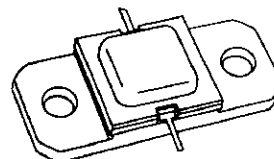


RF & MICROWAVE TRANSISTORS SATELLITE COMMUNICATIONS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- $\infty:1$ VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 12$ W MIN. WITH 8.5 dB GAIN



.400 x .400 2NLFL (S042)
hermetically sealed

ORDER CODE

AM1517-012

BRANDING

1517-12

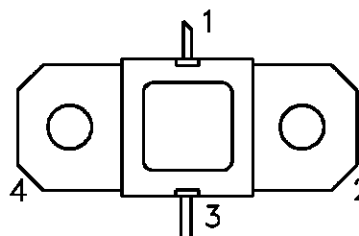
DESCRIPTION

The AM1517-012 power transistor is designed specifically for Satellite communications applications in the 1.5 – 1.7 GHz frequency range.

The device is capable of withstanding any mismatch load condition at any phase angle (VSWR $\infty:1$) under full rated conditions. The unit is an overlay, emitter site ballasted, geometry utilizing a Refractory/Gold metallization system.

The AM1517-012 is supplied in the AMPAC™ Hermetic/Ceramic package with internal Input/Output matching structures.

PIN CONNECTION



1. Collector

2. Base

3. Emitter

4. Base

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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 100^{\circ}C$)	27	W
I_C	Device Current*	1.25	A
V_{CC}	Collector-Supply Voltage*	30	V
T_J	Junction Temperature	200	$^{\circ}C$
T_{STG}	Storage Temperature	- 65 to +200	$^{\circ}C$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	5.5	$^{\circ}C/W$
---------------	-----------------------------------	-----	---------------

*Applies only to rated RF amplifier operation

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

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 4mA	I _E = 0mA	45	—	—	V
BV _{EBO}	I _E = 4mA	I _C = 0mA	3.0	—	—	V
I _{CBO}	V _{CB} = 28V		—	—	1	mA
h _{FE}	V _{CE} = 5V	I _C = .8A	15	—	150	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 1.5 — 1.7GHz	P _{IN} = 1.7W	V _{CC} = 28V	12	13	—	W
η _c	f = 1.5 — 1.7GHz	P _{IN} = 1.7W	V _{CC} = 28V	55	58	—	%
G _P	f = 1.5 — 1.7GHz	P _{IN} = 1.7W	V _{CC} = 28V	8.5	—	—	dB

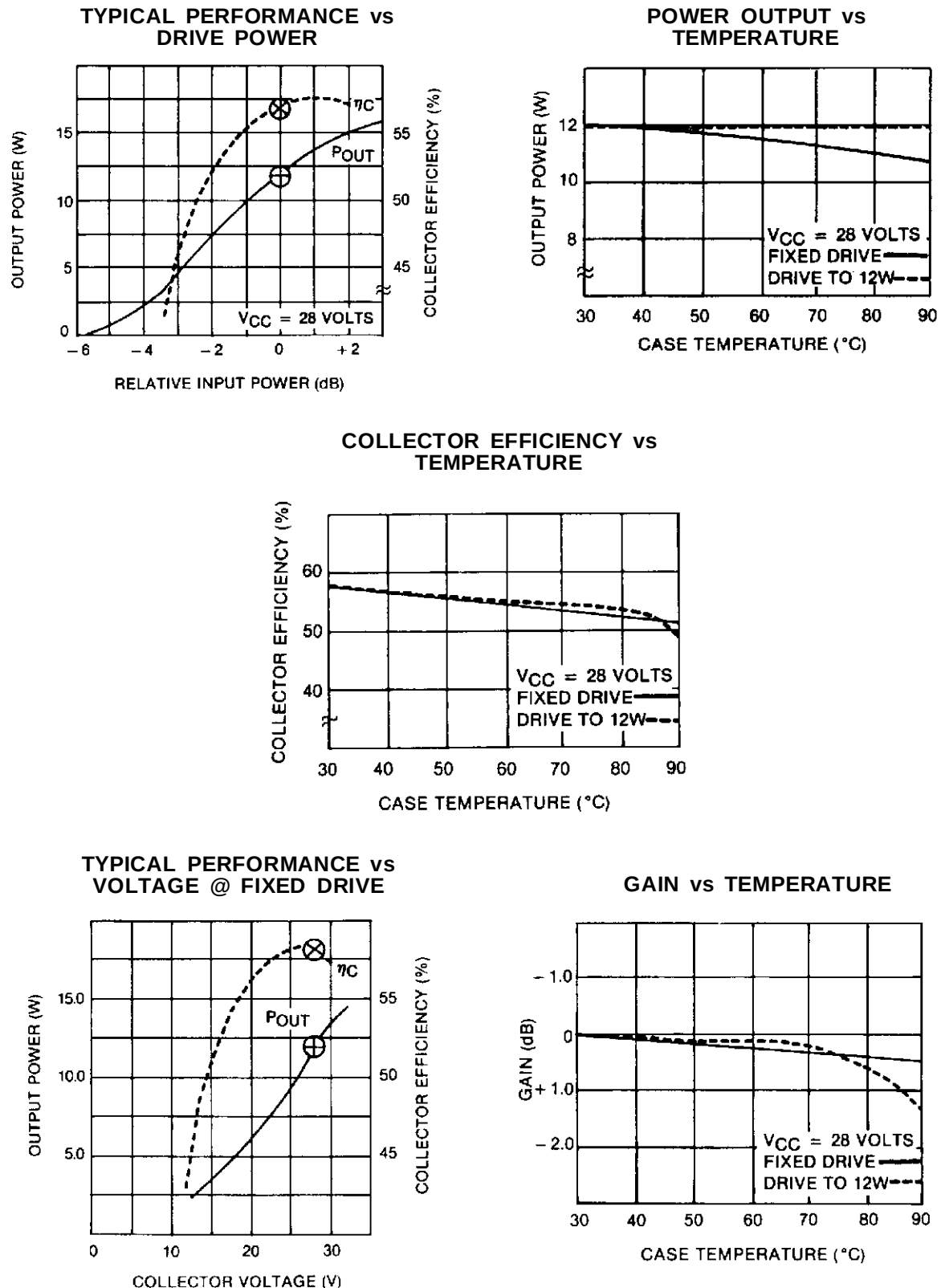
Note: AM1517 series vary P_{IN} to achieve P_{OUT}; performance guaranteed in 50 MHz increments.
Alpha-Suffix added to AM1517 P/N designates band segment.

A -1500 = 1550 MHz

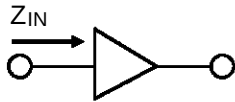
M -1620 = 1660 MHz

S -1625 = 1675 MHz

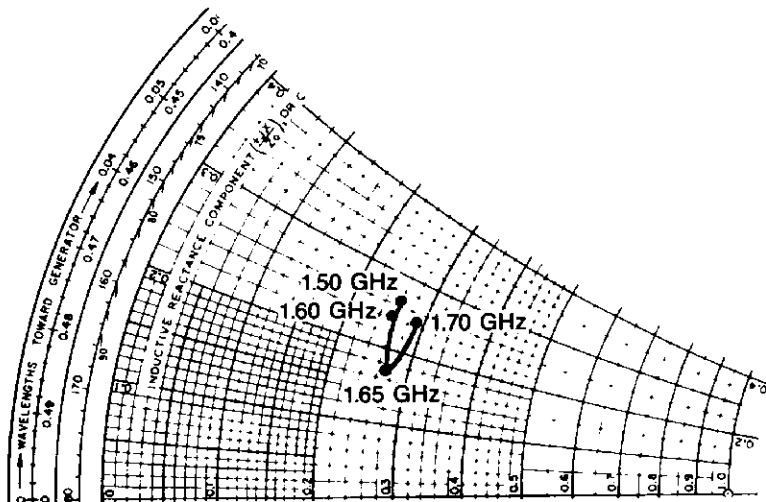
TYPICAL PERFORMANCE



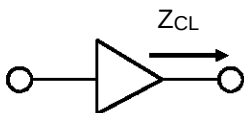
IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCE

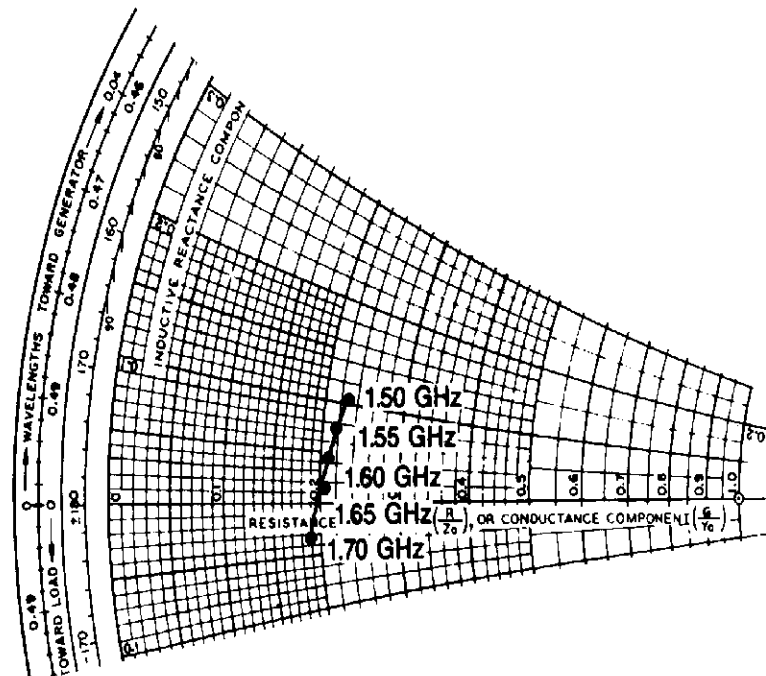
$P_{OUT} = 12\text{ W}$
 $V_{CC} = 28\text{ V}$
 $Z_0 = 50\text{ ohms}$



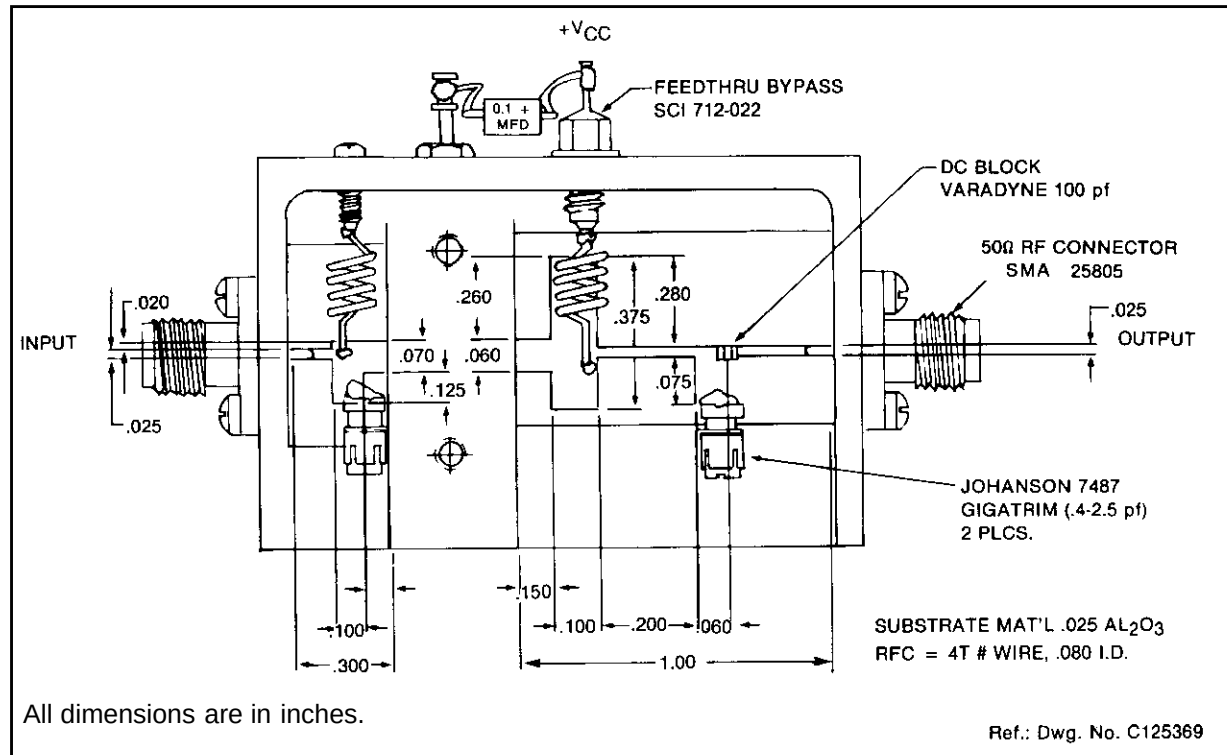
FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
L = 1.50 GHz	$13.0 + j\ 13.5$	$11.5 + j\ 5.0$
M = 1.60 GHz	$13.0 + j\ 12.0$	$10.5 + j\ 2.2$
H = 1.70 GHz	$14.5 + j\ 12.5$	$9.5 - j\ 1.5$

TYPICAL COLLECTOR
LOAD IMPEDANCE

$P_{OUT} = 12\text{ W}$
 $V_{CC} = 28\text{ V}$
 $Z_0 = 50\text{ ohms}$

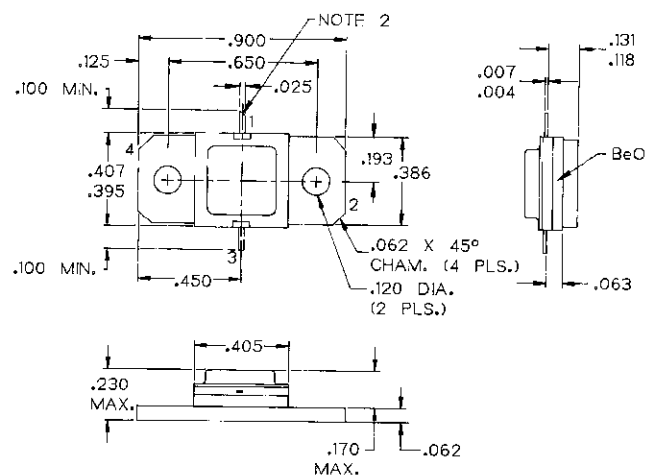


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J113214F



NOTES:

1. ALL TOLERANCE $\pm .010$ EXCEPT WHERE NOTED;
DIMENSIONS IN INCHES.
2. COLLECTOR LEAD SLANT CUT.

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A