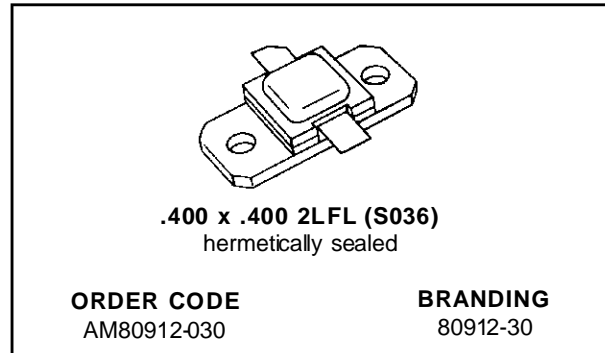


RF & MICROWAVE TRANSISTORS SPECIALITY AVIONICS/JTIDS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- 15:1 VSWR CAPABILITY
- LOW RF THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 30 \text{ W MIN. WITH } 7.8 \text{ dB GAIN}$



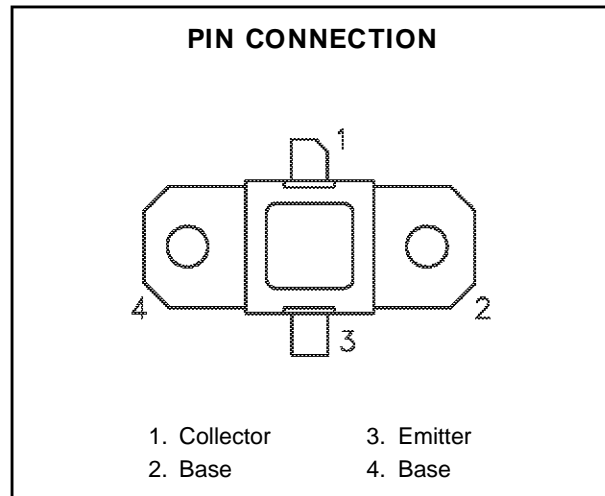
DESCRIPTION

The AM80912-030 device is a high power Class C transistor specifically designed for JTIDS 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 15:1 output VSWR at rated RF conditions.

Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

The AM80912-030 is supplied in the hermetic metal/ceramic package with internal input matching structures.



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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 85^{\circ}\text{C}$)	75	W
I_C	Collector Current*	3.5	A
V_{CC}	Collector-Supply Voltage*	40	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	2.2	$^{\circ}\text{C/W}$
---------------	----------------------------------	-----	----------------------

*Applies only to rated RF amplifier operation.

AM80912-030**ELECTRICAL SPECIFICATIONS** ($T_{\text{case}} = 25^{\circ}\text{C}$)

STATIC

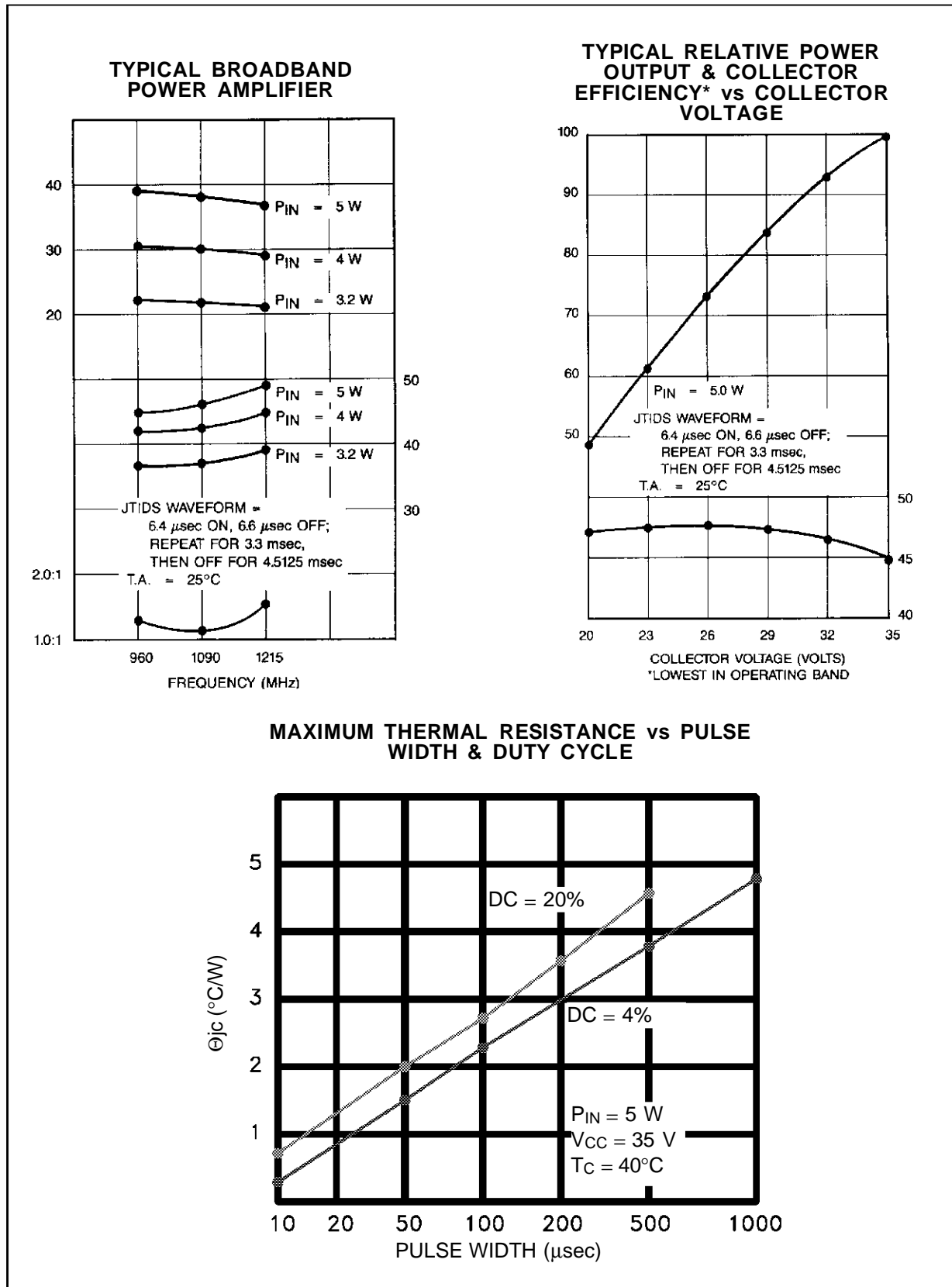
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 10\text{mA}$	55	—	—	V
BV_{EBO}	$I_{\text{E}} = 1\text{mA}$	3.5	—	—	V
BV_{CER}	$I_{\text{C}} = 20\text{mA}$ $R_{\text{BE}} = 10\Omega$	55	—	—	V
I_{CES}	$V_{\text{CE}} = 35\text{V}$	—	—	5.0	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$ $I_{\text{C}} = 1.0\text{A}$	15	—	150	—

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 960 \text{ — } 1215\text{MHz}$ $P_{\text{IN}} = 5.0\text{W}$ $V_{\text{CC}} = +35\text{V}$	30	36	—	W
η_{C}	$f = 960 \text{ — } 1215\text{MHz}$ $P_{\text{IN}} = 5.0\text{W}$ $V_{\text{CC}} = +35\text{V}$	40	45	—	%
G_{P}	$f = 960 \text{ — } 1215\text{MHz}$ $P_{\text{IN}} = 5.0\text{W}$ $V_{\text{CC}} = +35\text{V}$	7.8	8.6	—	dB

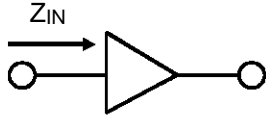
Note: Pulse format: 6.4 μs on 6.6 μs off, repeat for 3.3 ms, then off for 4.5125 ms.
Duty Cycle: Burst 49.2%, overall 20.8%

TYPICAL PERFORMANCE

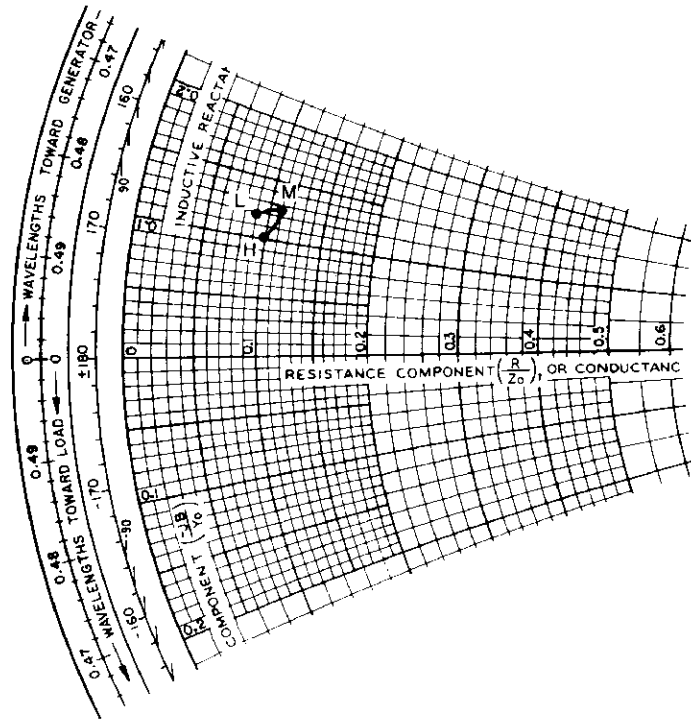


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

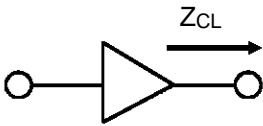


$P_{IN} = 5W$
 $V_{CC} = +35V$
 $Z_0^* = 50\Omega$

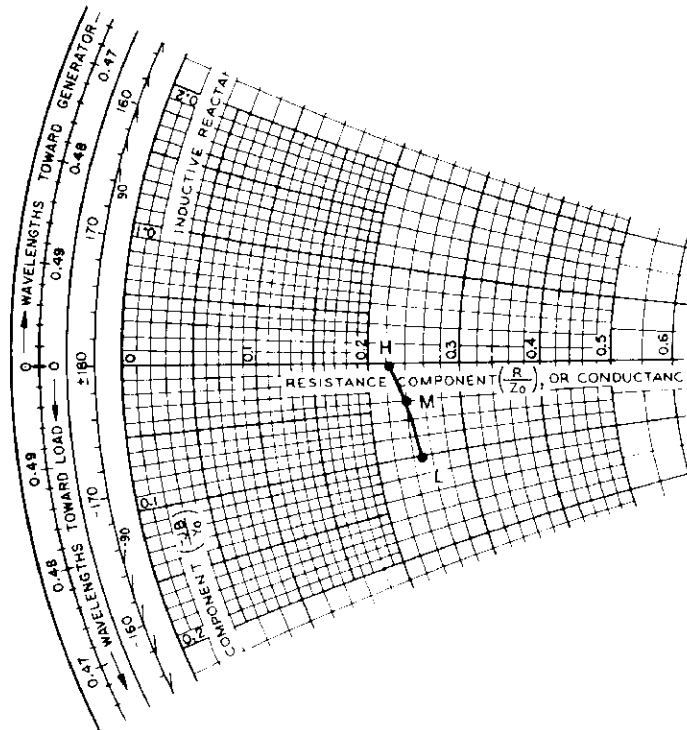


FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
L = 960 MHz	$4.5 + j 6.0$	$11.0 - j 0.5$
M = 1090 MHz	$5.5 + j 6.3$	$12.0 - j 2.0$
H = 1215 MHz	$5.0 + j 5.0$	$12.5 - j 5.0$

TYPICAL COLLECTOR LOAD IMPEDANCE

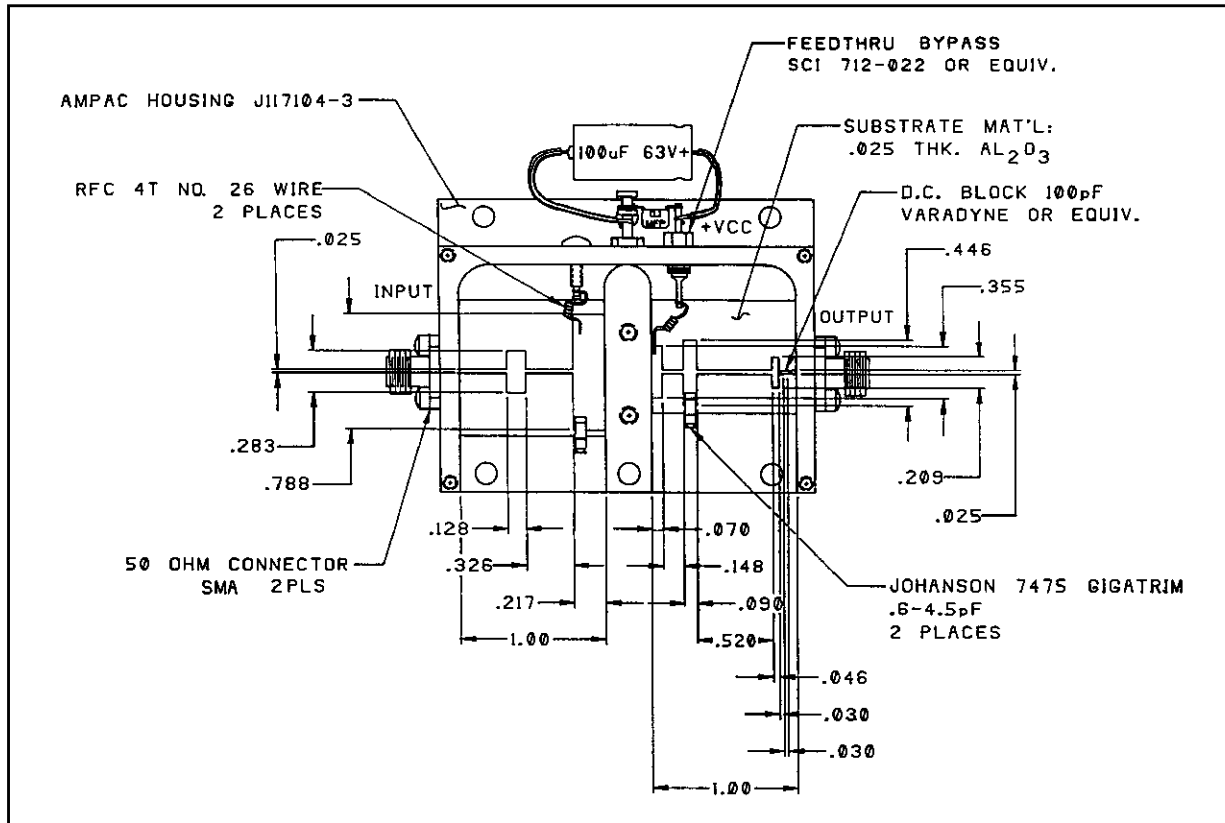


$P_{IN} = 5W$
 $V_{CC} = +35V$
 $Z_0^* = 50\Omega$

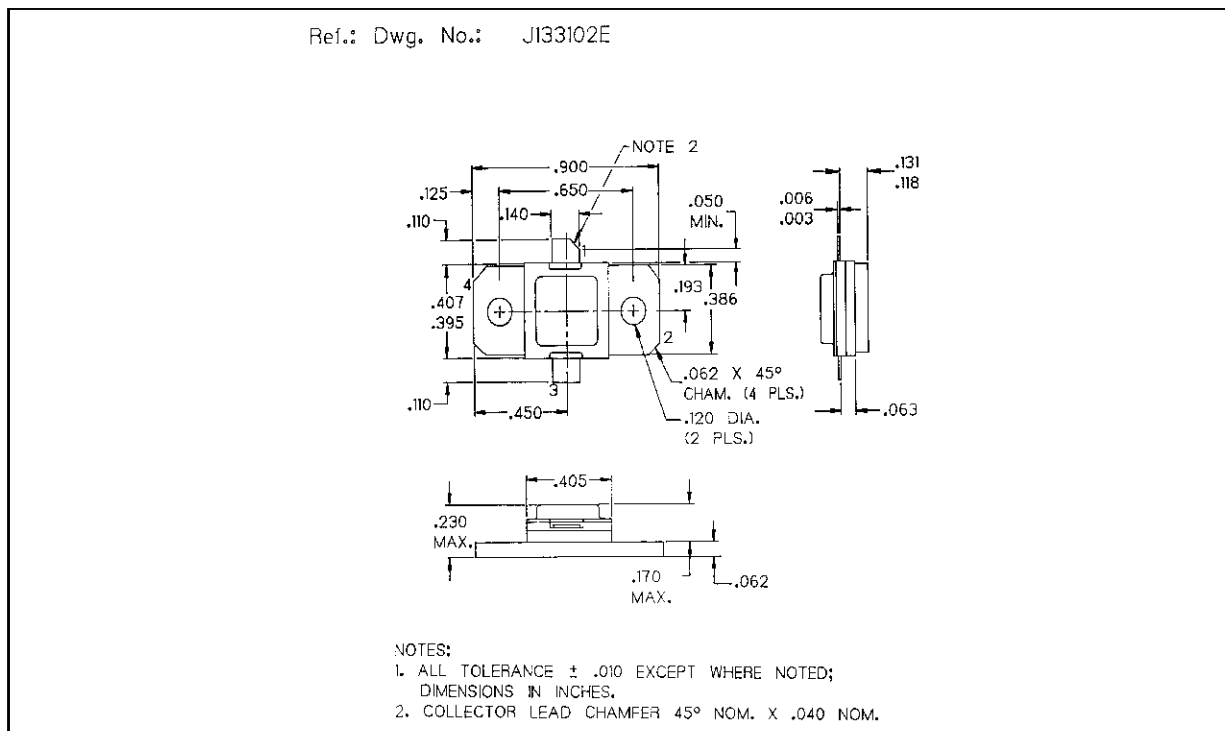


*Normalized Impedance

TEST CIRCUIT



PACKAGE MECHANICAL DATA



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