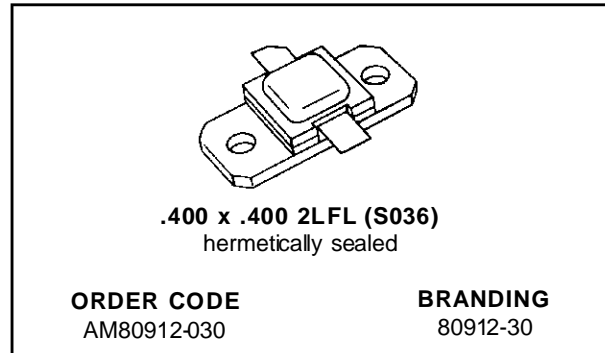


## RF & MICROWAVE TRANSISTORS SPECIALITY AVIONICS/JTIDS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- 15:1 VSWR CAPABILITY
- LOW RF THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P<sub>OUT</sub> = 30 W MIN. WITH 7.8 dB GAIN



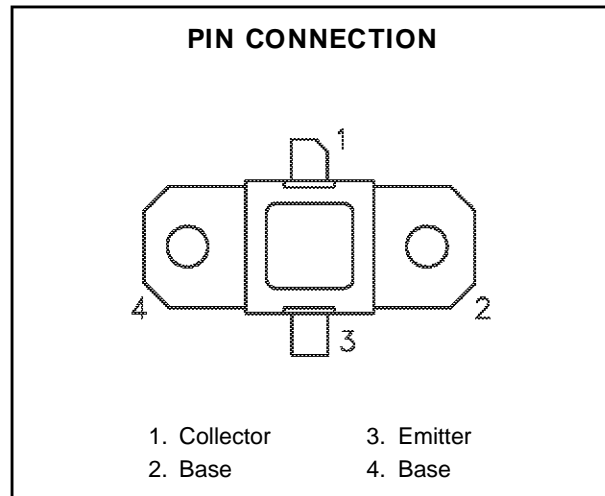
### DESCRIPTION

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<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
P <sub>DISS</sub>	Power Dissipation* (T <sub>C</sub> ≤ 85°C)	75	W
I <sub>C</sub>	Collector Current*	3.5	A
V <sub>CC</sub>	Collector-Supply Voltage*	40	V
T <sub>J</sub>	Junction Temperature (Pulsed RF Operation)	250	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +200	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	2.2	°C/W
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\*Applies only to rated RF amplifier operation.

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

## STATIC

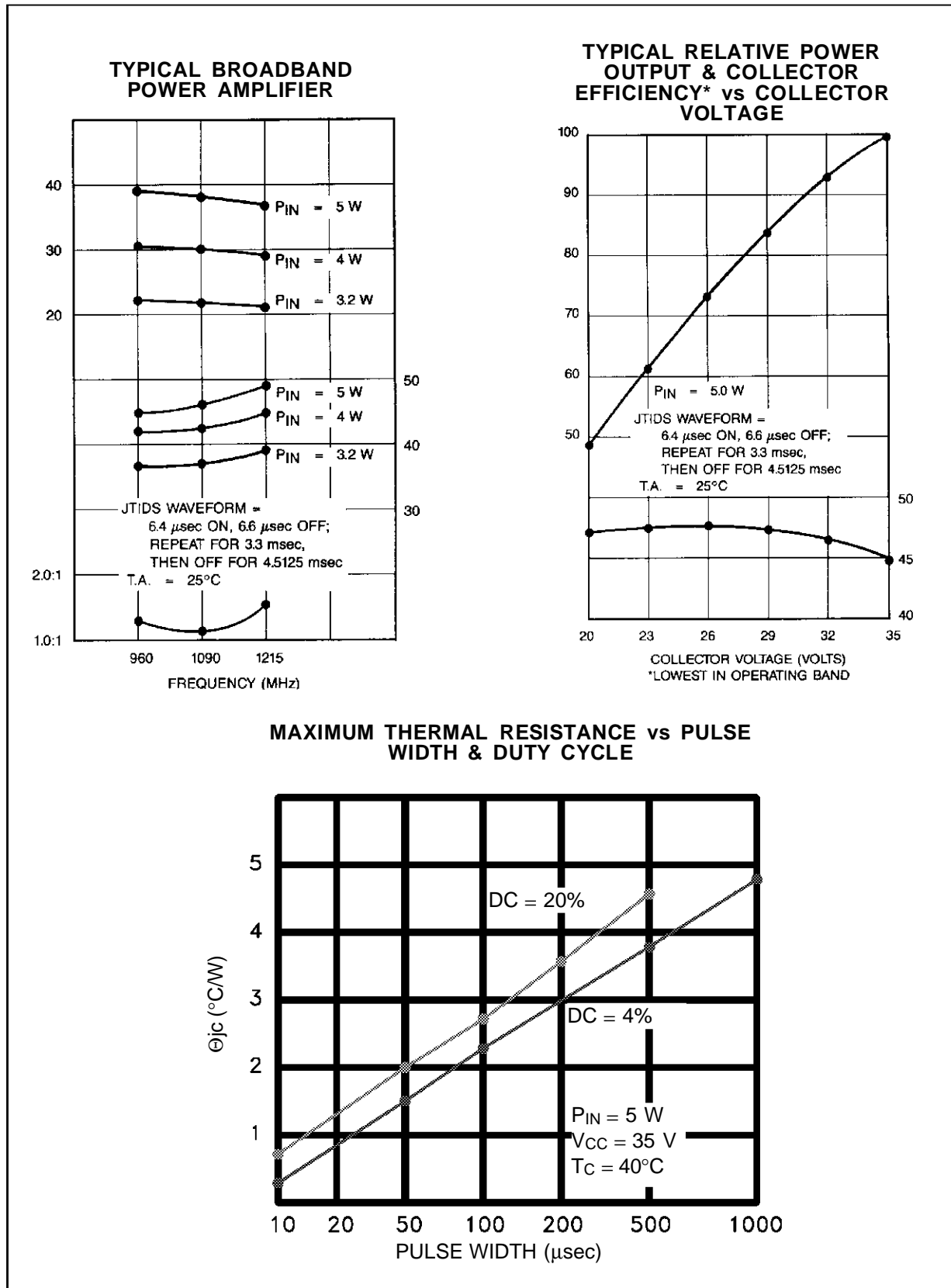
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
$BV_{\text{CBO}}$	$I_{\text{C}} = 10\text{mA}$	55	—	—	V
$BV_{\text{EBO}}$	$I_{\text{E}} = 1\text{mA}$	3.5	—	—	V
$BV_{\text{CER}}$	$I_{\text{C}} = 20\text{mA}$ $R_{\text{BE}} = 10\Omega$	55	—	—	V
$I_{\text{CES}}$	$V_{\text{CE}} = 35\text{V}$	—	—	5.0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

## DYNAMIC

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

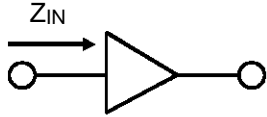
Note: Pulse format: 6.4  $\mu\text{s}$  on 6.6  $\mu\text{s}$  off, repeat for 3.3 ms, then off for 4.5125 ms.  
Duty Cycle: Burst 49.2%, overall 20.8%

TYPICAL PERFORMANCE

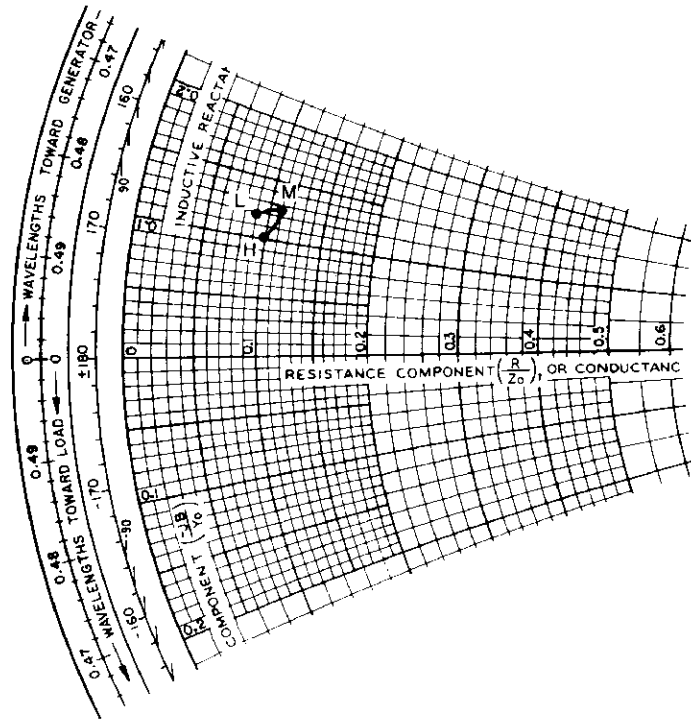


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

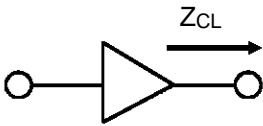


$P_{IN} = 5W$   
 $V_{CC} = +35V$   
 $Z_0^* = 50\Omega$

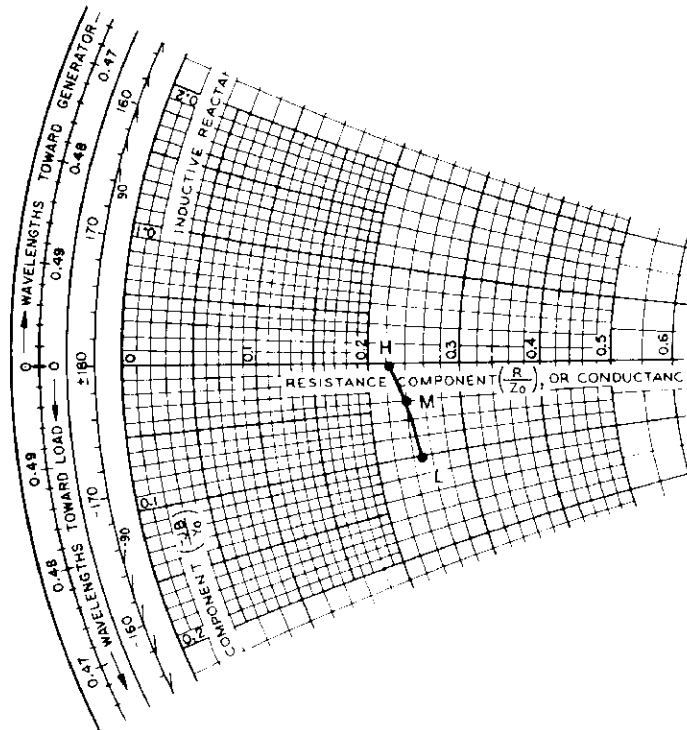


FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
L = 960 MHz	$4.5 + j 6.0$	$11.0 - j 0.5$
M = 1090 MHz	$5.5 + j 6.3$	$12.0 - j 2.0$
H = 1215 MHz	$5.0 + j 5.0$	$12.5 - j 5.0$

TYPICAL COLLECTOR LOAD IMPEDANCE

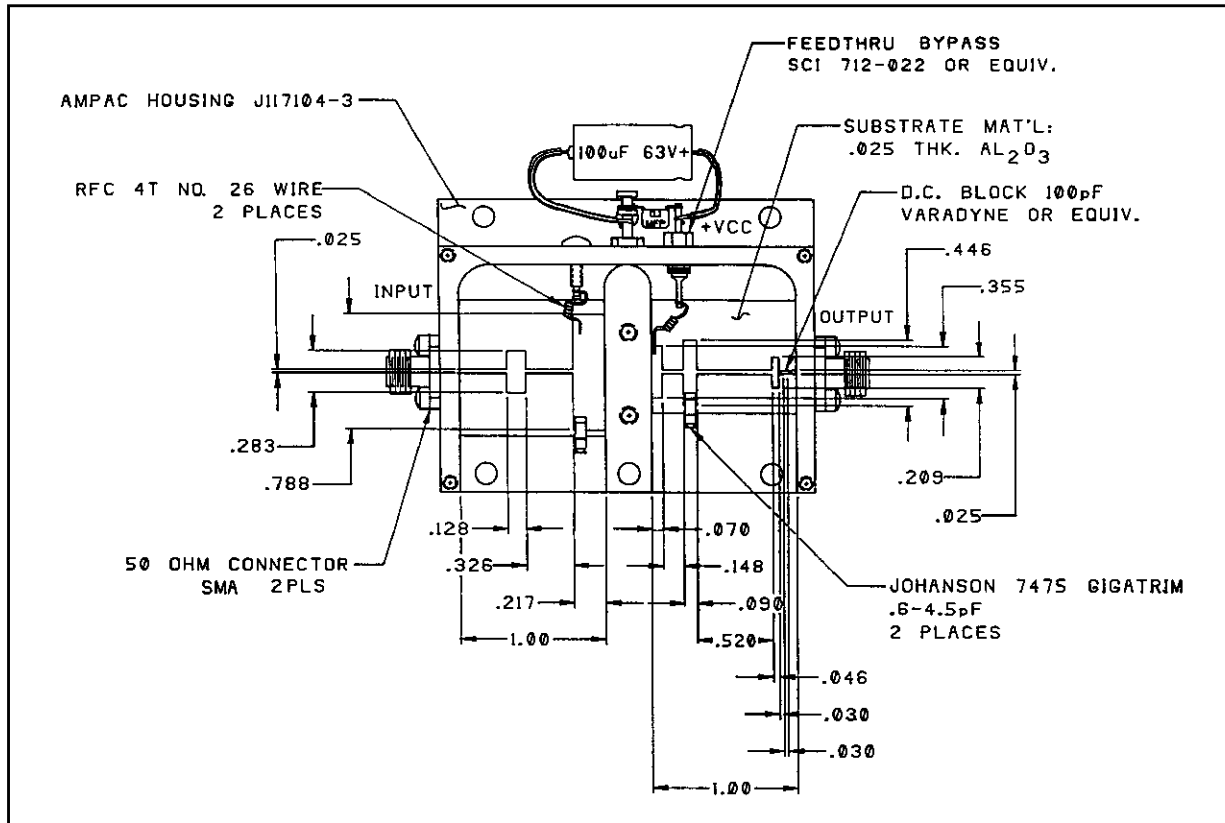


$P_{IN} = 5W$   
 $V_{CC} = +35V$   
 $Z_0^* = 50\Omega$

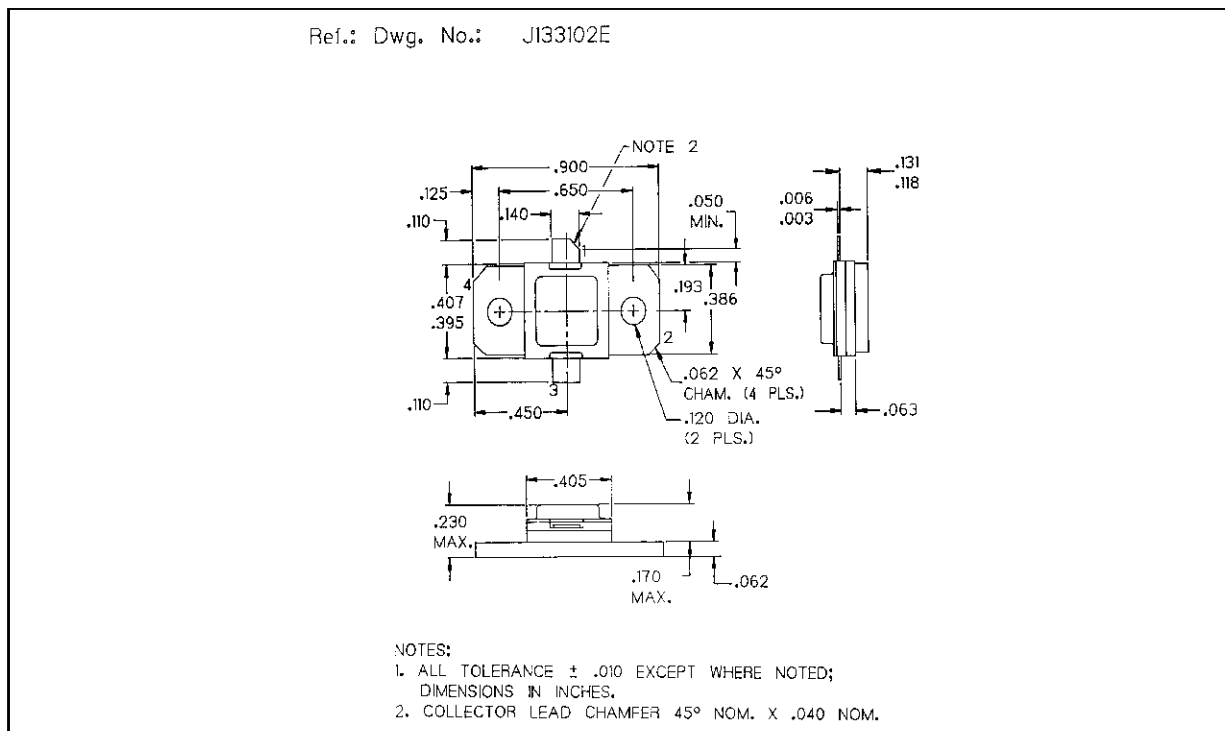


\*Normalized Impedance

TEST CIRCUIT



PACKAGE MECHANICAL DATA



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