ADVANCED POWER TECHNOLOGY RF®

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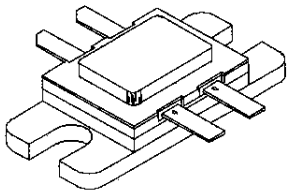
MS2200

RF AND MICROWAVE TRANSISTORS UHF PULSED APPLICATIONS

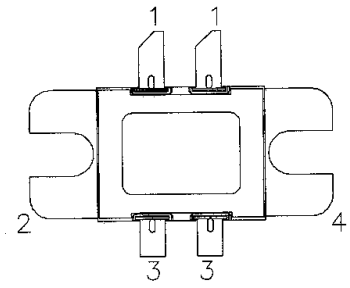


.400 x .500 4LFL (M102)
hermetically sealed

Features

- **500 Watts @ 250 µSec Pulse Width, 10% Duty Cycle**
- **Refractory Gold Metallization**
- **Emitter Ballasting And Low Resistance For Reliability and Ruggedness**
- **Infinite VSWR Capability At Specified Operating Conditions**
- **Input Matched, Common Base Configuration**
- **Balanced Configuration**

PIN CONNECTION



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

DESCRIPTION:

The MS2200 is a hermetically sealed, gold metallized silicon NPN pulse power transistor mounted in a common base balanced configuration. The MS2200 is designed for applications requiring high peak power and low duty cycles within the frequency range of 400 – 500 MHz.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CES}	Collector-Emitter Voltage	65	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	43.2	A
P_{DISS}	Power Dissipation	1167	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.15	°C/W

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ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
BV_{CBO}	I_C = 50 mA I_E = 0 mA	65	———	———	V
BV_{CES}	I_C = 50 mA V_{BE} = 0 V	65	———	———	V
BV_{EBO}	I_E = 10 mA I_C = 0 mA	3.5	———	———	V
I_{CES}	V_{CE} =30 V I_E = 0 mA	———	———	15	mA
h_{FE}	V_{CE} = 5 V I_C = 5 A	20	———	200	———

DYNAMIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
P_{OUT}	f = 425 MHz P_{IN} = 54 W V_{CE} = 40 V	500	———	———	W
G_P	f = 425 MHz P_{IN} = 54 W V_{CE} = 40 V	9.7	———	———	Db
η_C	f = 425 MHz P_{IN} = 54 W V_{CE} = 40 V	50	———	———	%

Note: **Pulse Width = 250µSec, Duty Cycle = 10%**
This device is suitable for use under other pulse width/duty cycle conditions.
Please contact the factory for specific applications assistance.

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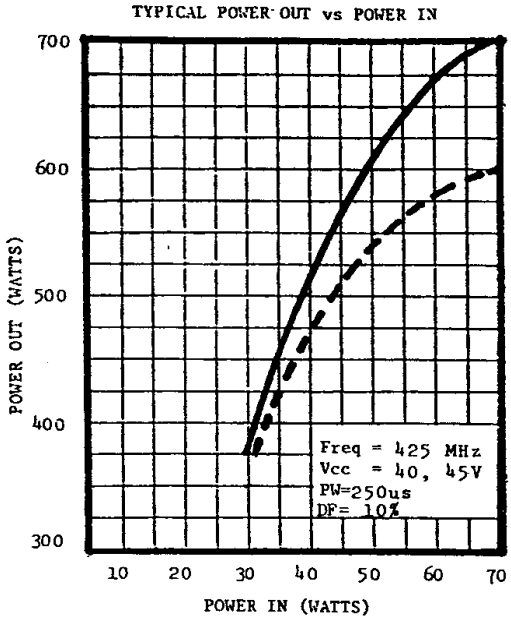
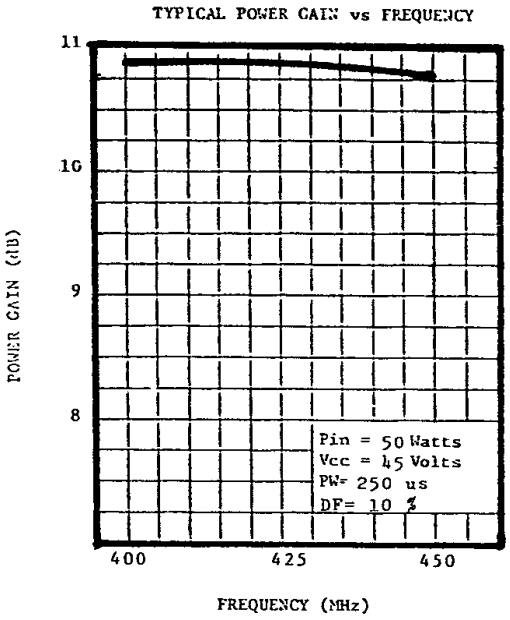
TYPICAL PERFORMANCE

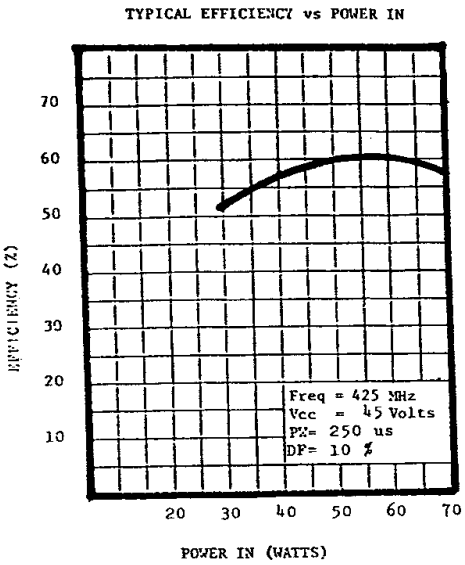
POWER OUTPUT vs POWER INPUT



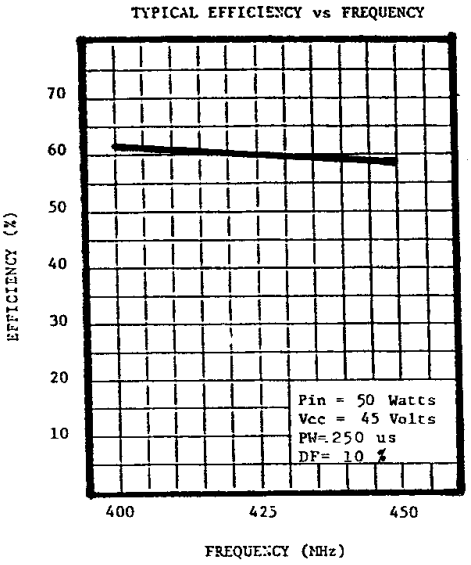
POWER GAIN vs FREQUENCY



EFFICIENCY vs POWER INPUT

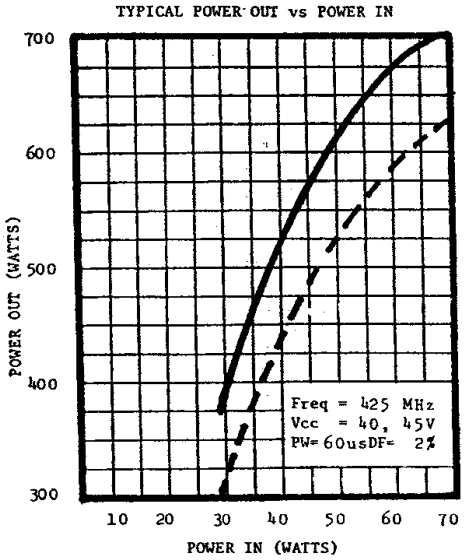


EFFICIENCY vs FREQUENCY

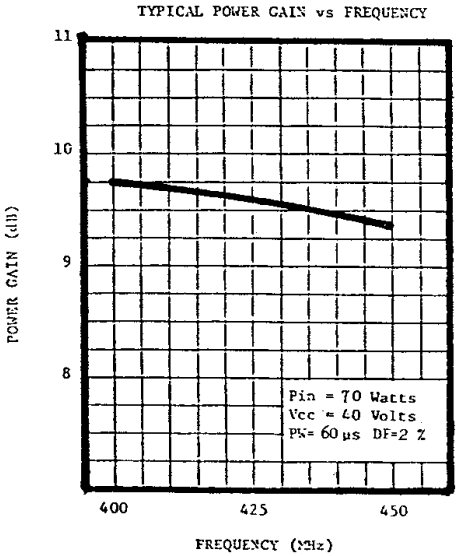


TYPICAL PERFORMANCE (CONTINUED)

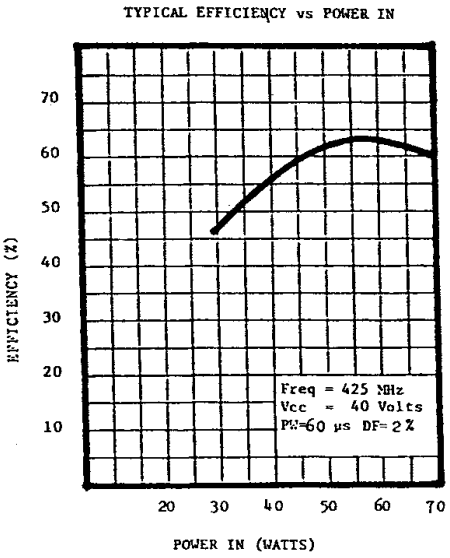
POWER OUTPUT vs POWER INPUT



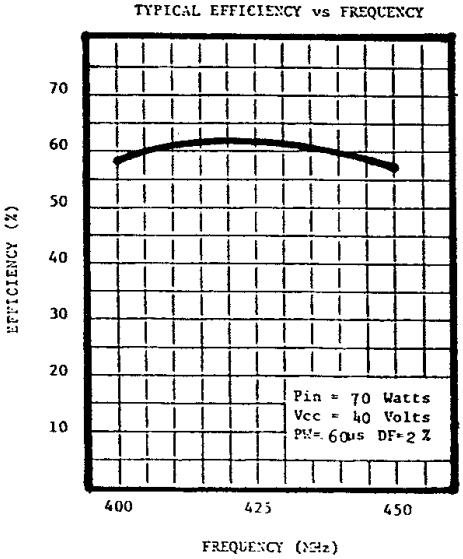
POWER GAIN vs FREQUENCY



EFFICIENCY vs POWER INPUT



EFFICIENCY vs FREQUENCY



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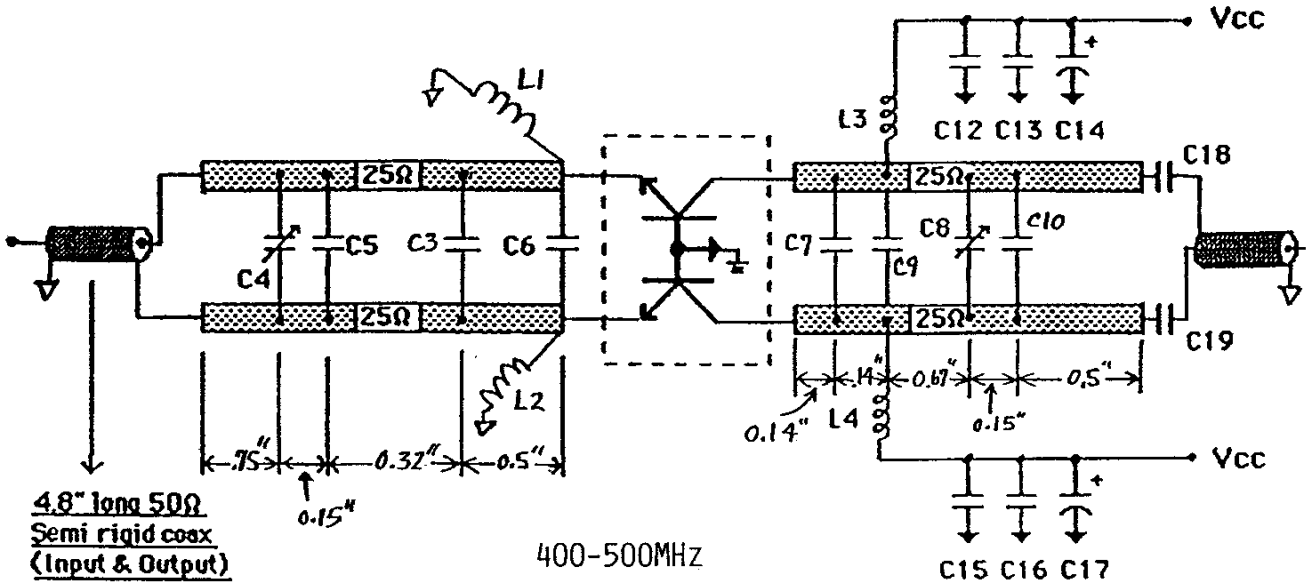
TEST CIRCUIT



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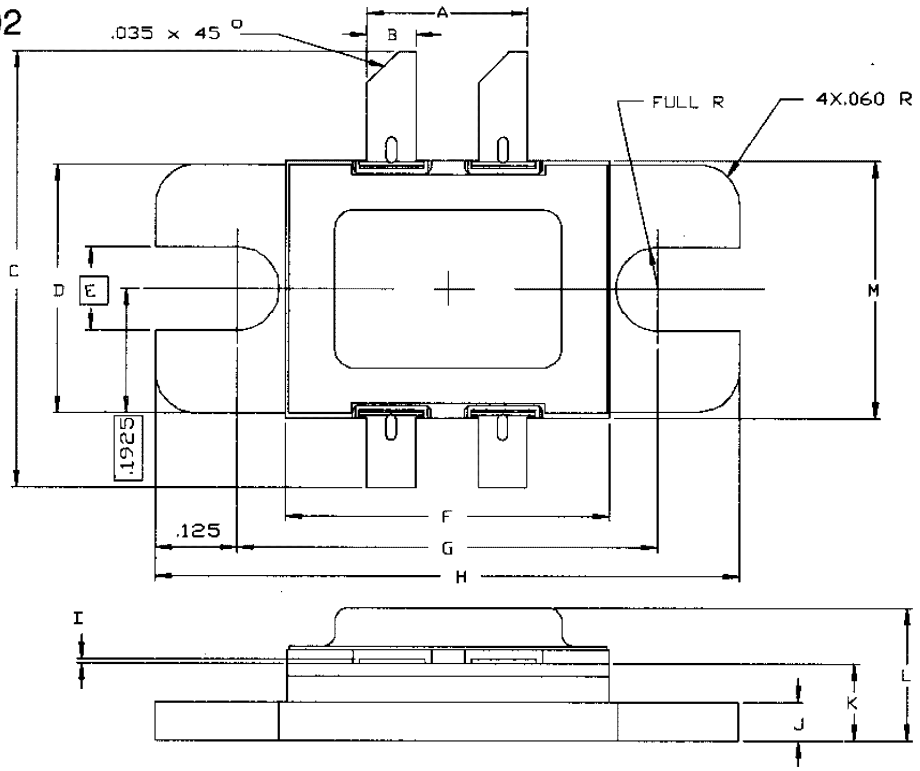
PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0102



ADVANCED POWER TECHNOLOGY		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.240/6,10	.254/6,45
B	.070/1,78	.080/2,03
C	.780/19,81	.820/20,83
D	.380/9,65	.390/9,91
E	.130/3,30	
F	.495/12,57	.507/12,88
G	.640/16,26	.655/16,64
H	.890/22,61	.910/23,11
I	.002/0,05	.006/0,15
J	.058/1,47	.065/1,65

CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
K	.115/2,92	.130/3,30
L	---	.230/5,84
M	.395/10,03	.407/10,34