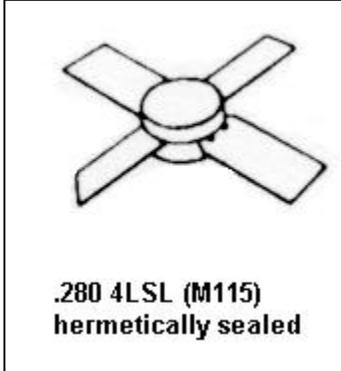


MS2202

**RF & MICROWAVE TRANSISTORS
AVIONICS APPLICATIONS**

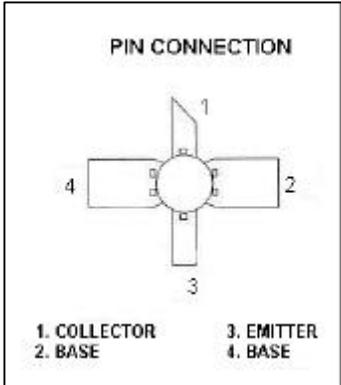
Features

- 1025 - 1150 MHz
- 35 VOLTS
- INPUT MATCHING
- P_{OUT} = 2.0 WATTS
- G_P = 9.0 dB MINIMUM
- LOW THERMAL RESISTANCE
- COMMON BASE CONFIGURATION



DESCRIPTION:

The MS2202 is a low power Class C NPN transistor specifically designed for avionics driver applications. This device is capable of withstanding an ∞:1 load VSWR at any phase angle under full rated conditions. Low RF thermal resistance and semi-automatic bonding techniques ensure high reliability and product consistency.



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

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation	10	W
I _C	Device Current	250	mA
V _{CC}	Collector Supply Voltage	37	V
T _J	Junction Temperature	200	°C
T _{STG}	Storage Temperature	-65 to +200	°C

Thermal Data

R _{TH(J-C)}	Junction-case Thermal Resistance	10.0	°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 = 1 mA	I_E = 0 mA	45	---	---	V
BV_{EBO}	I_E = 1 mA	I_C = 0 mA	3.5	---	---	V
BV_{CER}	I_C = 5 mA	R_{BE} = 10Ω	45	---	---	V
I_{CES}	V_{CE} = 35 V		---	---	1.0	mA
HFE	V_{CE} = 5 V	I_C = 100 mA	30	---	300	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 1025 - 1150 MHz	P_{IN} = 0.25W	V_{CC} = 35V	2.0	---	---	W
η_C	f = 1025 - 1150 MHz	P_{IN} = 0.25W	V_{CC} = 35V	35	---	---	%
G_p	f = 1025 - 1150 MHz	P_{IN} = 0.25W	V_{CC} = 35V	9.0	---	---	dB

Conditions Pulse Width = 10μSec Duty Cycle = 1%

IMPEDANCE DATA

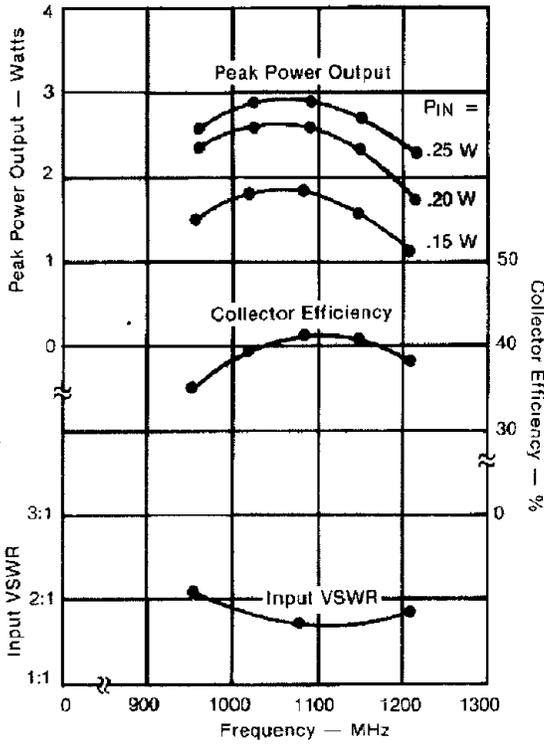
FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
960 MHz	10.7 + j7.0	26.5 + j41.0
1025 MHz	15.3 + j10.0	26.0 + j43.5
1090 MHz	17.8 + j10.2	23.5 + j44.0
1150 MHz	16.8 + j15.0	20.5 + j41.5
1215 MHz	14.4 + j13.0	17.5 + j37.5

P_{IN} = 0.25 W

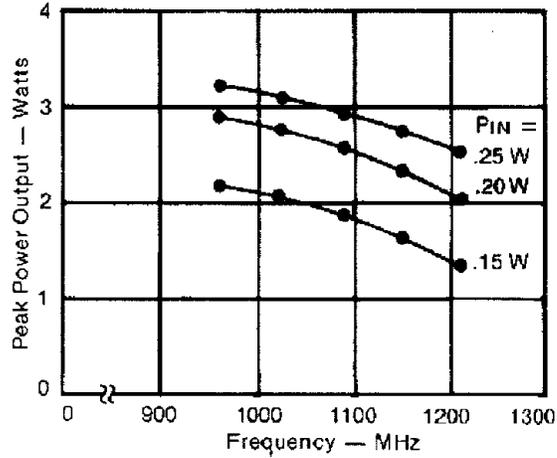
V_{CC} = 35 V

TYPICAL PERFORMANCE

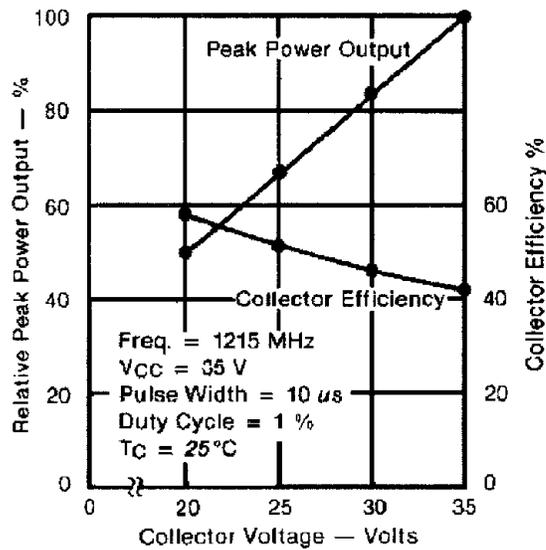
BROADBAND POWER AMPLIFIER



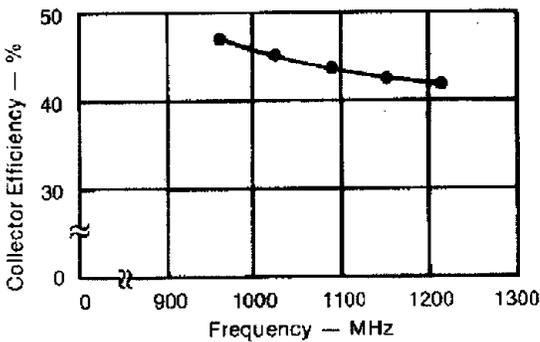
NARROWBAND PEAK POWER OUTPUT vs FREQUENCY



RELATIVE PEAK POWER OUTPUT & COLLECTOR EFFICIENCY vs COLLECTOR VOLTAGE



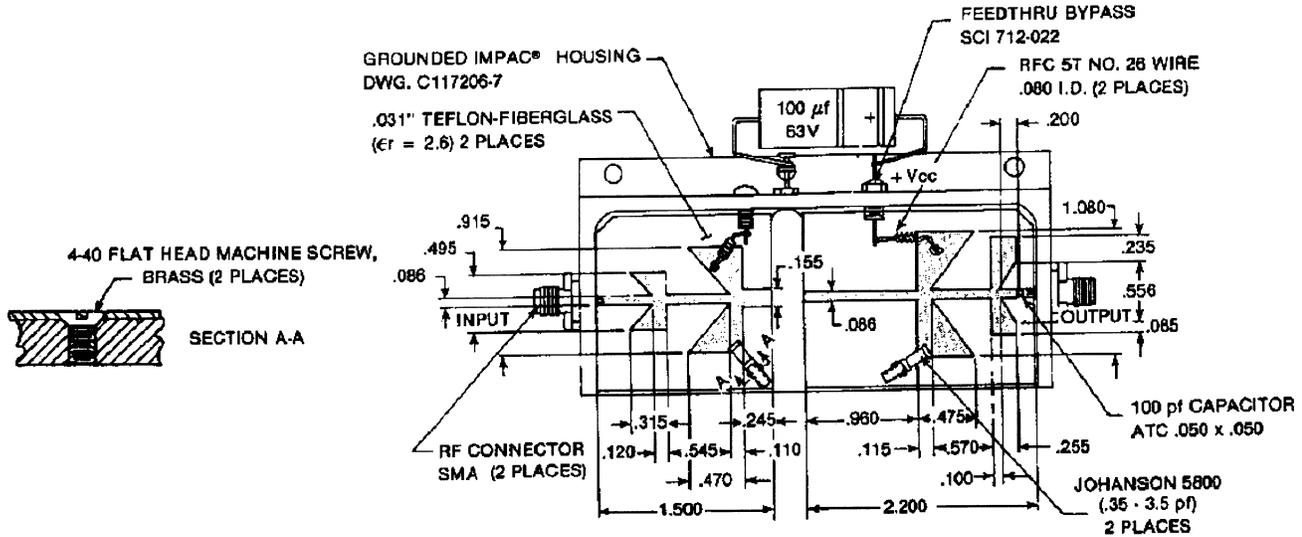
NARROWBAND COLLECTOR EFFICIENCY vs FREQUENCY



MS2202

TEST CIRCUIT

Ref.: Dwg. No. C127298



All dimensions are in inches.

PACKAGE MECHANICAL DATA

