

MS2207

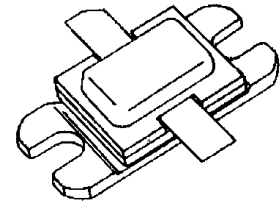
RF & MICROWAVE TRANSISTORS L-BAND AVIONICS APPLICATIONS

Features

- 1090 MHz
- 50 VOLTS
- 15:1 VSWR CAPABILITY
- INPUT / OUTPUT MATCHING
- $P_{OUT} = 400$ WATTS
- $G_p = 8.0$ dB MINIMUM
- COMMON BASE CONFIGURATION

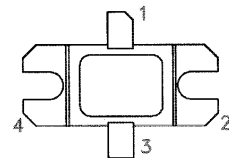
DESCRIPTION:

The MS2207 is a high power NPN bipolar transistor specifically designed for TCAS and Mode-S driver applications. This device is designed for operation under moderate pulse width and duty cycle pulse conditions and is capable of withstanding 15:1 output VSWR at rated conditions.



.400 x .500 2LFL (M216)
hermetically sealed

PIN CONNECTION



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

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation	880	W
I_C	Device Current	24	A
V_{CC}	Collector Supply Voltage	55	V
T_J	Junction Temperature	250	°C
T_{STG}	Storage Temperature	-65 to +200	°C

Thermal Data

$R_{TH(J-C)}$	Junction-case Thermal Resistance	0.17	°C/W
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ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_C = 50 \text{ mA}$ $I_E = 0 \text{ mA}$	65	---	---	V
BV_{EBO}	$I_E = 15 \text{ mA}$ $I_C = 0 \text{ mA}$	3.5	---	---	V
BV_{CER}	$I_C = 50 \text{ mA}$ $R_{BE} = 10\Omega$	65	---	---	V
I_{CES}	$V_{BE} = 50 \text{ V}$ $V_{CE} = 0 \text{ V}$	---	---	30	mA
h_{FE}	$V_{CE} = 5 \text{ V}$ $I_C = 5 \text{ A}$	10	---	---	---

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 1090 \text{ MHz}$ $P_{IN} = 63W$ $V_{CC} = 50V$	400	---	---	W
η_C	$f = 1090 \text{ MHz}$ $P_{IN} = 63W$ $V_{CC} = 50V$	45	---	---	%
G_p	$f = 1090 \text{ MHz}$ $P_{IN} = 63W$ $V_{CC} = 50V$	8.0	---	---	dB

Conditions: Pulse Width = 32μS Duty Cycle = 2%

IMPEDANCE DATA

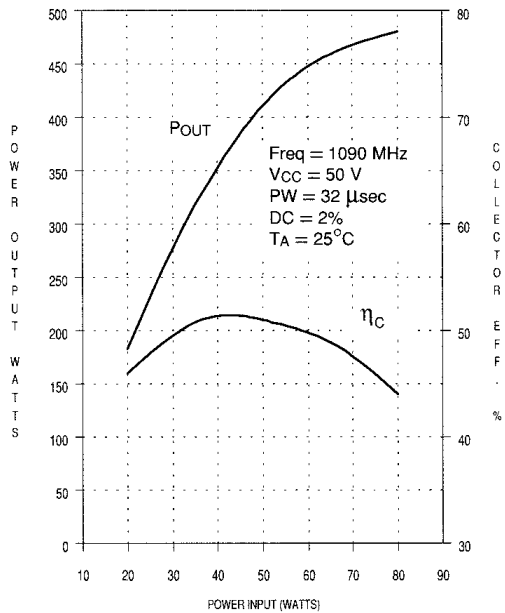
FREQ	$Z_{IN}(\Omega)$	$Z_{CL}(\Omega)$
1025 MHz	2.4 + j 3.2	1.4 - j 2.2
1090 MHz	3.8 + j 2.5	1.6 - j 1.6
1150 MHz	2.3 + j 1.3	1.2 - j 1.1

$P_{IN} = 63 \text{ W}$

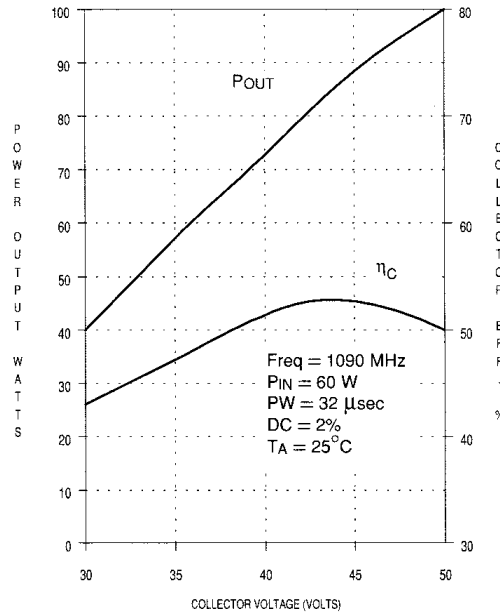
$V_{CC} = 50 \text{ V}$

TYPICAL PERFORMANCE

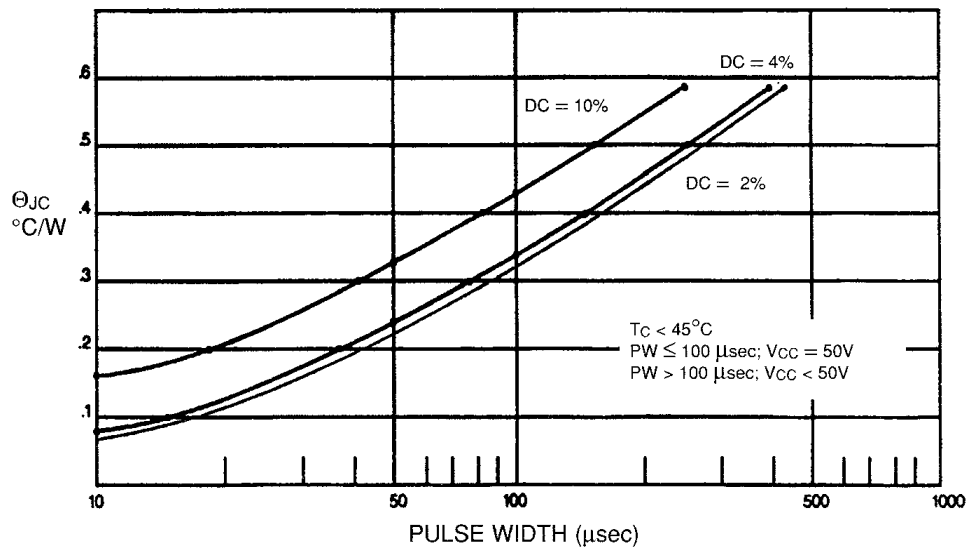
**TYPICAL NARROWBAND
POWER AMPLIFIER**



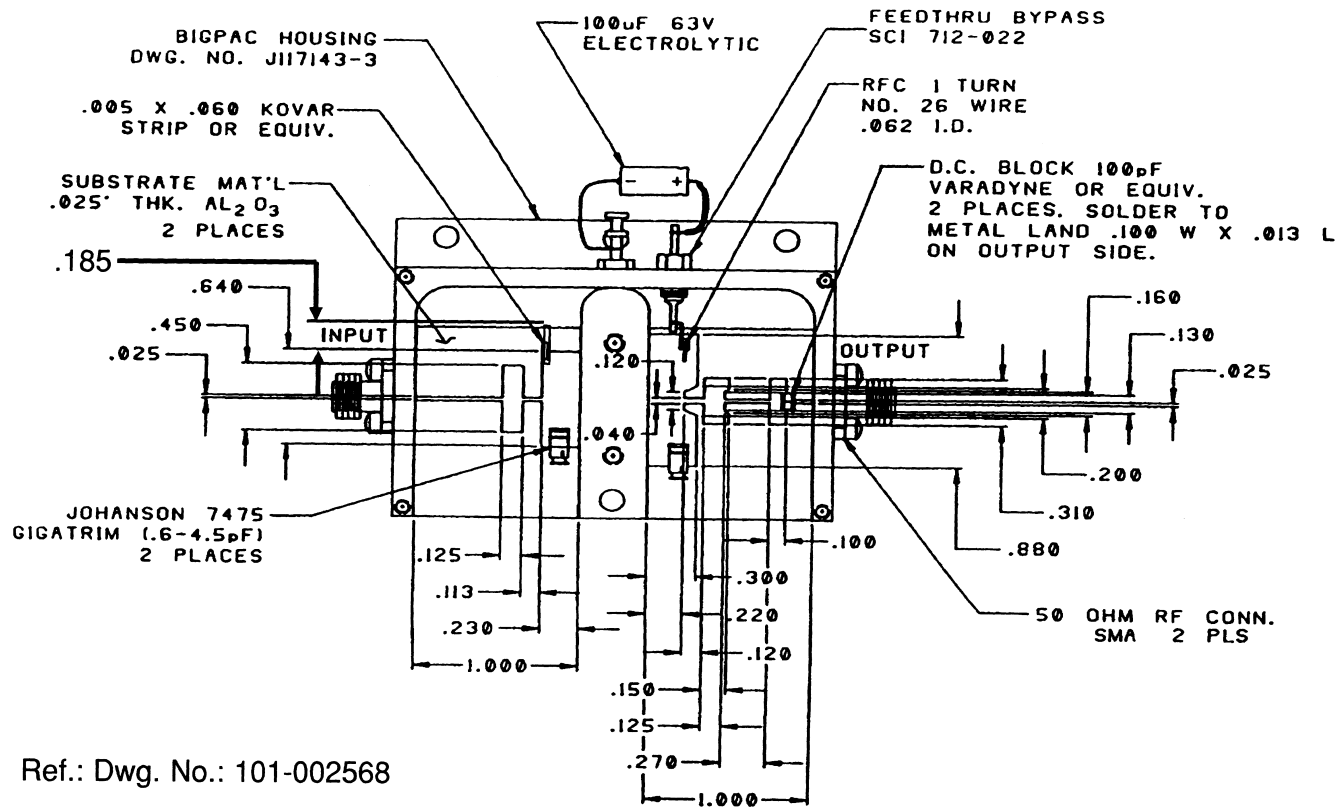
**TYPICAL RELATIVE OUTPUT
POWER & COLLECTOR EFFICIENCY
vs COLLECTOR VOLTAGE**



MAXIMUM THERMAL RESISTANCE vs PULSE WIDTH & DUTY CYCLE



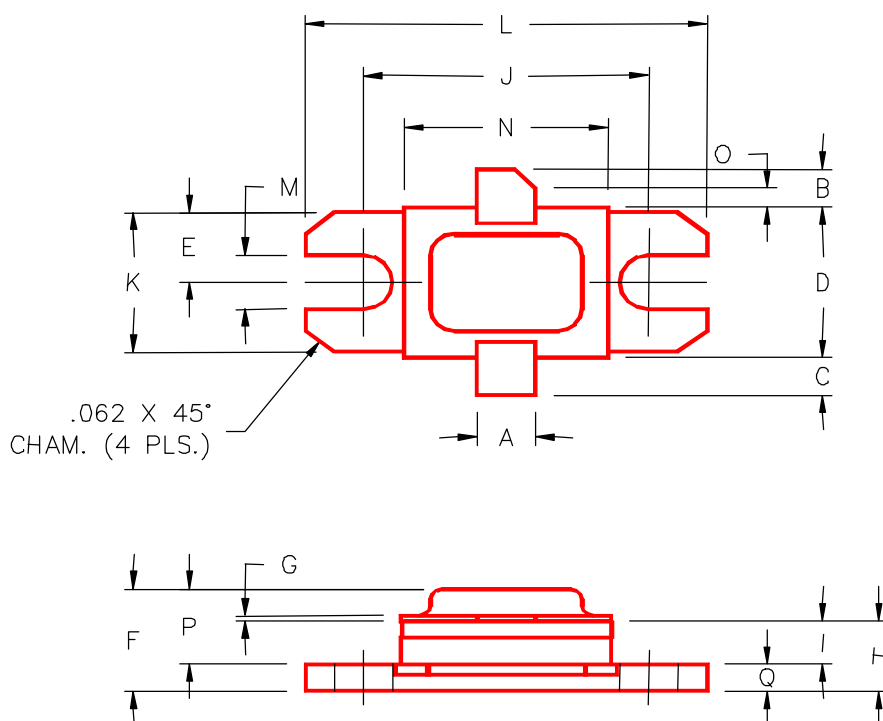
TEST CIRCUIT



Ref.: Dwg. No.: 101-002568

PACKAGE MECHANICAL DATA

PACKAGE STYLE M216



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.140/3,56		J	.700/17,78	
B	.110/2,80		K	.386/9,80	
C	.110/2,80		L	.900/22,86	
D	.395/10,03	.407/10,34	M	.120/3,05	
E	.193/4,90		N	.500/12,70	
F		.230/5,84	O	.050/1,27	
G	.003/0,08	.006/0,15	P		.170/4,32
H	.118/3,00	.131/3,33	Q	.062/1,58	
I	.063/1,60				