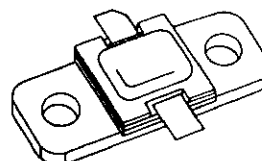


RF & MICROWAVE TRANSISTORS L-BAND RADAR APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- 5:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 14.5$ W MIN. WITH 8.6 dB GAIN



.310 x .310 2LFL (S064)
hermetically sealed

ORDER CODE
AM 81214-015

BRANDING
81214-15

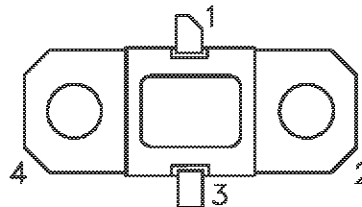
DESCRIPTION

The AM81214-015 device is a high power Class C transistor specifically designed for L-Band Radar pulsed output and driver applications.

This device is capable of operation over a wide range of pulse widths, duty cycles, and temperatures and is capable of withstanding 5:1 output VSWR at rated RF conditions. Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

AM81214-015 is supplied in the grounded IMPAC™ Hermetic Metal/Ceramic package with internal input/output matching structures.

PIN CONNECTION



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

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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 100^{\circ}\text{C}$)	37.5	W
I_C	Device Current*	1.8	A
V_{CC}	Collector-Supply Voltage*	32	V
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*	4.0	$^{\circ}\text{C/W}$
---------------	-----------------------------------	-----	----------------------

*Applies only to rated RF amplifier operation

ELECTRICAL SPECIFICATIONS ($T_{case} = 25^{\circ}C$)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 15mA$	$I_E = 0mA$	48	—	—	V
BV_{EBO}	$I_E = 1.5mA$	$I_C = 0mA$	3.5	—	—	V
BV_{CER}	$I_C = 15mA$	$R_{BE} = 10\Omega$	48	—	—	V
I_{CES}	$V_{CE} = 28V$	$V_{BE} = 28V$	—	—	1.5	mA
h_{FE}	$V_{CE} = 5V$	$I_C = 1A$	30	—	300	—

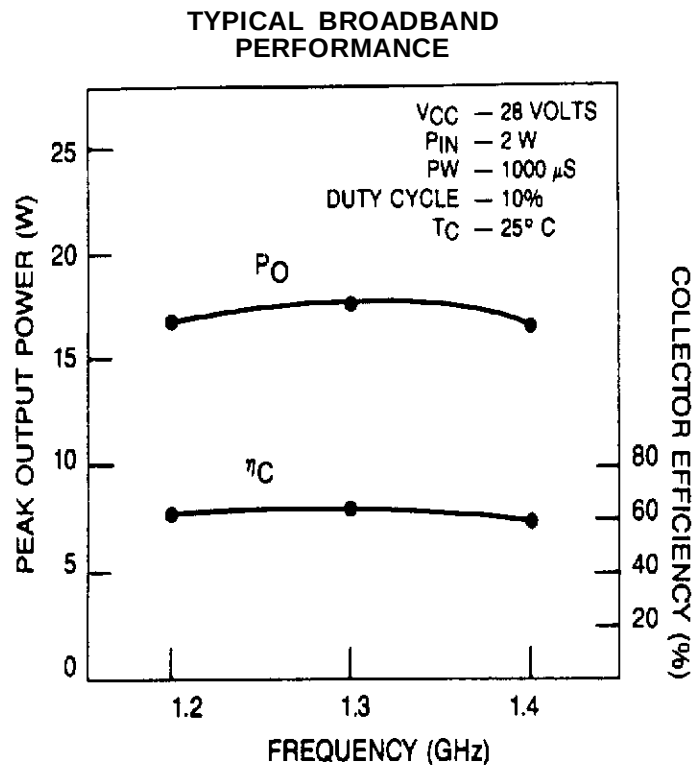
DYNAMIC

Symbol	Test Conditions				Value			Unit
					Min.	Typ.	Max.	
P_{IN}	$f = 1.2 - 1.4GHz$	$P_{IN} = 2W$ Peak	$V_{CC} = 28V$		14.5	17.0	—	W
η_C	$f = 1.2 - 1.4GHz$	$P_{IN} = 2W$ Peak	$V_{CC} = 28V$		48	58	—	%
G_P	$f = 1.2 - 1.4GHz$	$P_{IN} = 2W$ Peak	$V_{CC} = 28V$		8.6	9.3	—	dB

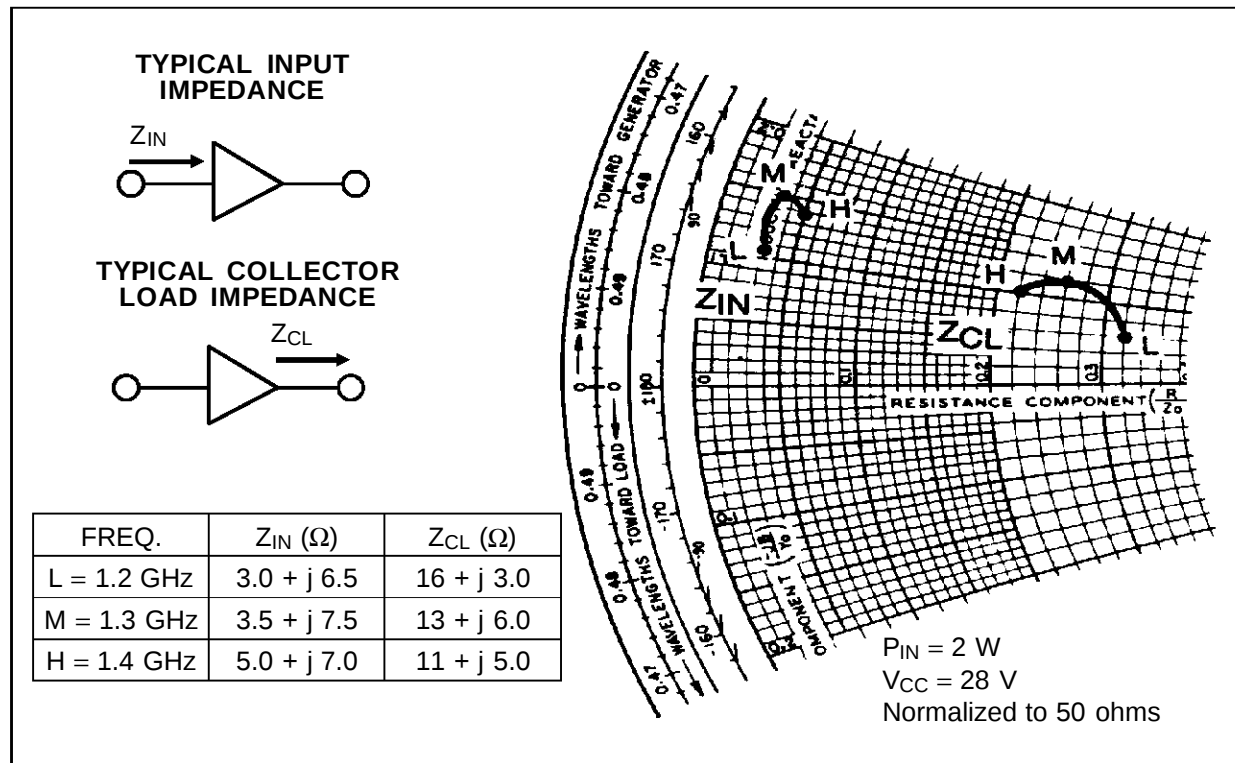
Note: Pulse Width = 1000 μS

Duty Cycle = 10%

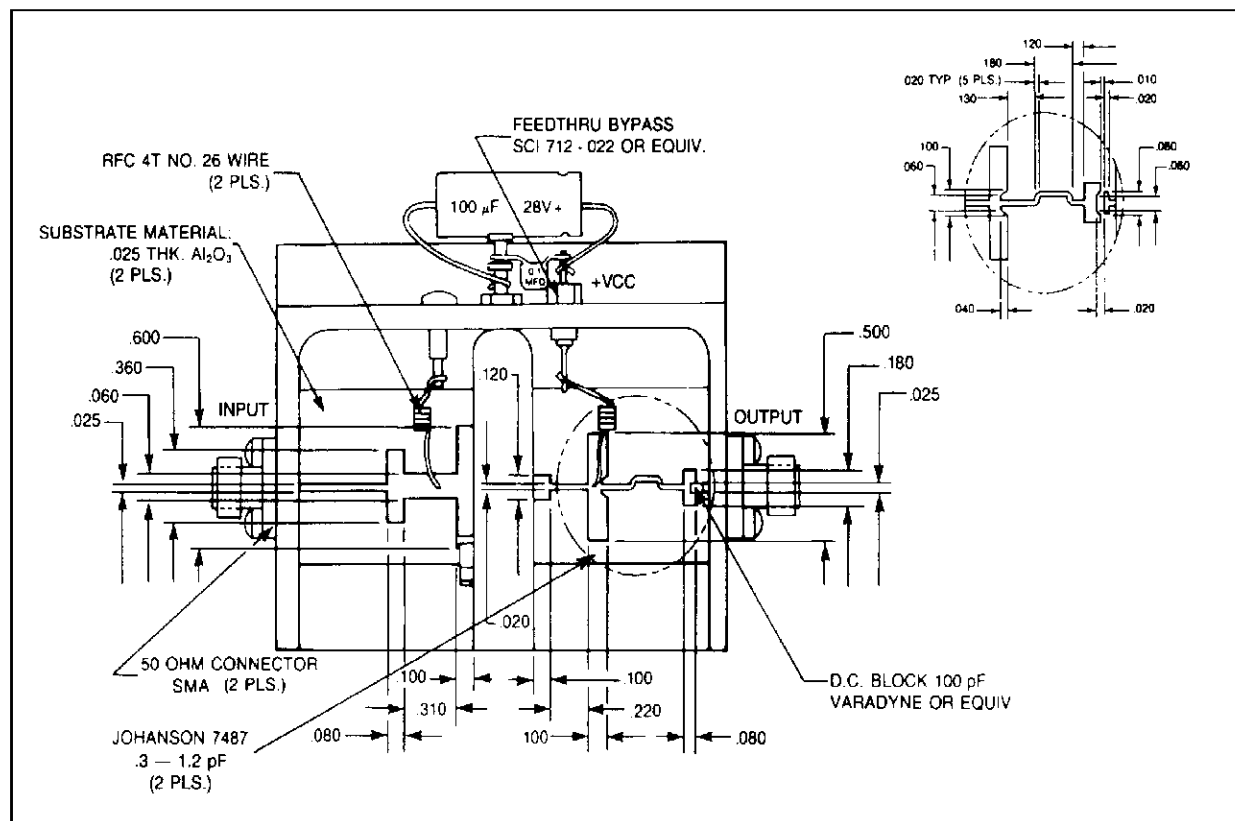
TYPICAL PERFORMANCE



IMPEDANCE DATA

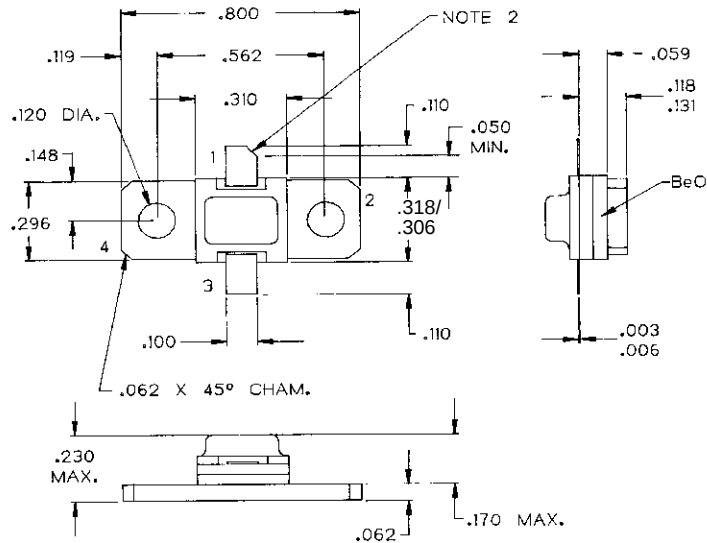


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J133100D



NOTES:

1. ALL TOLERANCE $\pm .010$ EXCEPT WHERE NOTED;
DIMENSIONS IN INCHES.
2. COLLECTOR LEAD CHAMFER 45° NOM. X .040 NOM.

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