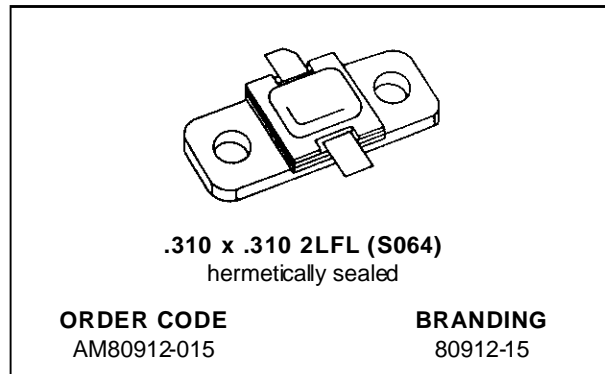


RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

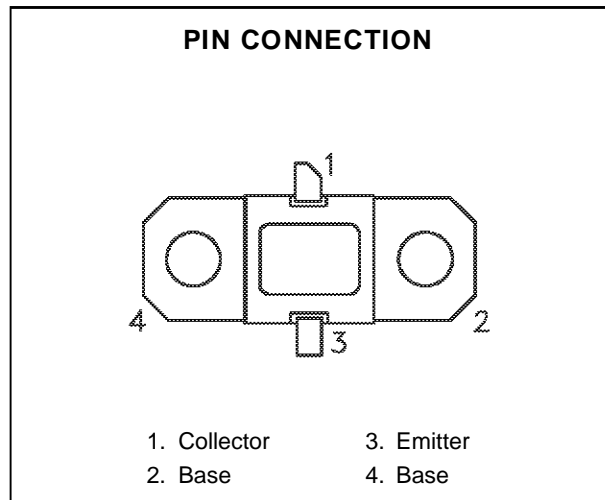
- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- ∞:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT MATCHING
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 15 W MIN. WITH 8.1 dB GAIN
- BANDWIDTH 255 MHz



DESCRIPTION

The AM80912-015 is designed for specialized avionics applications, including JTIDS, where power is provided under pulse formats utilizing short pulse widths and high burst or overall duty cycles.

The AM80912-015 is housed in the unique IMPAC™ Hermetic Metal/Ceramic package with



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

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation*(T _C ≤ 100°C)	50	W
I _C	Device Current*	1.8	A
V _{CC}	Collector-Supply Voltage*	32	V
T _J	Junction Temperature (Pulsed RF Operation)	250	°C
T _{STG}	Storage Temperature	- 65 to +200	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance*	3.0	°C/W
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*Applies only to rated RF amplifier operation

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

STATIC

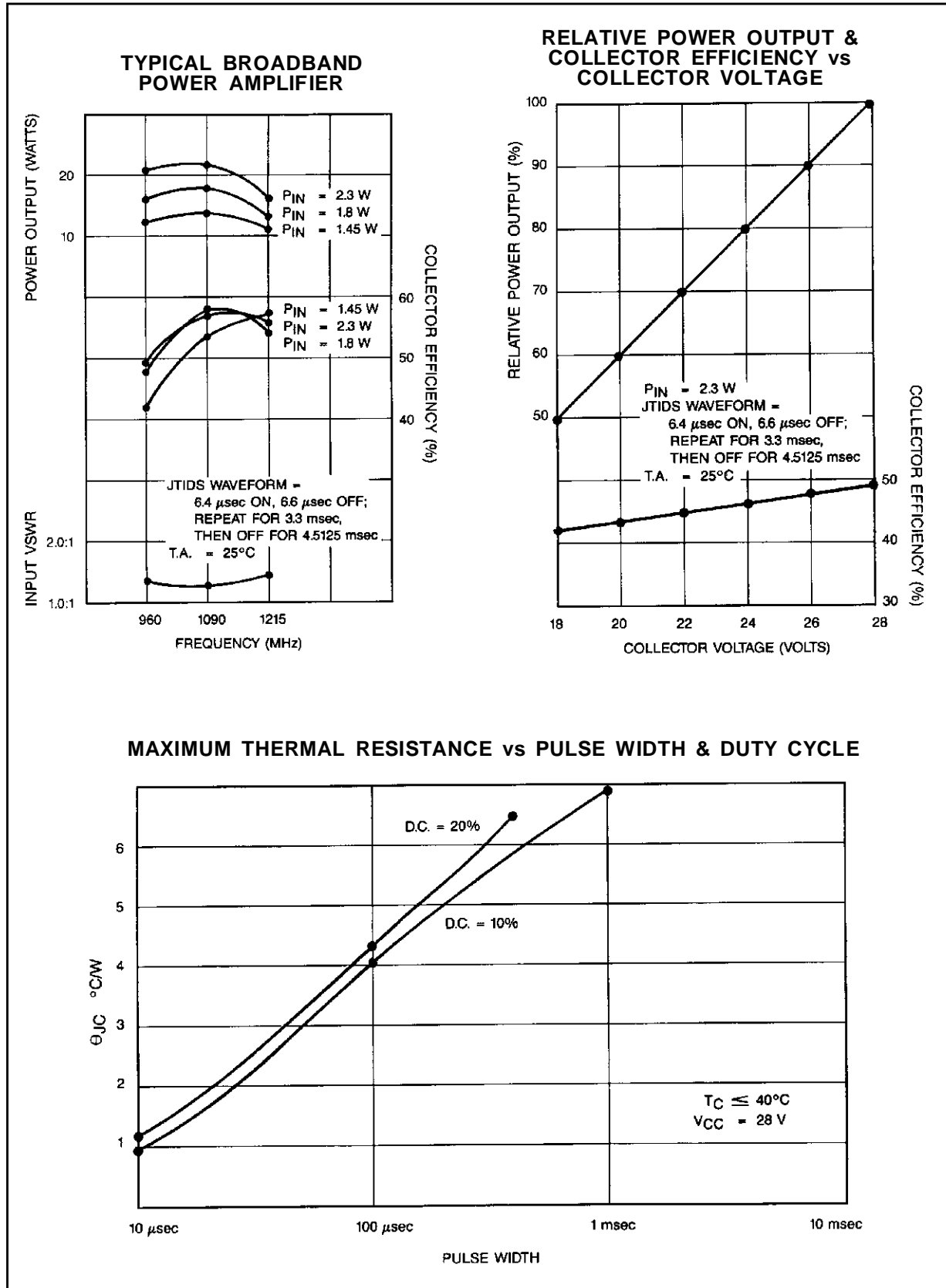
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 10\text{mA}$	$I_{\text{E}} = 0\text{mA}$	55	—	—	V	
BV_{EBO}	$I_{\text{E}} = 1\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.5	—	—	V	
BV_{CER}	$I_{\text{C}} = 10\text{mA}$	$R_{\text{BE}} = 10\Omega$	55	—	—	V	
I_{CES}	$V_{\text{BE}} = 0\text{V}$	$V_{\text{CE}} = 28\text{V}$	—	—	2.0	mA	
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 500\text{mA}$	15	—	150	—	

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 960 - 1215\text{MHz}$	$P_{\text{IN}} = 2.3\text{W}$	$V_{\text{CC}} = 28\text{V}$	15	17	—	W
η_{C}	$f = 960 - 1215\text{MHz}$	$P_{\text{IN}} = 2.3\text{W}$	$V_{\text{CC}} = 28\text{V}$	45	49	—	%
G_{P}	$f = 960 - 1215\text{MHz}$	$P_{\text{IN}} = 2.3\text{W}$	$V_{\text{CC}} = 28\text{V}$	8.1	8.9	—	dB

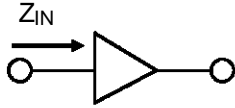
Note: Pulse format: 6.4 μS on 6.6 μS off, repeat for 3.3 ms, then off for 4.5125 ms.
Duty Cycle: Burst 49.2%, overall 20.8%

TYPICAL PERFORMANCE

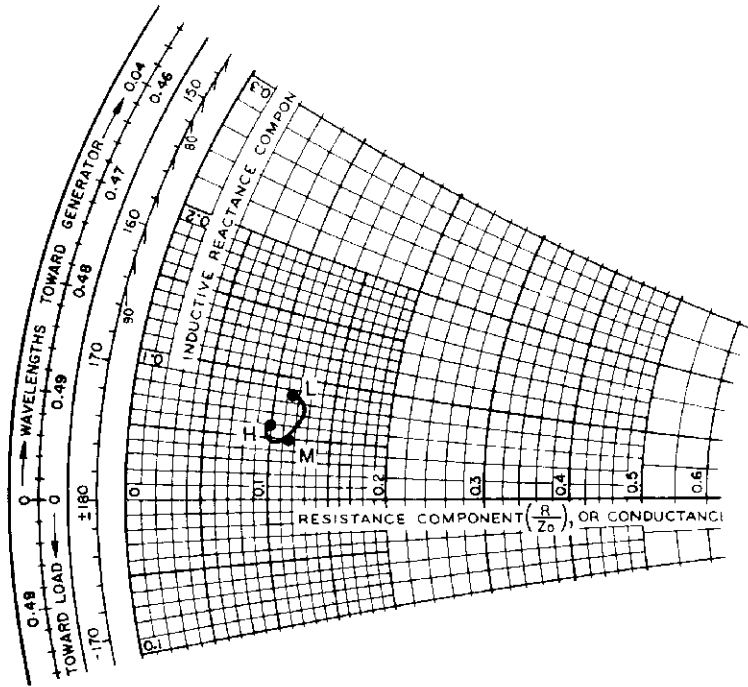


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

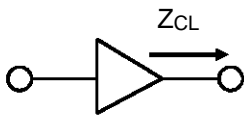


$P_{IN} = 2.3 \text{ W}$
 $V_{CC} = 28 \text{ V}$
 $Z_{O^*} = 50 \text{ ohms}$



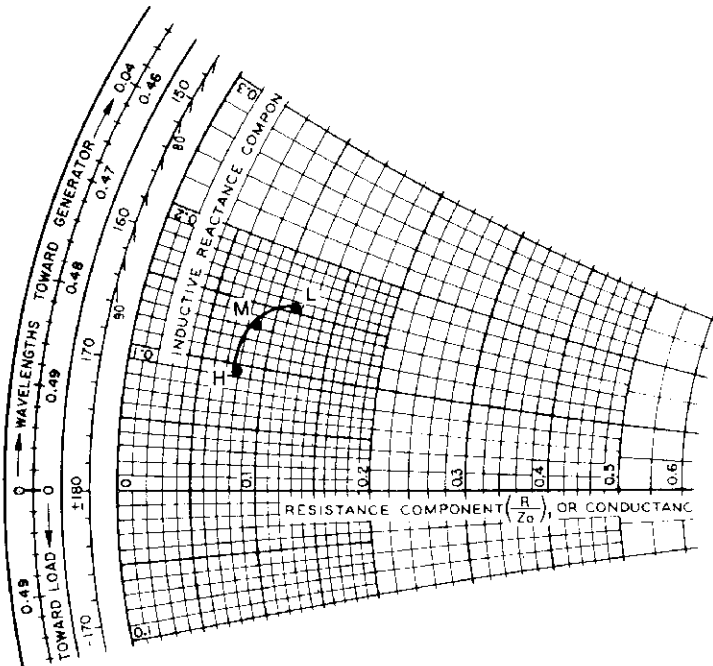
FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
L = 960 MHz	$5.7 + j 4.3$	$5.7 + j 7.7$
M = 1090 MHz	$5.8 + j 2.5$	$4.3 + j 6.5$
H = 1215 MHz	$5.0 + j 3.0$	$4.0 + j 4.8$

TYPICAL COLLECTOR LOAD IMPEDANCE

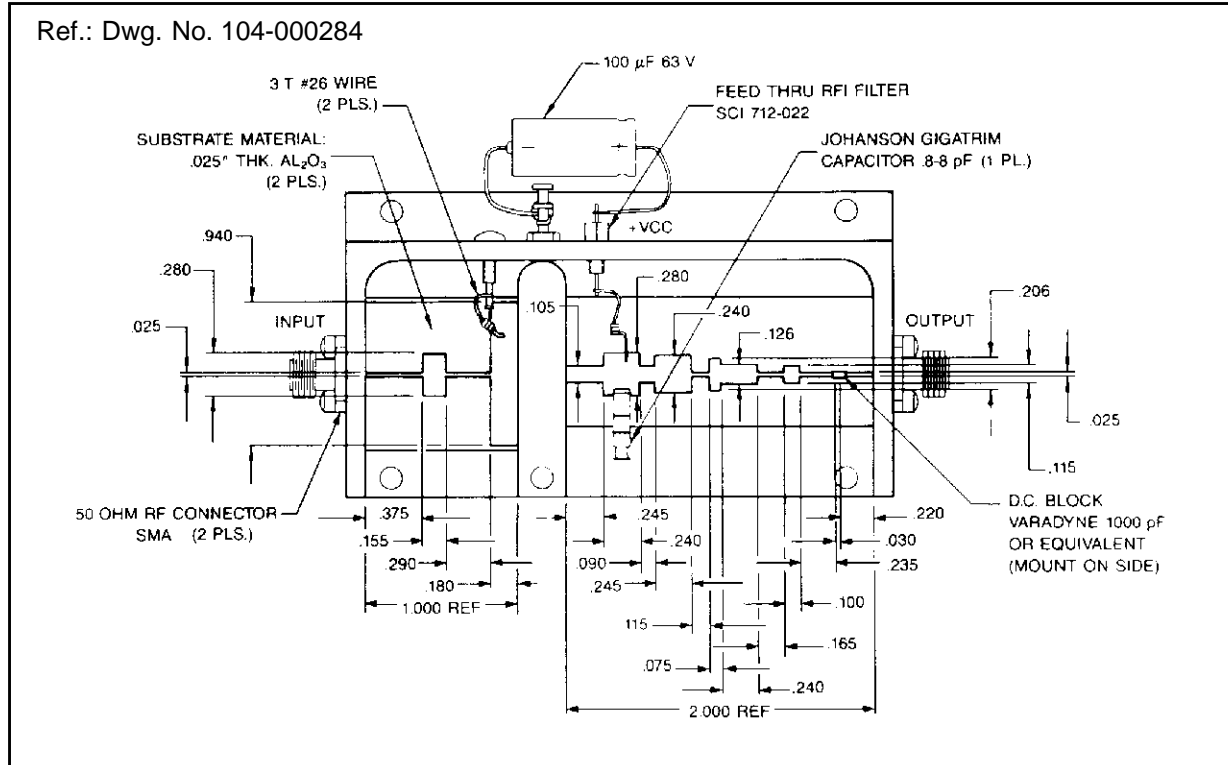


$P_{IN} = 2.3 \text{ W}$
 $V_{CC} = 28 \text{ V}$
 $Z_{O^*} = 50 \text{ ohms}$

*Normalized Impedance

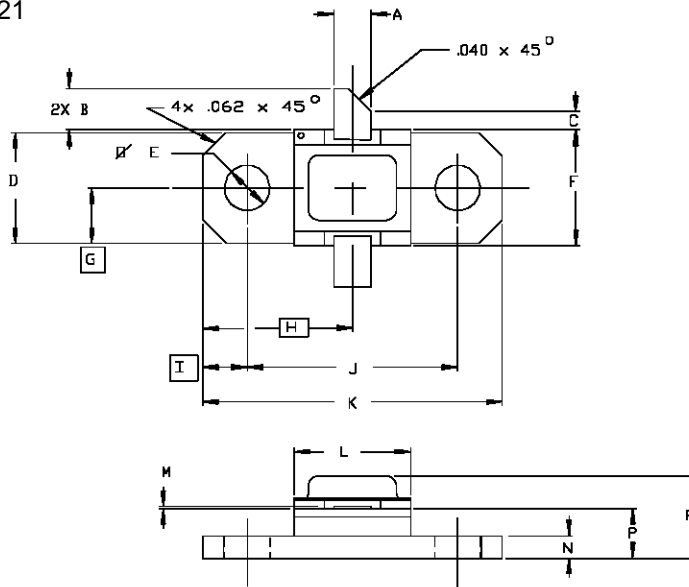


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-221



SGS-THOMSON MICROELECTRONICS		CONT'D			
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.095/2,41	.105/2,67	K	.790/20,07	.810/20,57
B	.100/2,54	.120/3,05	L	.300/7,62	.320/8,13
C	.050/1,27		M	.003/0,08	.006/0,15
D	.286/7,26	.306/7,77	N	.052/1,32	.072/1,83
E	.110/2,79	.130/3,30	P	.118/3,00	.131/3,33
F	.306/7,77	.318/8,08	R		.230/5,84
G	.148/3,76				
H	.400/10,16				
I	.119/3,02				
J	.552/14,02	.572/14,53			

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