THE DATASHEET OF

MS2212

ADVANCED POWER TECHNOLOGY RF®

140 COMMERCE DRIVE
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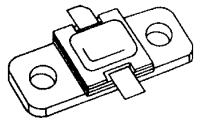
MS2212

RF & MICROWAVE TRANSISTORS
AVIONICS APPLICATIONS

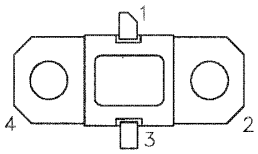
Features

- 960-1215 MHz
- GOLD METALLIZATION
- EMITTER SITE BALLASTED
- Pout = 15W
- Gp = 8.1 dB MINIMUM
- INTERNAL IMPEDANCE MATCHING
- INFINITE VSWR CAPABILITY @ RATED CONDITIONS
- COMMON BASE CONFIGURATION



.310 x .310 2LFL (M222)
hermetically sealed

PIN CONNECTION



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

DESCRIPTION:

The MS2212 is designed for specialized avionics applications, such as JTIDS, where maximum performance is required under a variety of pulse formats. Internal impedance matching provides superior broad band performance.

The MS2212 utilizes gold metallization and emitter ballasting to provide superior reliability and consistent performance under the most rugged pulse conditions.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CC}	Collector-Supply Voltage*	32	V
I_C	Device Current*	1.8	A
P_{DISS}	Power Dissipation*	50	W
T_J	Junction Temperature	+250	°C
T_{STG}	Storage Temperature	- 65 to + 200	°C

Thermal Data

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	3.0	°C/W

*** Applies only to rated RF operation.**

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ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	I_C = 10 mA I_E = 0 mA	55	----	----	V
BV_{CER}	I_C = 10 mA R_{BE} = 10 Ω	55	----	----	V
BV_{EBO}	I_E = 1 mA I_C = 0 mA	3.5	----	----	V
I_{CES}	V_{CE} = 28 V V_{BE} = 0 V	----	----	2.0	mA
h_{FE}	V_{CE} = 5 V I_C = 500mA	15	----	150	----

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	f = 960 - 1215 MHz P_{IN} = 2.3 W V_{CC} = 28 V	15	----	----	W
η_C	f = 960 - 1215 MHz P_{IN} = 2.3 W V_{CC} = 28 V	45	49	----	%
G_P	f = 960 - 1215 MHz P_{IN} = 2.3 W V_{CC} = 28 V	8.1	8.9	----	dB

Note: Pulse Format: 6.4 µS on 6.6 µS off, repeat for 3.3 ms.
Duty Cycle: Burst 49.2%, overall 20.8%

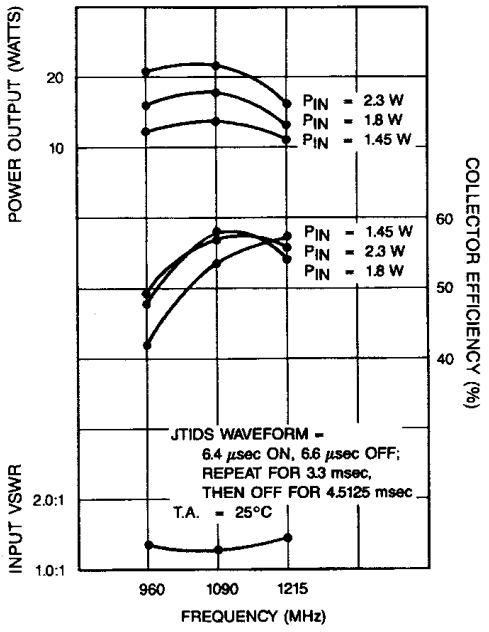
IMPEDANCE DATA:

FREQUENCY	Zin	Zcl
960 MHz	5.7 + j4.3	5.7 + j7.7
1090 MHz	5.8 + j2.5	4.3 + j6.5
1215 MHz	5.0 + j3.0	4.0 + j4.8

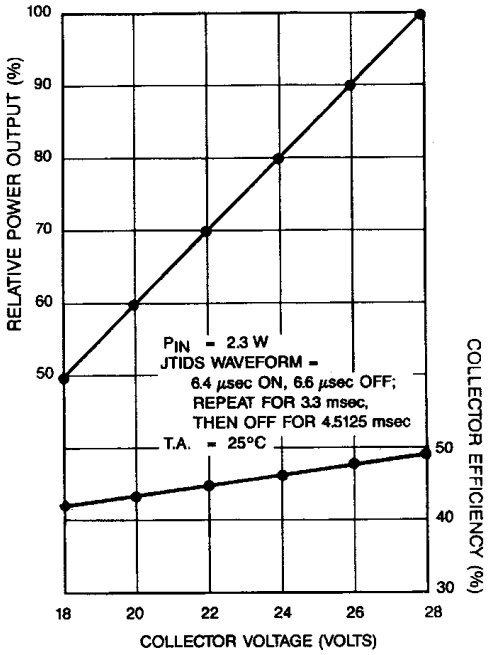
P_{IN} = 2.3W V_{CC} = 28V

TYPICAL PERFORMANCE

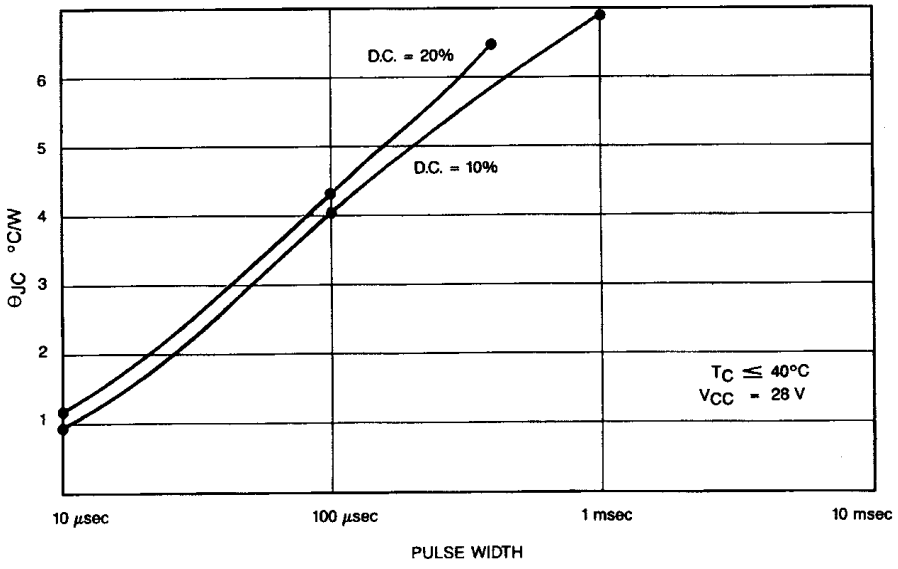
TYPICAL BROADBAND POWER AMPLIFIER



RELATIVE POWER OUTPUT & COLLECTOR EFFICIENCY vs COLLECTOR VOLTAGE



MAXIMUM THERMAL RESISTANCE vs PULSE WIDTH & DUTY CYCLE



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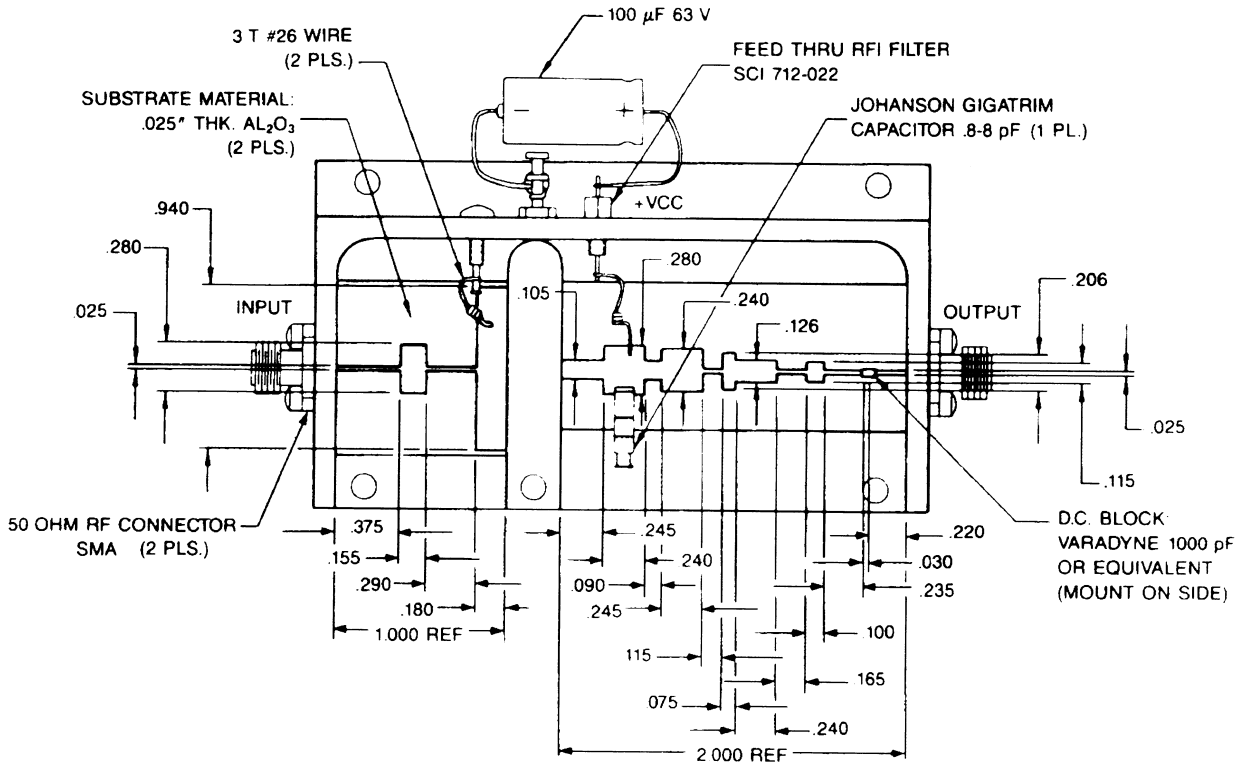
TEST CIRCUIT

Ref.: Dwg. No. 104-000284



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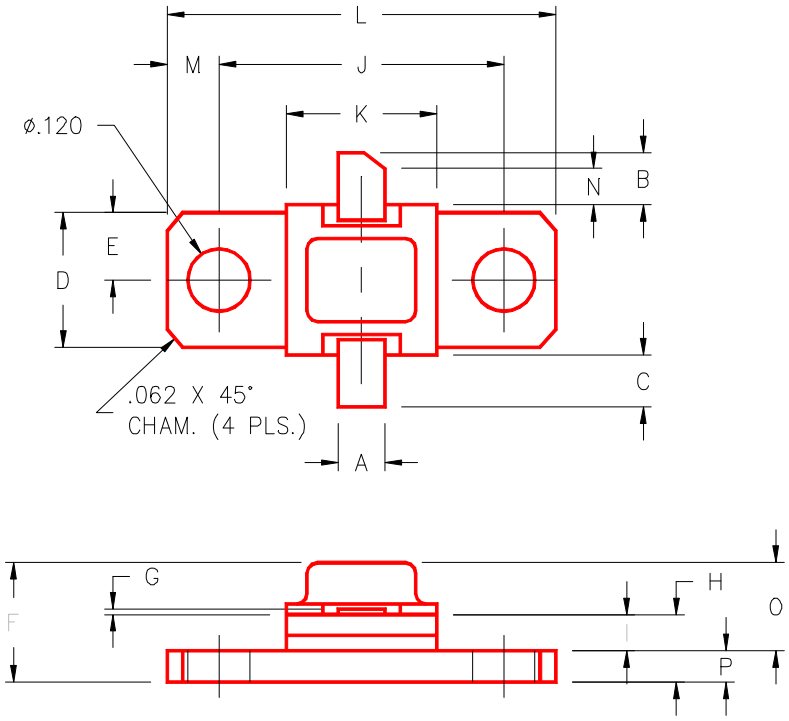
PACKAGE MECHANICAL DATA

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				

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