ADVANCED POWER TECHNOLOGY RF®

140 COMMERCE DRIVE
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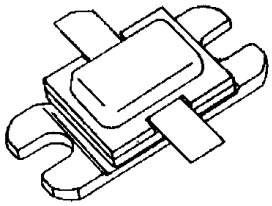
MS2207

RF & MICROWAVE TRANSISTORS
L-BAND AVIONICS APPLICATIONS

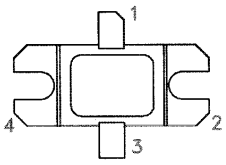


.400 x .500 2LFL (M216)
hermetically sealed

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**

PIN CONNECTION



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

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.

ABSOLUTE MAXIMUM RATINGS (Tcase = 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 mA	I_E = 0 mA	65	---	---	V
BV_{EBO}	I_E = 15 mA	I_C = 0 mA	3.5	---	---	V
BV_{CER}	I_C = 50 mA	R_{BE} = 10Ω	65	---	---	V
I_{CES}	V_{BE} = 50 V	V_{CE} = 0 V	---	---	30	mA
h_{FE}	V_{CE} = 5 V	I_C = 5 A	10	---	---	---

DYNAMIC

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

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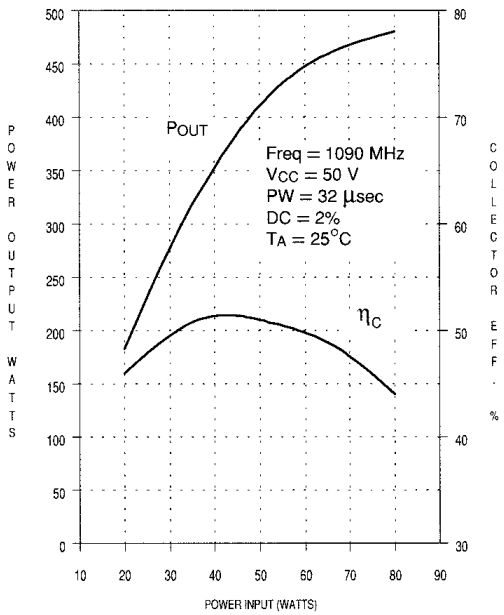
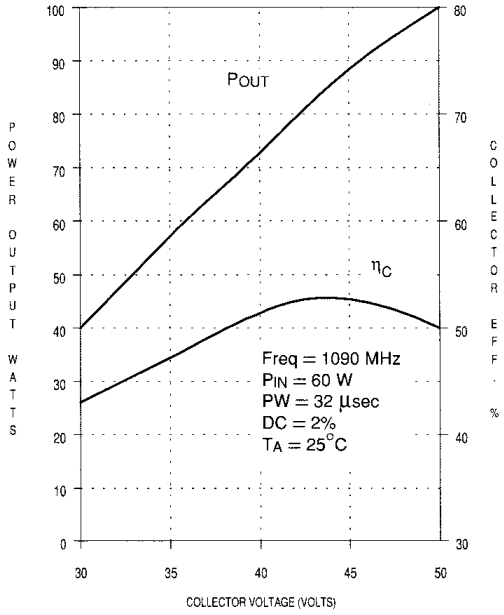
TYPICAL PERFORMANCE

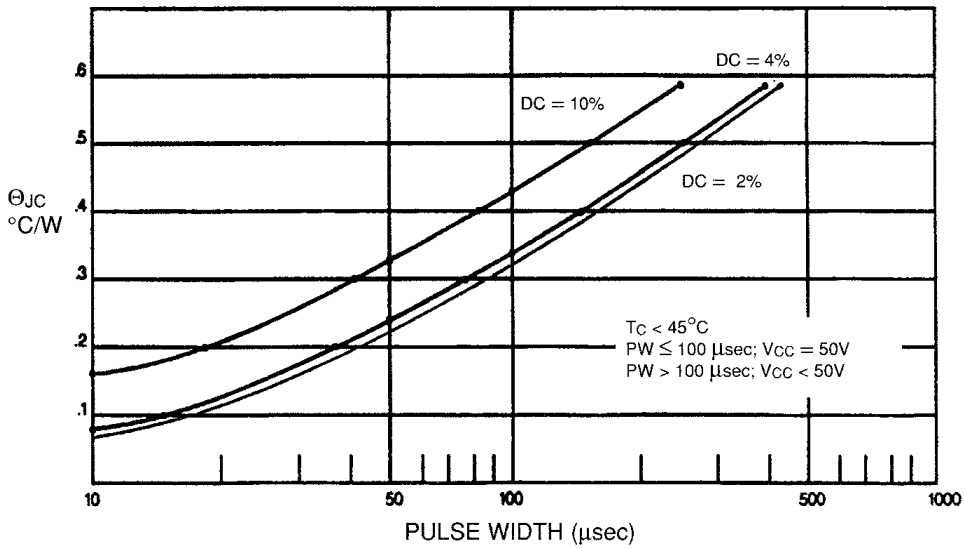
TYPICAL NARROWBAND POWER AMPLIFIER



TYPICAL RELATIVE OUTPUT POWER & COLLECTOR EFFICIENCY vs COLLECTOR VOLTAGE



MAXIMUM THERMAL RESISTANCE vs PULSE WIDTH & DUTY CYCLE



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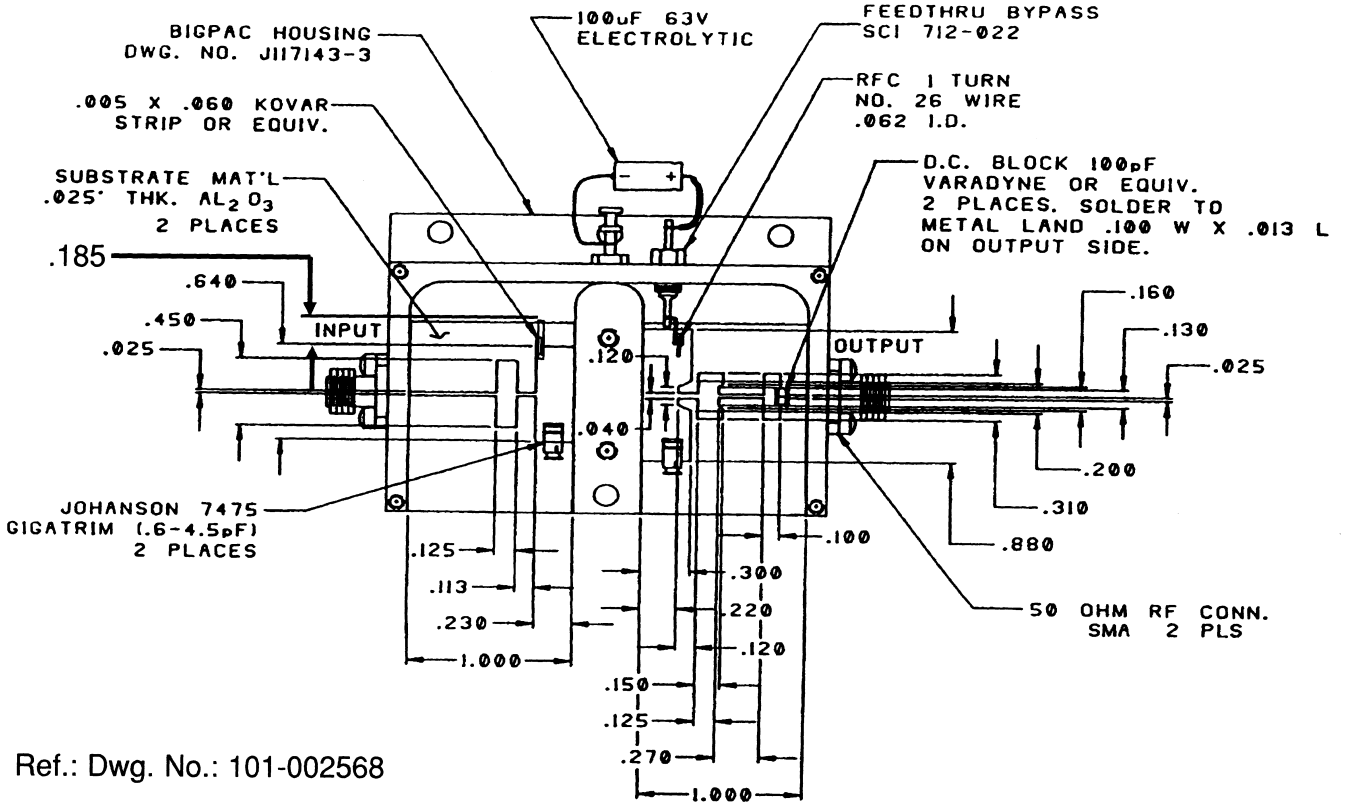
TEST CIRCUIT



Ref.: Dwg. No.: 101-002568

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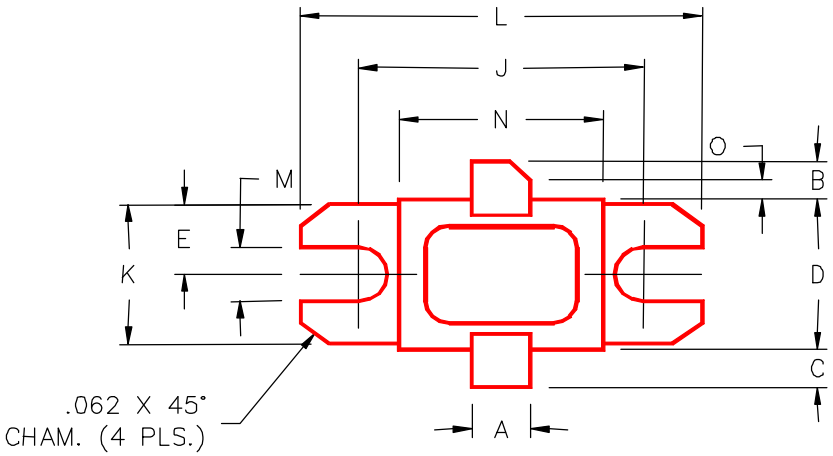
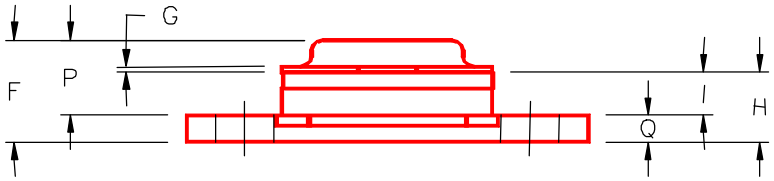
PACKAGE MECHANICAL DATA

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				

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