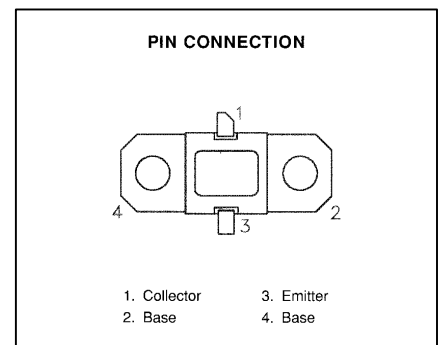


MS2217

RF AND MICROWAVE TRANSISTORS L-BAND RADAR APPLICATIONS

Features

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- RUGGEDIZED VSWR $\infty:1$
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 26$ WATTS MINIMUM
- $G_P = 7.2$ dB MINIMUM



DESCRIPTION:

The MS2217 is a high power transistor specifically designed for L-Band pulsed driver applications and capable of operation over a wide range of pulse widths, duty cycles, and temperatures.

It is capable of withstanding $\infty:1$ output VSWR at rated RF conditions. Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

The MS2217 is supplied in the IMPAC™ Hermetic metal/Ceramic package with internal Input/Output matching structures.

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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation (T _C 100 °C)	63	W
I_C	Device Current	2.75	A
V_{CC}	Collector-Supply Voltage	32	V
T_J	Junction Temperature (RF Pulsed Operation)	250	°C
T_{STG}	Storage Temperature	-65 to +200	°C

Thermal Data

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	2.4	°C/W
---------------	----------------------------------	-----	------

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

STATIC

Symbol	Test Conditions		Value			Units
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 10mA	I_E = 0mA	55	---	---	V
BV_{EBO}	I_E = 1mA	I_C = 0mA	3.5	---	---	V
BV_{CER}	I_C = 20mA	R_{BE} = 10Ω	55	---	---	V
I_{CES}	V_{BE} = 0V	V_{CE} = 28 V	---	---	5	mA
h_{FE}	V_{CE} = 5V	I_C = 1 A	15	---	150	---

DYNAMIC

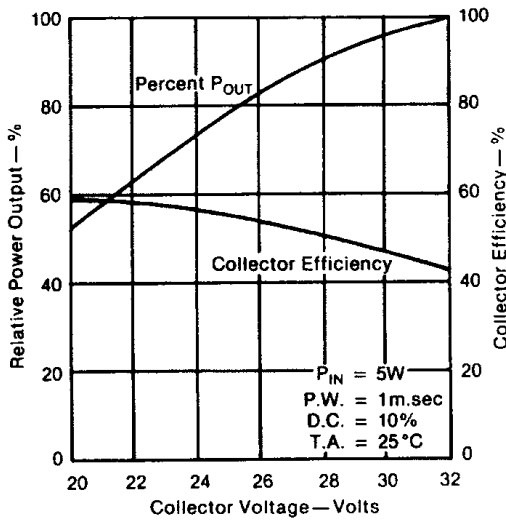
Symbol	Test Conditions			Value			Units
				Min.	Typ.	Max.	
P_{OUT}	f = 1215 – 1400 MHz	P_{IN} = 5W Peak	V_{CC} = 28V	26	36	---	W
η_C	f = 1215 – 1400 MHz	P_{IN} = 5W Peak	V_{CC} = 28V	45	49	---	%
G_P	f = 1215 – 1400 MHz	P_{IN} = 5W Peak	V_{CC} = 28V	7.2	8.5	---	dB
Conditions	Pulse Width = 1000μS Duty Cycle = 10%						

IMPEDANCE DATA

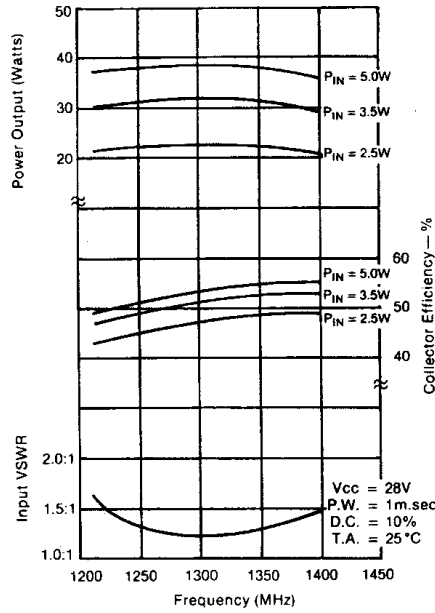
Freq. (MHz)	Z _{IN} (Ω)	Z _{OUT} (Ω)
1.2	10.5 + j 9.0	9.0 + j 3.0
1.3	9.5 + j 8.0	6.5 + j 2.0
1.4	8.5 + j 7.0	6.0 + j 1.0

TYPICAL PERFORMANCE

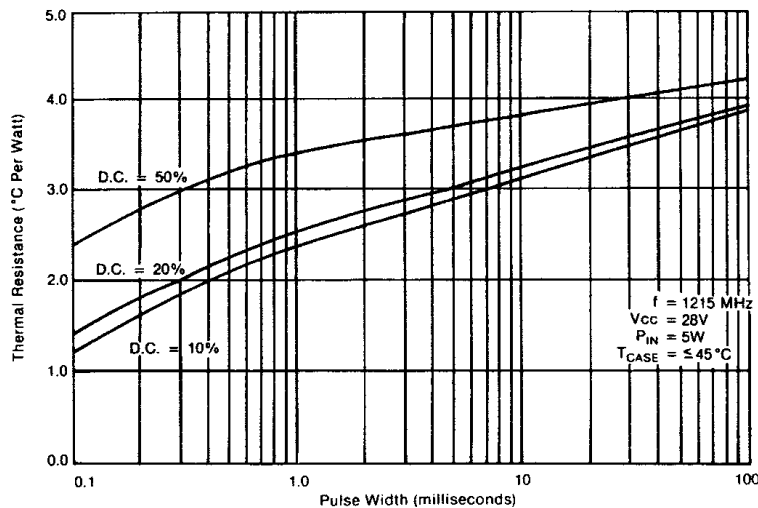
RELATIVE POWER OUTPUT & COLLECTOR EFFICIENCY vs COLLECTOR VOLTAGE



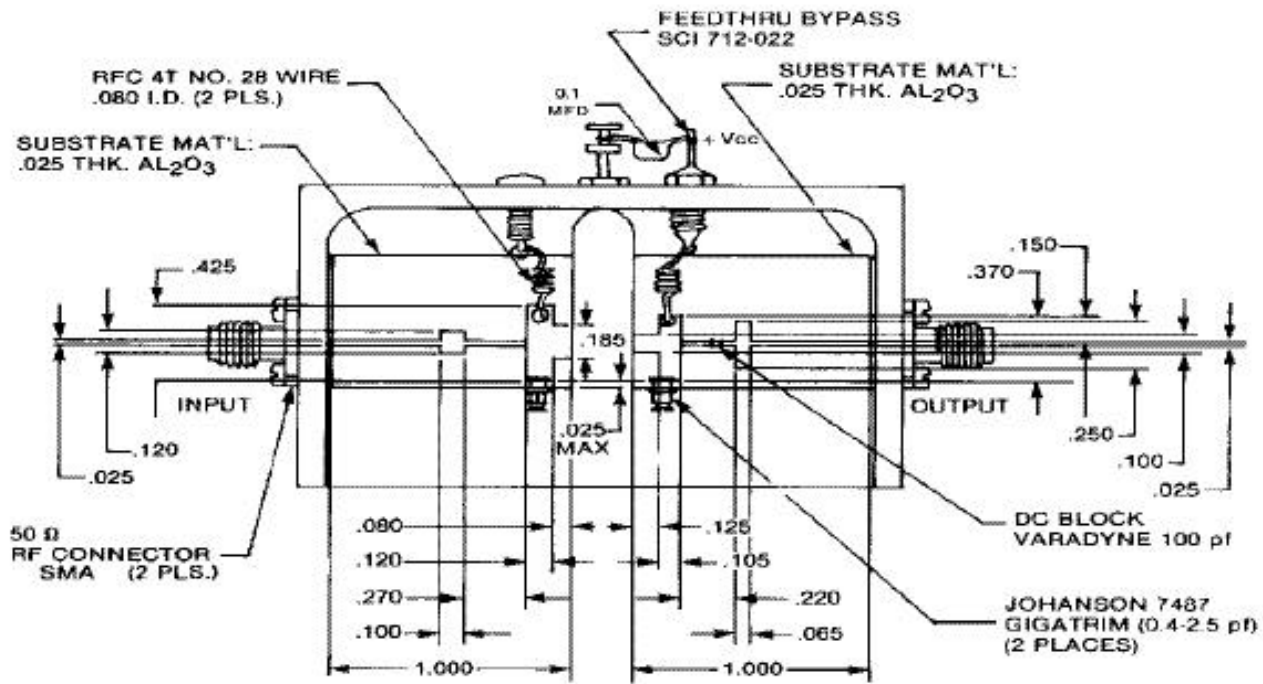
TYPICAL BROADBAND POWER AMPLIFIER

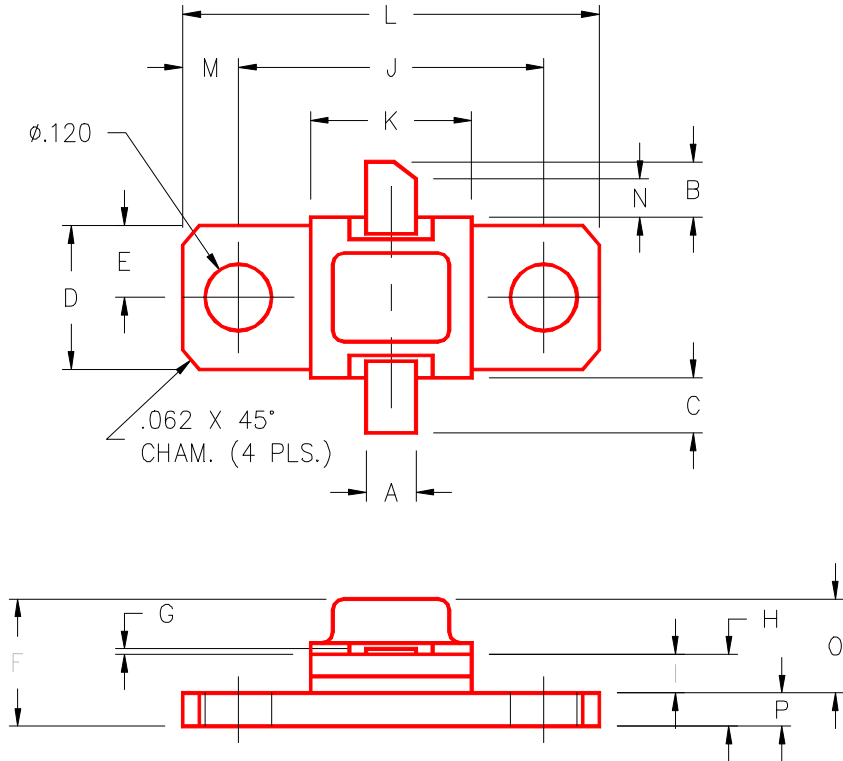


MAXIMUM THERMAL RESISTANCE vs PULSE WIDTH



TEST CIRCUIT



PACKAGE MECHANICAL DATA
PACKAGE STYLE M222


	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.100/2,54		J	.562/14,28	
B	.110/2,80		K	.310/7,87	
C	.110/2,80		L	.800/20,32	
D	.296/7,52		M	.119/3,02	
E	.148/3,76		N	.050/1,27	
F		.230/5,84	O		.170/4,32
G	.003/0,08	.006/0,15	P	.062/1,58	
H	.118/3,00	.131/3,33			
I	.059/1,50				