

## MS2203

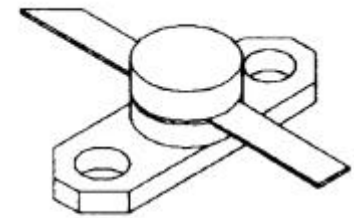
### RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

#### Features

- 1090 MHz
- 18 VOLTS
- $P_{OUT} = 0.6$  WATTS
- $G_P = 10.8$  dB MINIMUM
- CLASS A OPERATION
- INFINITE VSWR CAPABILITY @ RATED CONDITIONS
- COMMON EMITTER CONFIGURATION

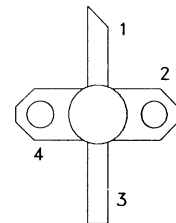
#### DESCRIPTION:

The MS2203 is a common emitter, silicon NPN, microwave transistor designed for Class A driver applications under DME or IFF pulse conditions. This device is capable of withstanding an infinite load VSWR at any phase angle under rated conditions.



**.280 2LFL M220  
epoxy sealed**

#### PIN CONNECTION



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

#### ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ )

Symbol	Parameter	Value	Unit
$V_{CE}$	Collector-Emitter	20	V
$I_C$	Collector Current	300	mA
$P_D$	Total Device Dissipation	5	W
$T_J$	Junction Temperature	200	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-65 + 150	$^{\circ}C$

#### Thermal Data

$R_{TH(J-C)}$	Thermal Resistance Junction-case	35	$^{\circ}C/W$
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MS2203

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 5.0 mA</b>	<b>I<sub>B</sub> = 0 mA</b>	<b>20</b>	---	---	<b>V</b>
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 1.0 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>50</b>	---	---	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 1.0 mA</b>	<b>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> = 28 V</b>		---	---	<b>1.0</b>	<b>mA</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5.0 V</b>	<b>I<sub>C</sub> = 100 mA</b>	<b>15</b>	---	<b>120</b>	---

### DYNAMIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 1025 – 1150 MHz</b>	<b>P<sub>IN</sub> = 50mW</b>	<b>0.6</b>	<b>0.85</b>	---	<b>W</b>
<b>G<sub>PE</sub></b>	<b>f = 1025 – 1150 MHz</b>	<b>P<sub>IN</sub> = 50 mW</b>	<b>10.8</b>	<b>12.3</b>	---	<b>dB</b>

Conditions: **V<sub>CE</sub> = 18V**

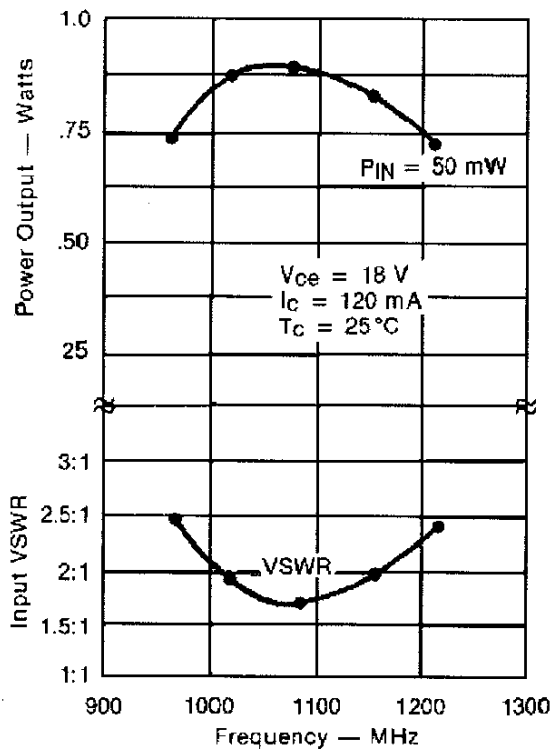
**Pulse width = 10μS    Duty Cycle = 1%**



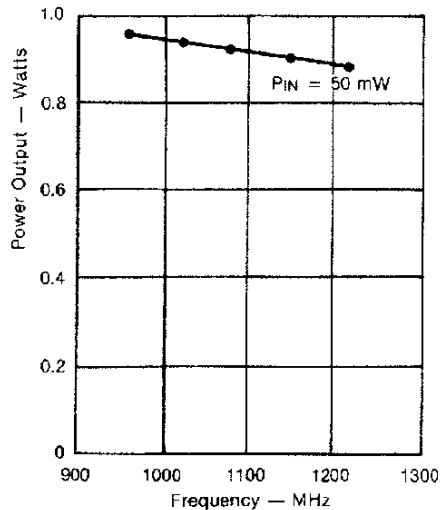
**MS2203**

**TYPICAL PERFORMANCE**

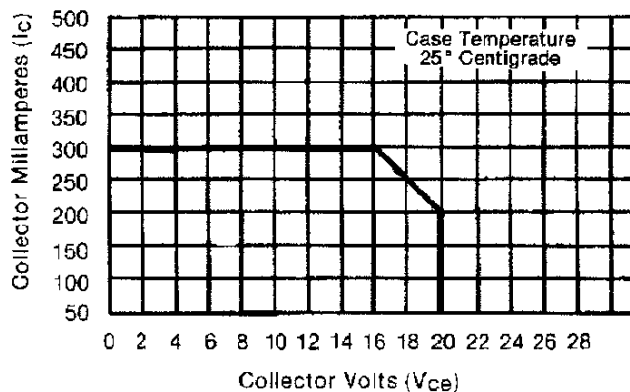
**BROADBAND POWER AMPLIFIER**



**NARROWBAND POWER OUTPUT vs FREQUENCY**



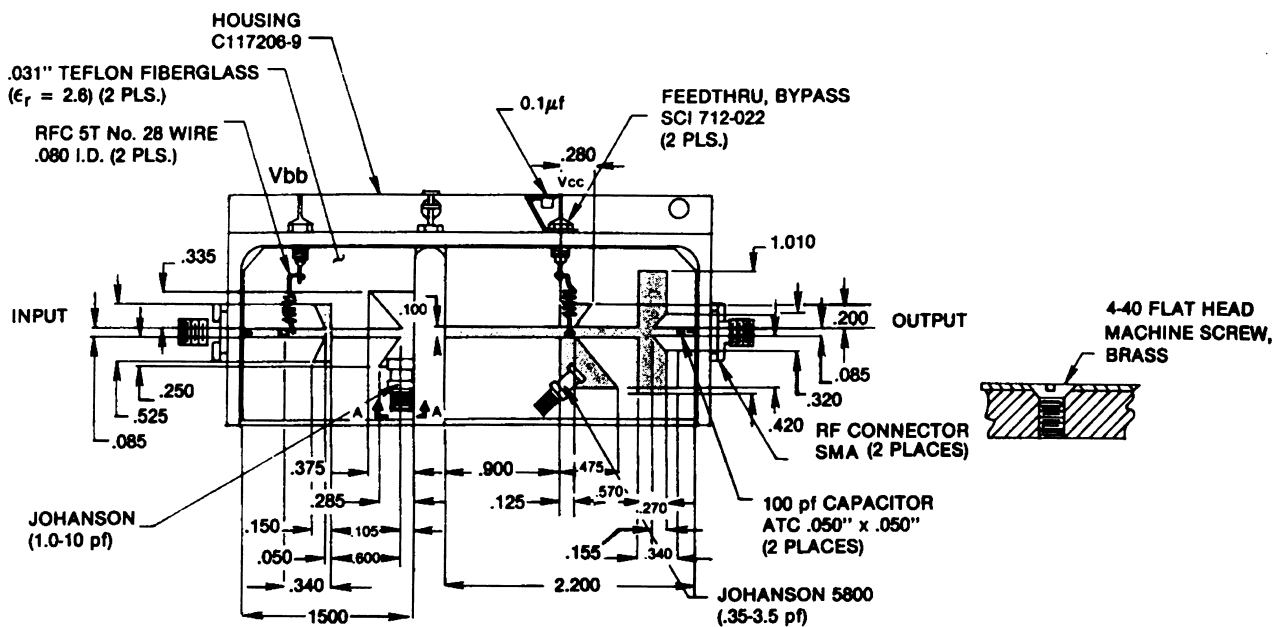
**MAXIMUM OPERATING AREA for FORWARD BIAS OPERATION**



**MS2203**

**TEST CIRCUIT**

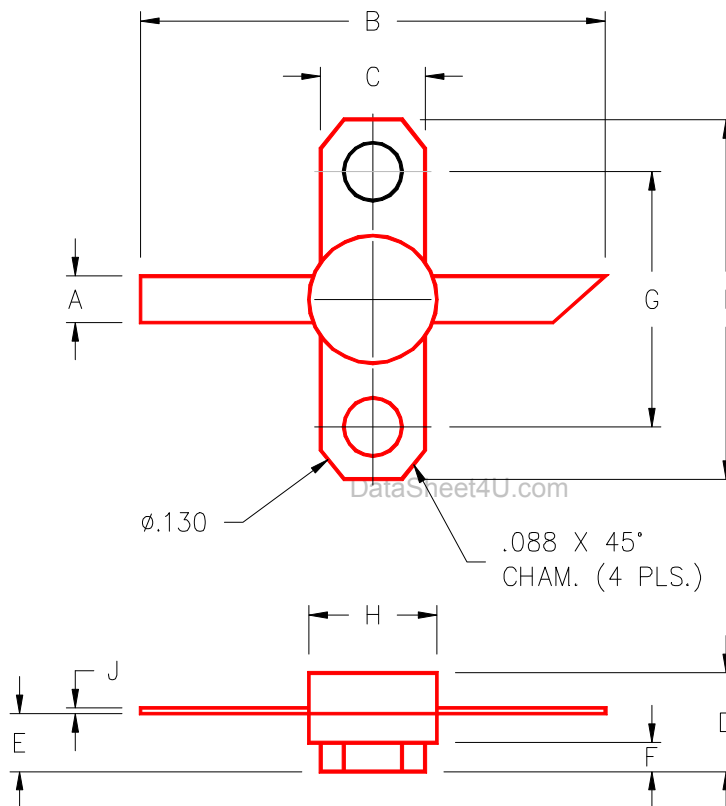
Ref.: Dwg No. C127297



All dimensions are in inches.

## PACKAGE MECHANICAL DATA

### PACKAGE STYLE M220



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.100/2,54		J	.003/0,08	.006/0,15
B	1.050/26,67				
C	.250/6,35				
D		.210/5,33			
E	.120/3,05	.130/3,30			
F	.062/1,58				
G	.562/14,28				
H		.285/7,24			
I	.800/20,32				