

MS2222

**RF & MICROWAVE TRANSISTORS
L – BAND RADAR APPLICATIONS**

Features

- 1.2 – 1.4 GHz
- 28 VOLTS
- 5 : 1 VSWR CAPABILITY @ RATED CONDITIONS
- P_{OUT} = 14.5 WATTS
- G_P = 8.6 dB MINIMUM
- INPUT/OUTPUT MATCHING
- COMMON BASE CONFIGURATION

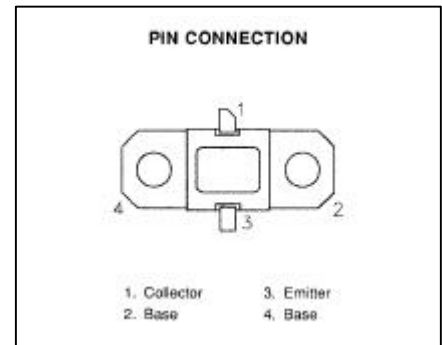


DESCRIPTION:

The MS2222 is a NPN silicon bipolar transistor designed for L-Band pulsed radar applications.

Internal impedance matching assures consistent broadband performance and gold metalization provides maximum reliability under severe operation conditions.

The MS2222 utilizes an emitter ballasted die geometry for superior thermal stability under a wide range of pulse widths and duty cycles.



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

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation	37.5	W
I _C	Device Current	1.8	A
V _{CC}	Collector-Supply Voltage	32	V
T _J	Junction Temperature	250	°C
T _{STG}	Storage Temperature	-65 to +200	°C

Thermal Data

R _{TH(J-C)}	Junction-case Thermal Resistance	4.0	°C/W
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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 15 mA	I_E = 0 mA	48	---	---	V
BV_{EBO}	I_E = 1.5 mA	I_C = 0 mA	3.5	---	---	V
BV_{CER}	I_C = 15 mA	R_{BE} = 10Ω	48	---	---	V
I_{CES}	V_{CE} = 28 V	V_{BE} = 28 V	---	---	1.5	mA
h_{FE}	V_{CE} = 5 V	I_C = 1 A	30	---	300	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 1.2 - 1.4GHz	P_{IN} = 2W	V_{CC} = 28V	14.5	17	---	W
η_C	f = 1.2 - 1.4GHz	P_{IN} = 2W	V_{CC} = 28V	48	58	---	%
G_P	f = 1.2 - 1.4GHz	P_{IN} = 2W	V_{CC} = 28V	8.6	9.3	---	dB

Conditions: Pulse Width = 1000μS Duty Cycle = 10%

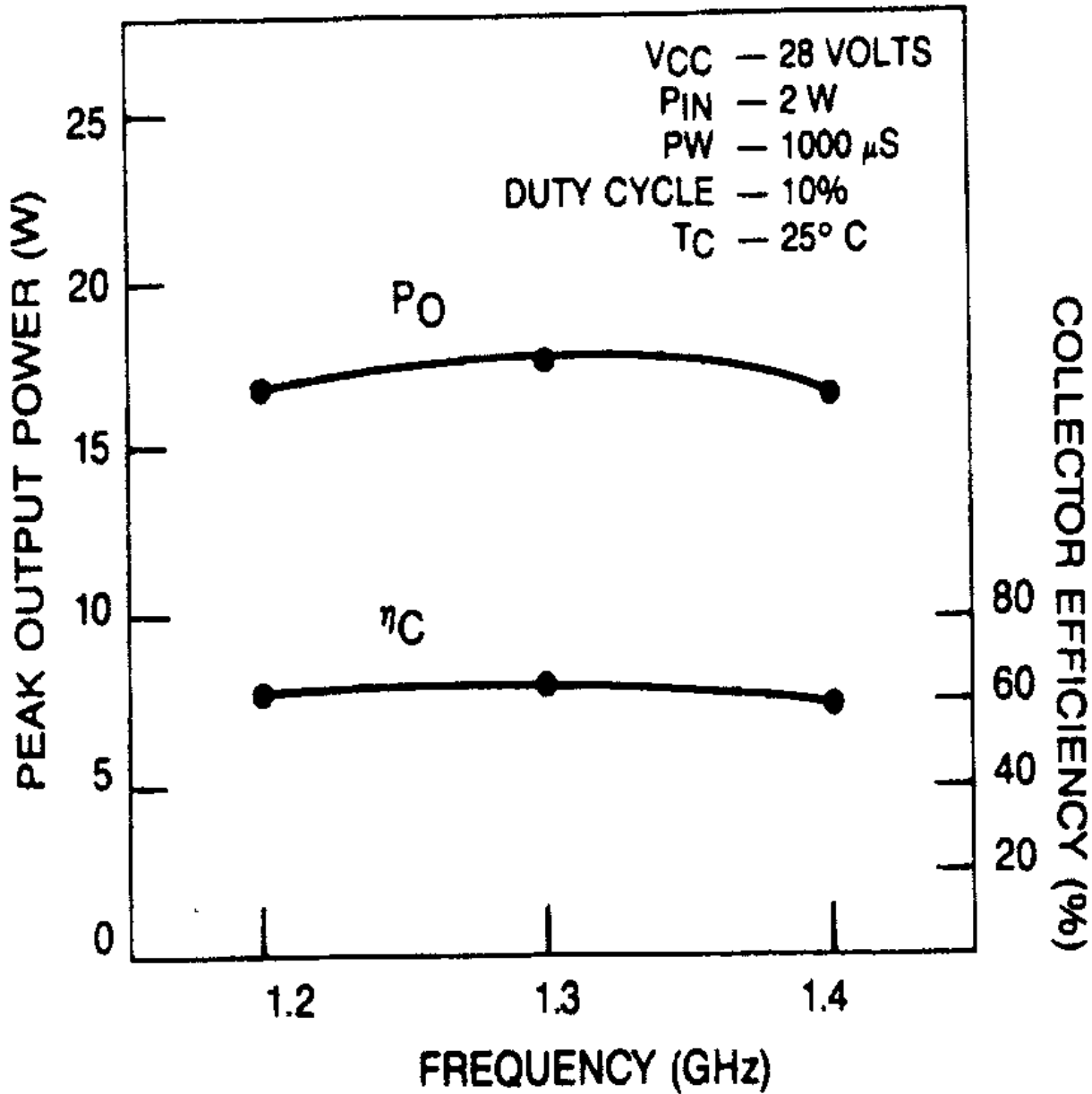
IMPEDANCE DATA

FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
1.2 GHz	3.0 + j6.5	16 + j3.0
1.3 GHz	3.5 + j7.5	13 + j6.0
1.4 GHz	5.0 + j7.0	11+ j5.0

P_{IN} = 2.0W ; V_{CC} = 28V; Normalized to 50 Ω.

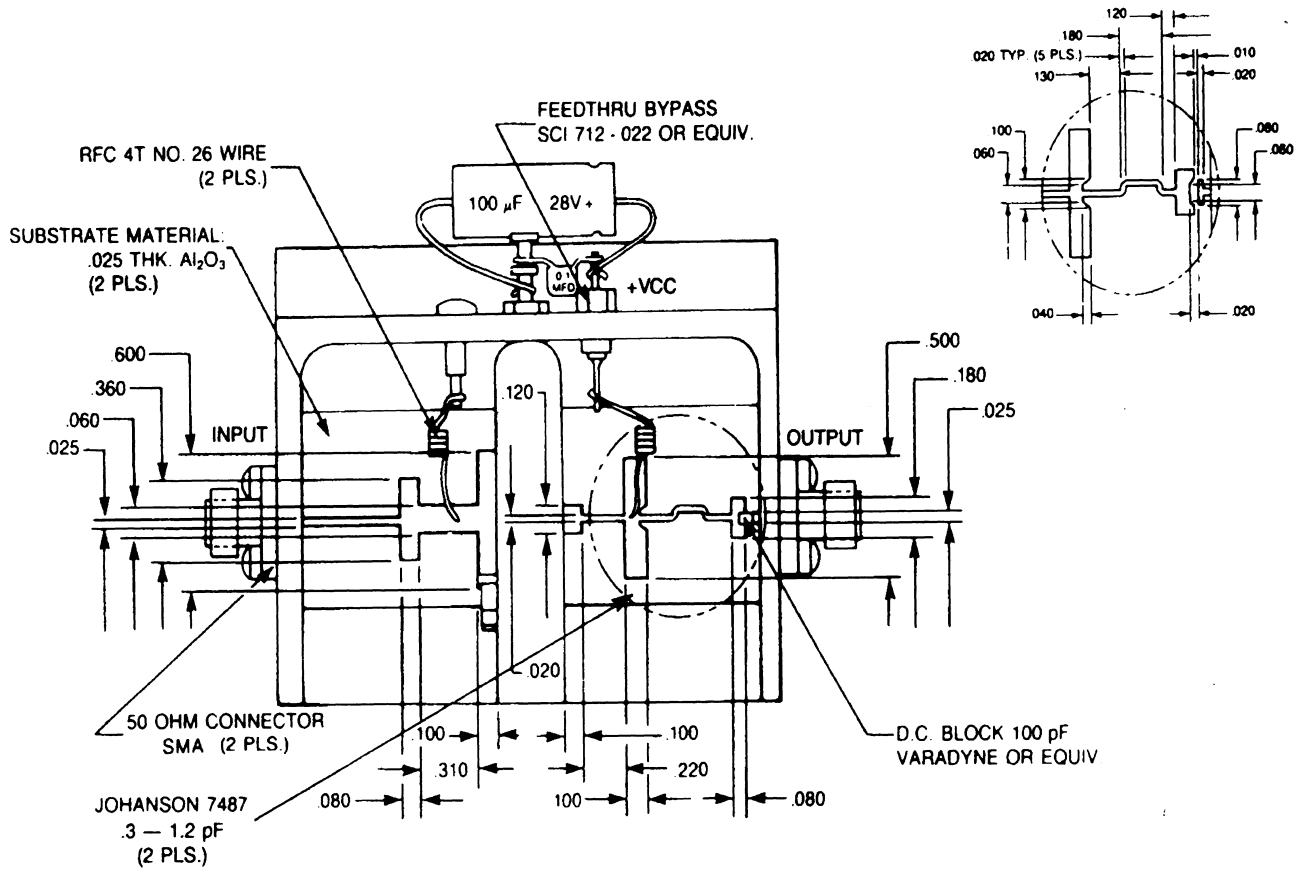
TYPICAL PERFORMANCE

**TYPICAL BROADBAND
PERFORMANCE**



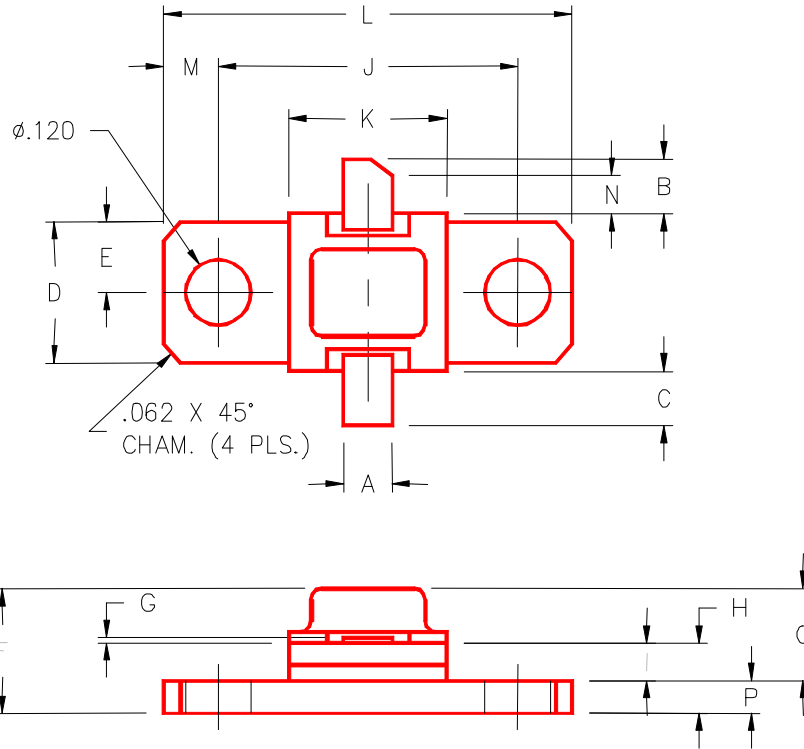
MS2222

TEST CIRCUIT



PACKAGE MECHANICAL DATA

PACKAGE STYLE M222



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.100/2,54		J	.562/14,28	
B	.110/2,80		K	.310/7,87	
C	.110/2,80		L	.800/20,32	
D	.296/7,52		M	.119/3,02	
E	.148/3,76		N	.050/1,27	
F		.230/5,84	O		.170/4,32
G	.003/0,08	.006/0,15	P	.062/1,58	
H	.118/3,00	.131/3,33			
I	.059/1,50				