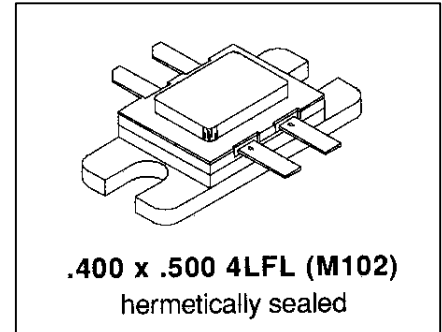


MS2200

## RF AND MICROWAVE TRANSISTORS UHF PULSED APPLICATIONS

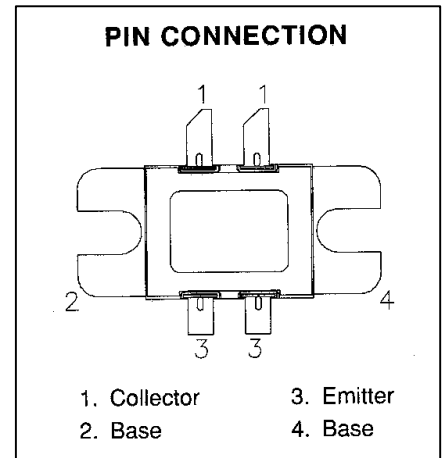
### Features

- 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



### 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 (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	65	V
V <sub>CES</sub>	Collector-Emitter Voltage	65	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V
I <sub>C</sub>	Device Current	43.2	A
P <sub>DISS</sub>	Power Dissipation	1167	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

### Thermal Data

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	0.15	°C/W
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**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)**
**STATIC**

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 50 mA    I<sub>E</sub> = 0 mA</b>	<b>65</b>	—	—	<b>V</b>
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 50 mA    V<sub>BE</sub> = 0 V</b>	<b>65</b>	—	—	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 10 mA    I<sub>C</sub> = 0 mA</b>	<b>3.5</b>	—	—	<b>V</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 30 V    I<sub>E</sub> = 0 mA</b>	—	—	<b>15</b>	<b>mA</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V    I<sub>C</sub> = 5 A</b>	<b>20</b>	—	<b>200</b>	—

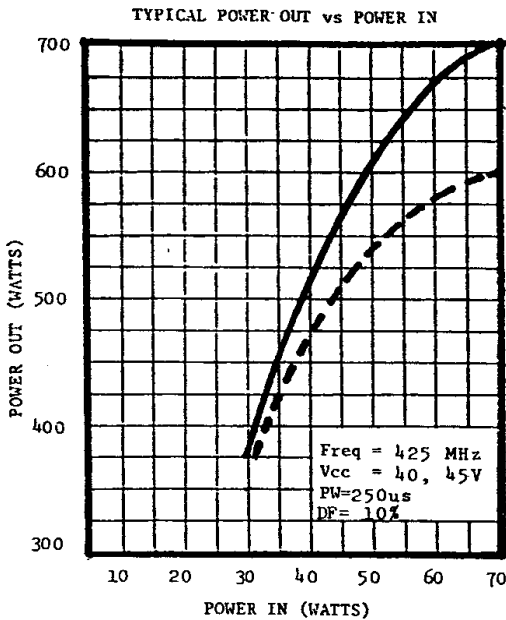
**DYNAMIC**

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 425 MHz    P<sub>IN</sub> = 54 W    V<sub>CE</sub> = 40 V</b>	<b>500</b>	—	—	<b>W</b>
<b>G<sub>P</sub></b>	<b>f = 425 MHz    P<sub>IN</sub> = 54 W    V<sub>CE</sub> = 40 V</b>	<b>9.7</b>	—	—	<b>Db</b>
<b>η<sub>C</sub></b>	<b>f = 425 MHz    P<sub>IN</sub> = 54 W    V<sub>CE</sub> = 40 V</b>	<b>50</b>	—	—	<b>%</b>

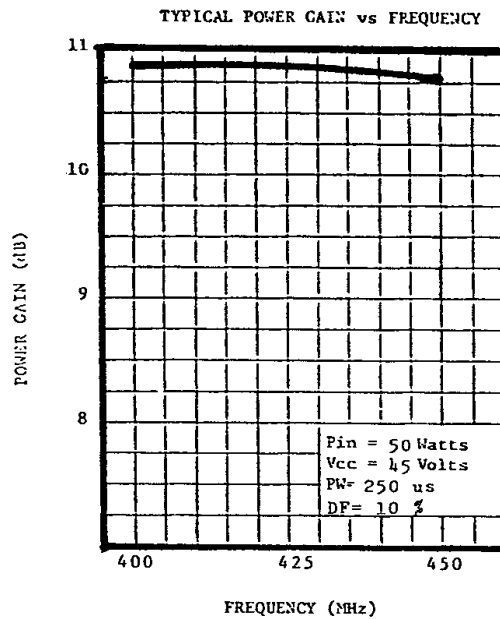
**Note:**    Pulse Width = 250μSec, Duty Cycle = 10%  
This device is suitable for use under other pulse width/duty cycle conditions.  
Please contact the factory for specific applications assistance.

## TYPICAL PERFORMANCE

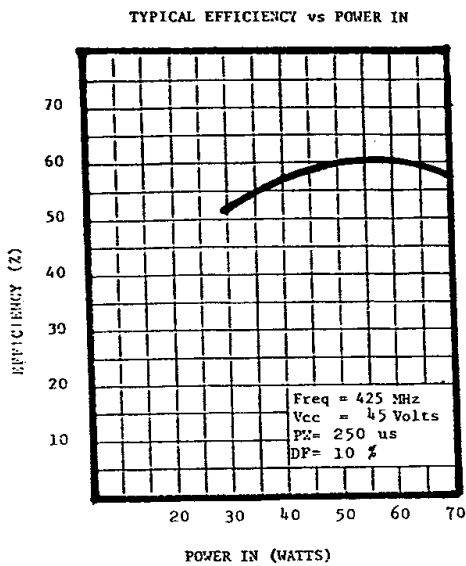
### POWER OUTPUT vs POWER INPUT



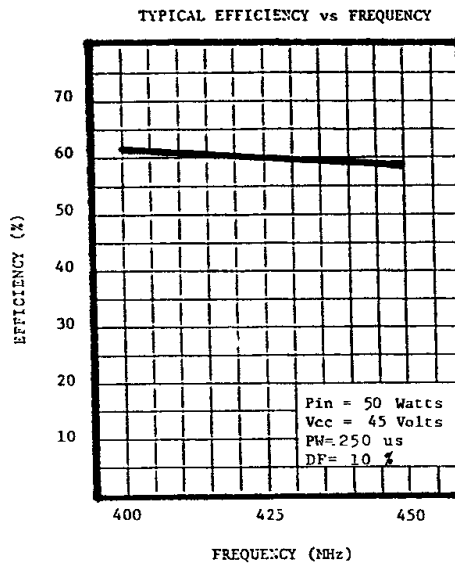
### POWER GAIN vs FREQUENCY

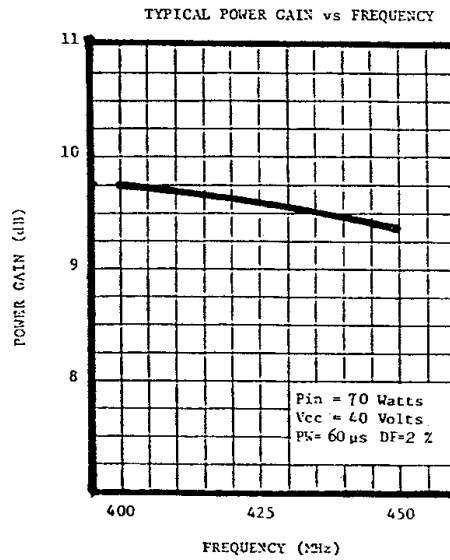
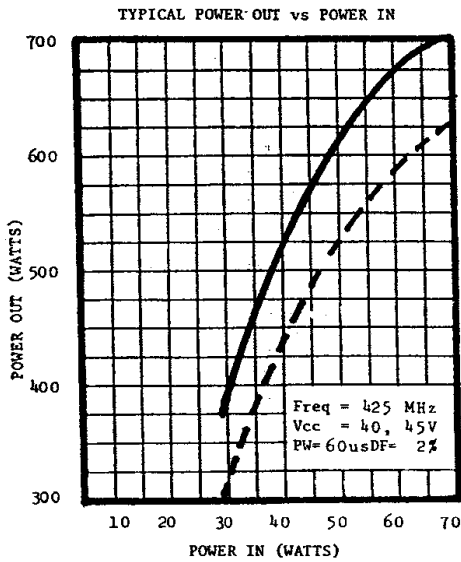
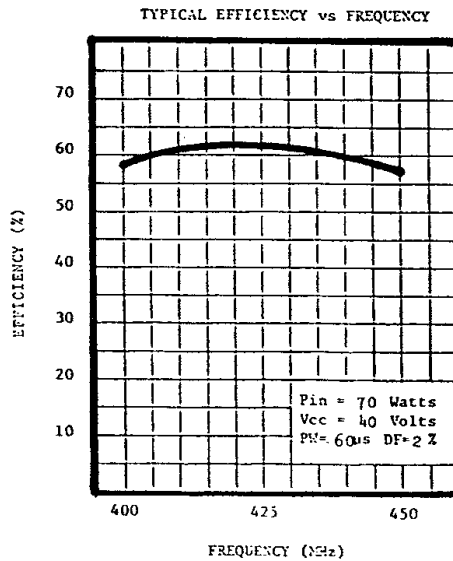
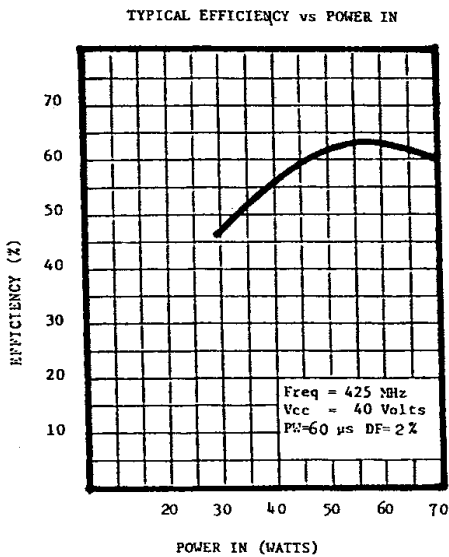


### EFFICIENCY vs POWER INPUT



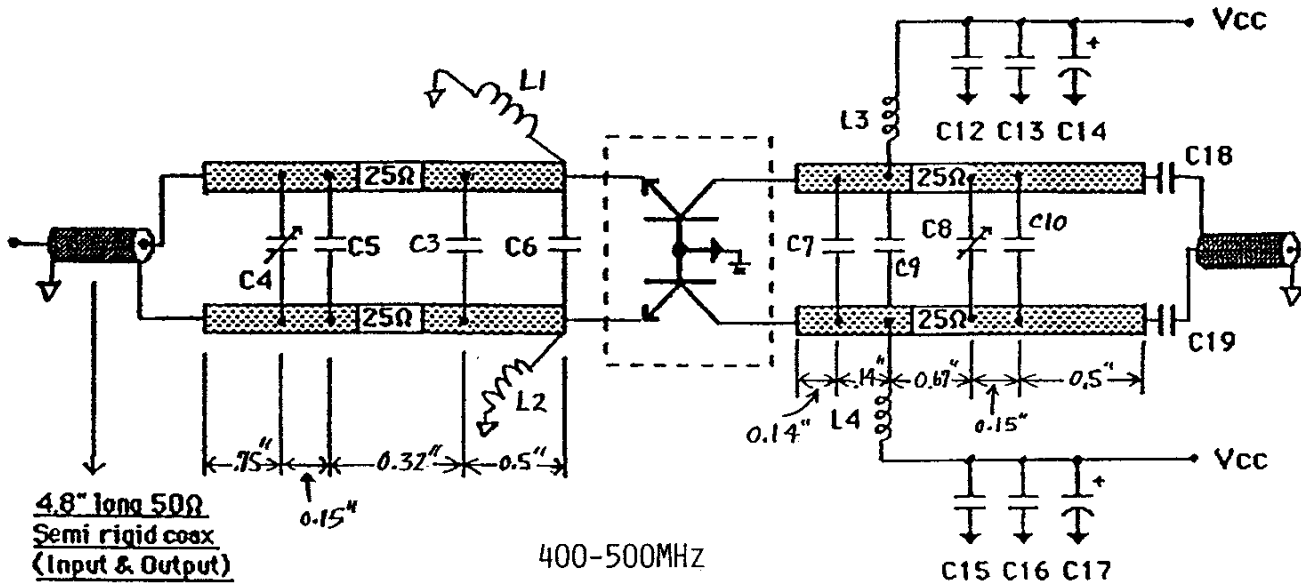
### EFFICIENCY vs FREQUENCY



**TYPICAL PERFORMANCE (CONTINUED)**
**POWER OUTPUT vs POWER INPUT**
**POWER GAIN vs FREQUENCY**

**EFFICIENCY vs POWER INPUT**
**EFFICIENCY vs FREQUENCY**


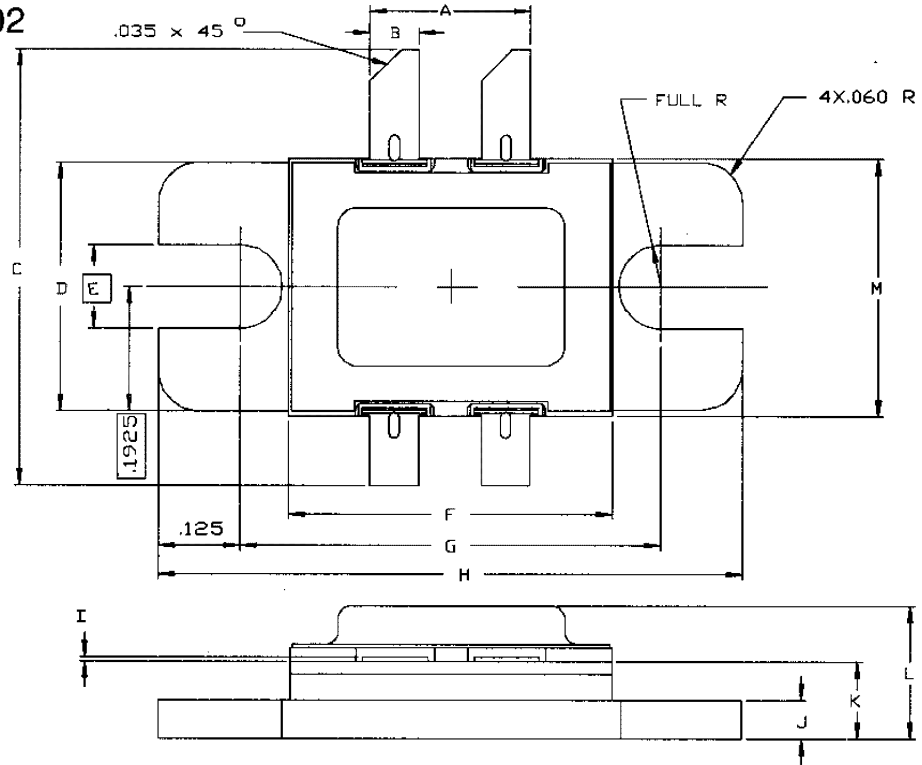
**MS2200**

TEST CIRCUIT



**PACKAGE MECHANICAL DATA**

Ref.: Dwg. No.12-0102



ADVANCED POWER TECHNOLOGY			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.240/6,10	.254/6,45	K	.115/2,92	.130/3,30
B	.070/1,78	.080/2,03	L	---	.230/5,84
C	.780/19,81	.820/20,83	M	.395/10,03	.407/10,34
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			