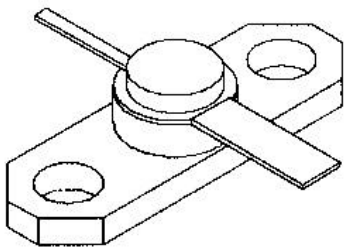
ADVANCED POWER TECHNOLOGY RF®

140 COMMERCE DRIVE
MONTGOMERYVILLE, PA
18936-1013
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MS3023

RF & MICROWAVE TRANSISTORS
GENERAL PURPOSE AMPLIFIER
APPLICATIONS

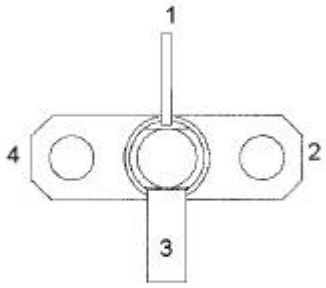


.250 2LFL (M210)

Features

- GOLD METALIZATION
- Pout = 3.0 W MINIMUM
- 2.0 GHz
- Gp = 7.8 dB
- INFINITE VSWR CAPABLE @ RATED CONDITIONS
- HERMETIC PACKAGE
- COMMON BASE CONFIGURATION

PIN CONNECTION



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

DESCRIPTION:

The MS3023 is a common base, hermetically sealed silicon NPN microwave power transistor. This device is designed for Class C applications in the 1 - 2 GHz frequency range. Gold metalization and emitter ballasting provide long-term reliability and superior ruggedness.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation*	21.8	W
V_{CC}	Collector-Supply Voltage*	35	V
I_C	Device Current*	600	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	8.0	°C/W

*Applies only to rated RF amplifier operation

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ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 1 mA	I_E = 0 mA	45	---	---	V
BV_{CER}	I_C = 5 mA	R_{BE} = 10 Ω	45	---	---	V
BV_{EBO}	I_E = 1 mA	I_C = 0 mA	3.5	---	---	V
I_{CBO}	V_{CE} = 28 V		---	---	1.0	mA
H_{FE}	V_{CE} = 5 V	I_C = 200 mA	15	---	120	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 2.0 GHz	P_{IN} = 0.5 W	V_{CC} = 28V	3.0	---	---	W
G_P	f = 2.0 GHz	P_{IN} = 0.5 W	V_{CC} = 28V	7.8	---	---	dB
η_C	f = 2.0 GHz	P_{IN} = 0.5 W	V_{CC} = 28V	35	---	---	%
C_{OB}	f =1 MHz	V_{CB} =28V		---	---	6.5	pF

IMPEDANCE DATA

FREQ	$Z_{IN}(\Omega)$	$Z_{CL}(\Omega)$
1.0 GHz	4.4 + j5.5	9.6 + j16.0
1.5 GHz	4.5 + j9.0	4.3 + j7.0
2.0 GHz	4.6 + j12.5	3.0 + j1.0

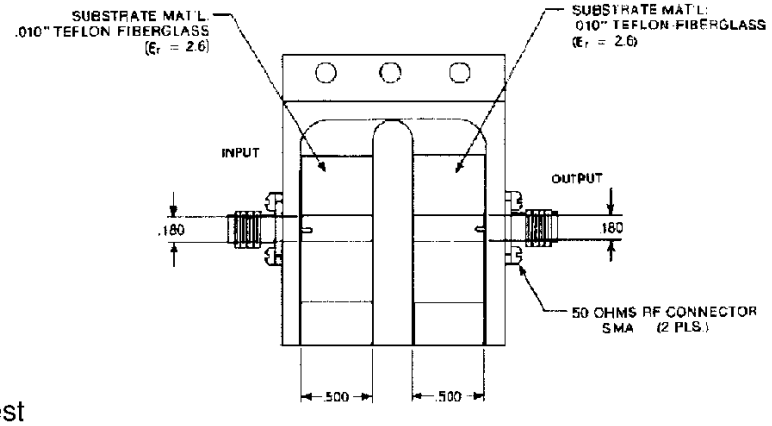
P_{IN}= 0.5=W V_{CC}=28V

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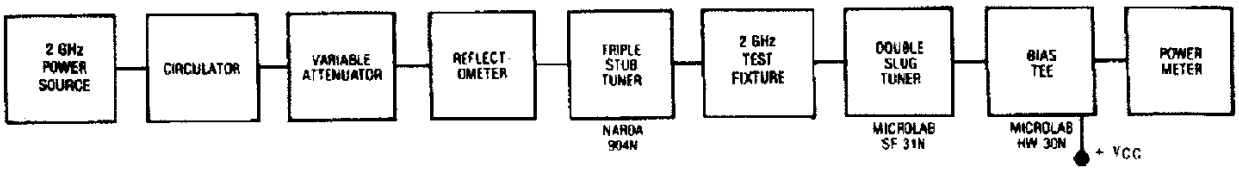
TEST CIRCUIT

Ref.: Dwg. No. C125518

All dimensions are in inches.
Frequency 2.0 GHz



RF Amplifier Power Output Test



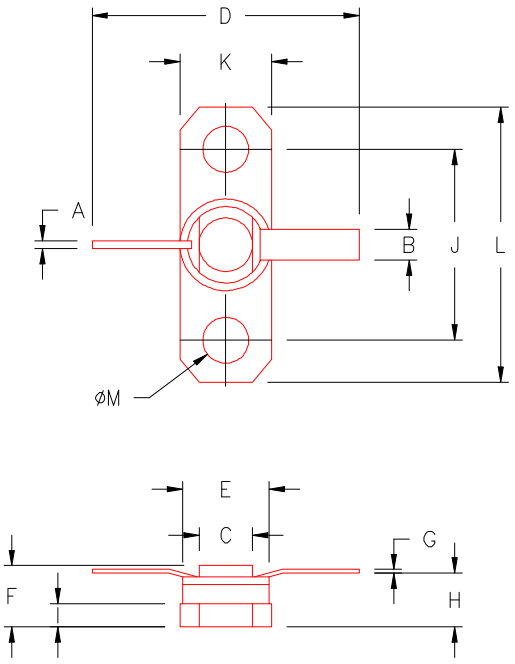
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ADVANCED POWER TECHNOLOGY RF®

MS3023

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	.560/14,22	.570/14,48
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	.058/1,47	.068/1,73			

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