



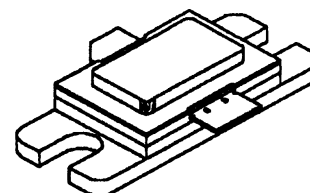
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MS2208

RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

Features

- 1090 MHz
- COMMON BASE
- GOLD METALLIZATION
- CLASS C
- $P_{OUT} = 500 \text{ W MIN. WITH } 8.5 \text{ dB GAIN}$



.400 x .600 2LFL (M198)
hermetically sealed

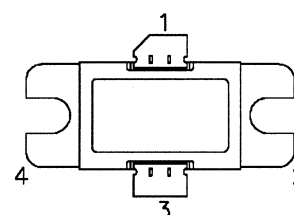
DESCRIPTION:

THE MS2208 IS A SILICON NPN BIPOLAR DEVICE SPECIFICALLY DESIGNED FOR PULSED POWER APPLICATIONS AT 1090 MHz.

GOLD METALLIZATION AND EMITTER BALLASTING ASSURE HIGH RELIABILITY.

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PIN CONNECTION



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

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

Symbol	Parameter	Value	Unit
V_{CC}	Collector Supply Voltage*	55	V
I_C	Device Current*	27	A
P_{DISS}	Power Dissipation*	1,360	W
T_J	Junction Temperature* (Pulsed RF Operation)	+250	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-65 to +200	$^{\circ}\text{C}$

Thermal Data

$R_{TH(J-C)}$	Junction-case Thermal Resistance*	0.11	$^{\circ}\text{C/W}$
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*Applies to rated RF amplifier operation

MS2208

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 50mA	I_E = 0mA	70	---	---	V
BV_{EBO}	I_E = 30mA	I_C = 0mA	3.0	---	---	V
BV_{CES}	I_C = 50mA	V_{BE} = 0mA	70	---	---	V
I_{CES}	V_{BE} = 0V	V_{CE} = 50V	-----	---	40	mA
h_{FE}	V_{CE} = 5 V	I_C = 1A	10	---	---	---

DYNAMIC

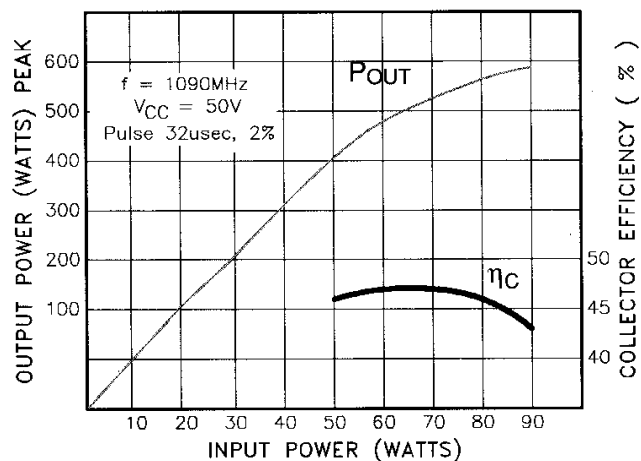
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 1090 MHz	V_{CC} = 50V	P_{IN}=70W	500	---	---	W
G_P	f = 1090 MHz	V_{CC} = 50V	P_{IN}=70W	8.5	---	---	dB
η_C	f = 1090 MHz	V_{CC} = 50V	P_{IN}=70W	40	---	---	%

Pulse Width = 32 μs

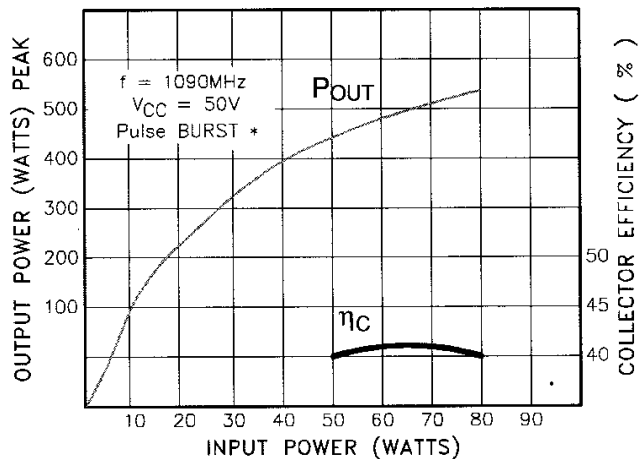
Duty Cycle = 2 %

TYPICAL PERFORMANCE

POWER OUTPUT & COLLECTOR EFFICIENCY vs POWER INPUT

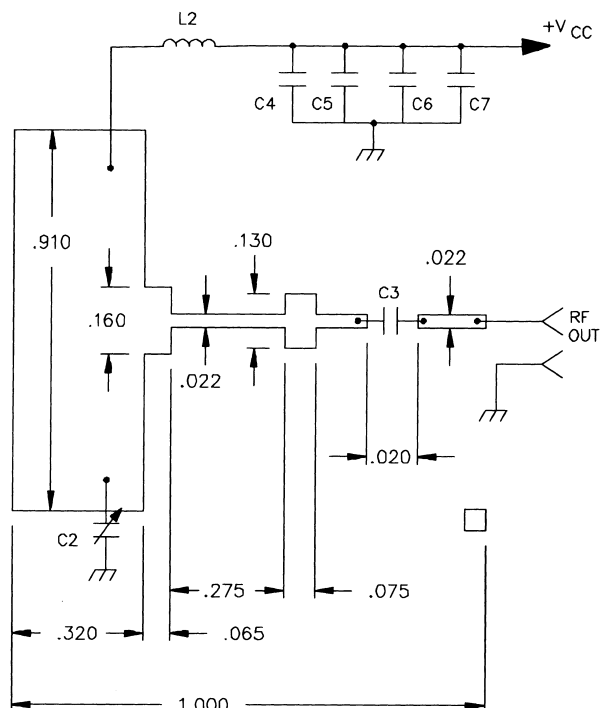
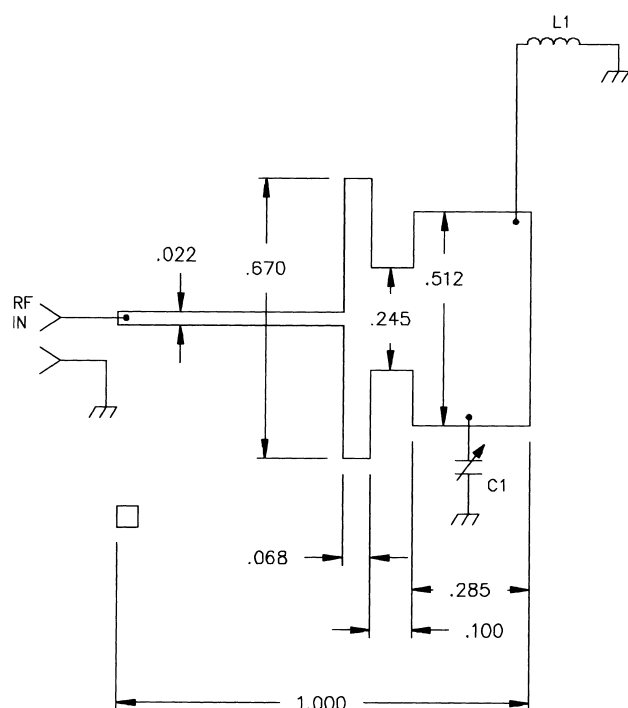


POWER OUTPUT & COLLECTOR EFFICIENCY vs POWER INPUT



* Pulse Burst conditions:
128 μSec train of 0.5 μSec off
with a period of 6.4 ms.

TEST CIRCUIT

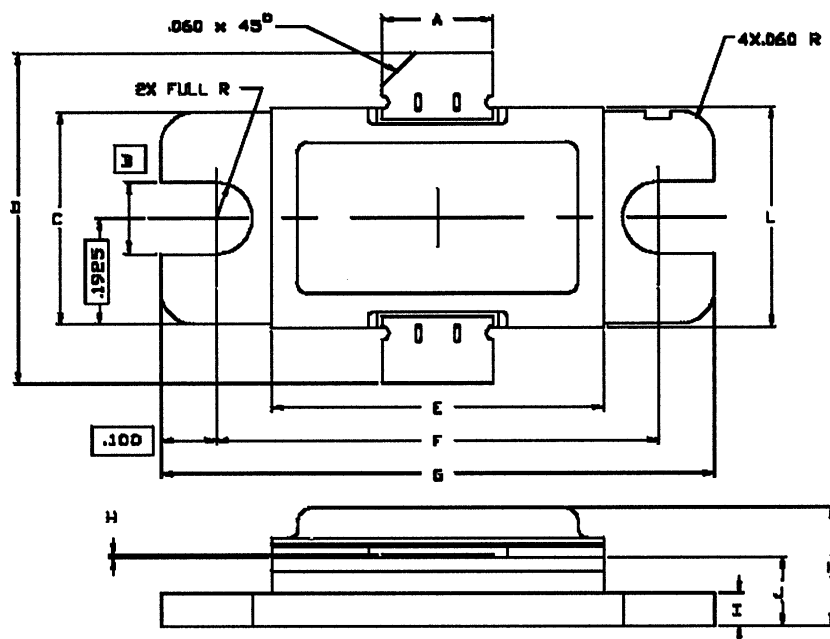


C1,C2: 0.6 - 4.5 pF Variable Capacitor
 C3,C4: 91 pF (Case A, Case B)
 C5 : 39 pF Capacitor
 C6 : 0.1 μ F Capacitor
 C7 : 100 μ F Capacitor, 63V

L1 : Strap 0.28 Long, 0.35 Wide and .005 Thick
 L2 : 4 Turn, #28 Wire, 1/16" I.D.

Er = 10.2, H = 25 mil.

PACKAGE MECHANICAL DATA



	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.195/4.95	.205/5.21	K		.230/5.84
B	.130/3.30		L	.393/9.98	.407/10.34
C	.380/9.65	.390/9.91			
D	.570/14.48				
E	.593/15.06	.607/15.42			
F	.790/20.07	.810/20.57			
G	.995/25.27	1.005/25.53			
H	.002/0.05	.006/0.15			
I	.055/1.40	.065/1.65			
J	.110/2.79	.130/3.30			