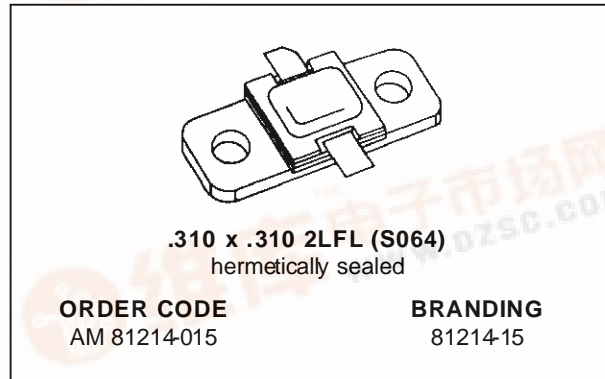




AM81214-015

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

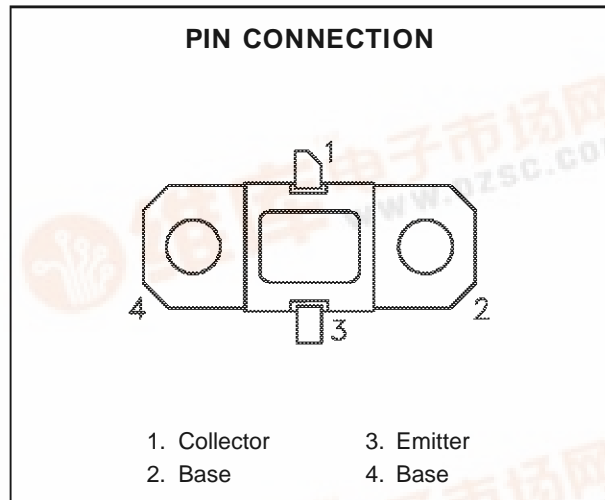


DESCRIPTION

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.



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

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation* (T _C ≤ 100°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	°C
T _{STG}	Storage Temperature	- 65 to +200	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance*	4.0	°C/W
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* Applies only to rated RF amplifier operation



AM81214-015

ELECTRICAL SPECIFICATIONS (T_{case} = 25°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} = 10Ω	48	—	—	V
I _{CES}	V _{CE} = 28V	V _{BE} = 28V	—	—	1.5	mA
h _{FE}	V _{CE} = 5V	I _C = 1A	30	—	300	—

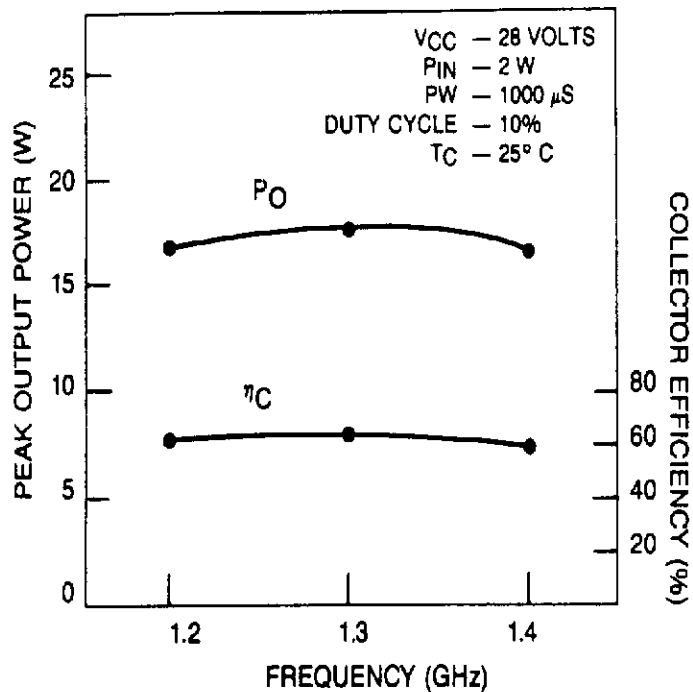
DYNAMIC

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

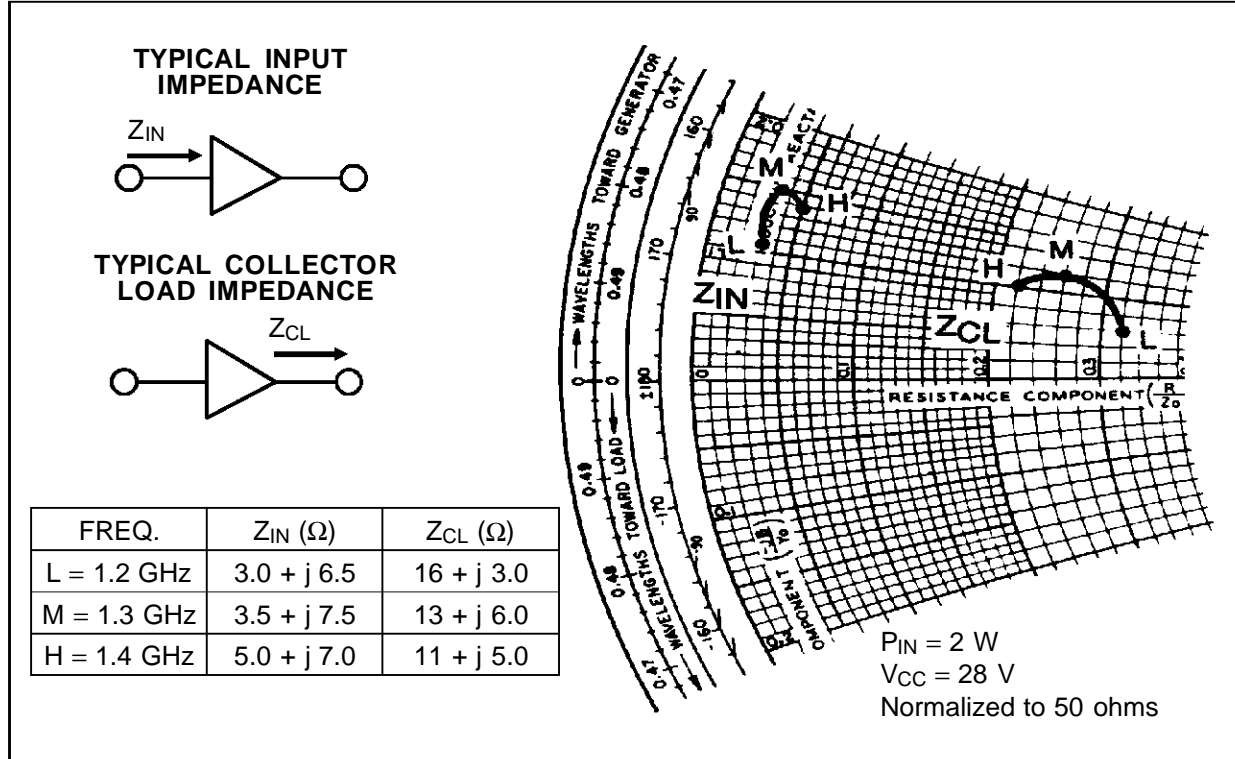
Note: Pulse Width = 1000 μS
Duty Cycle = 10%

TYPICAL PERFORMANCE

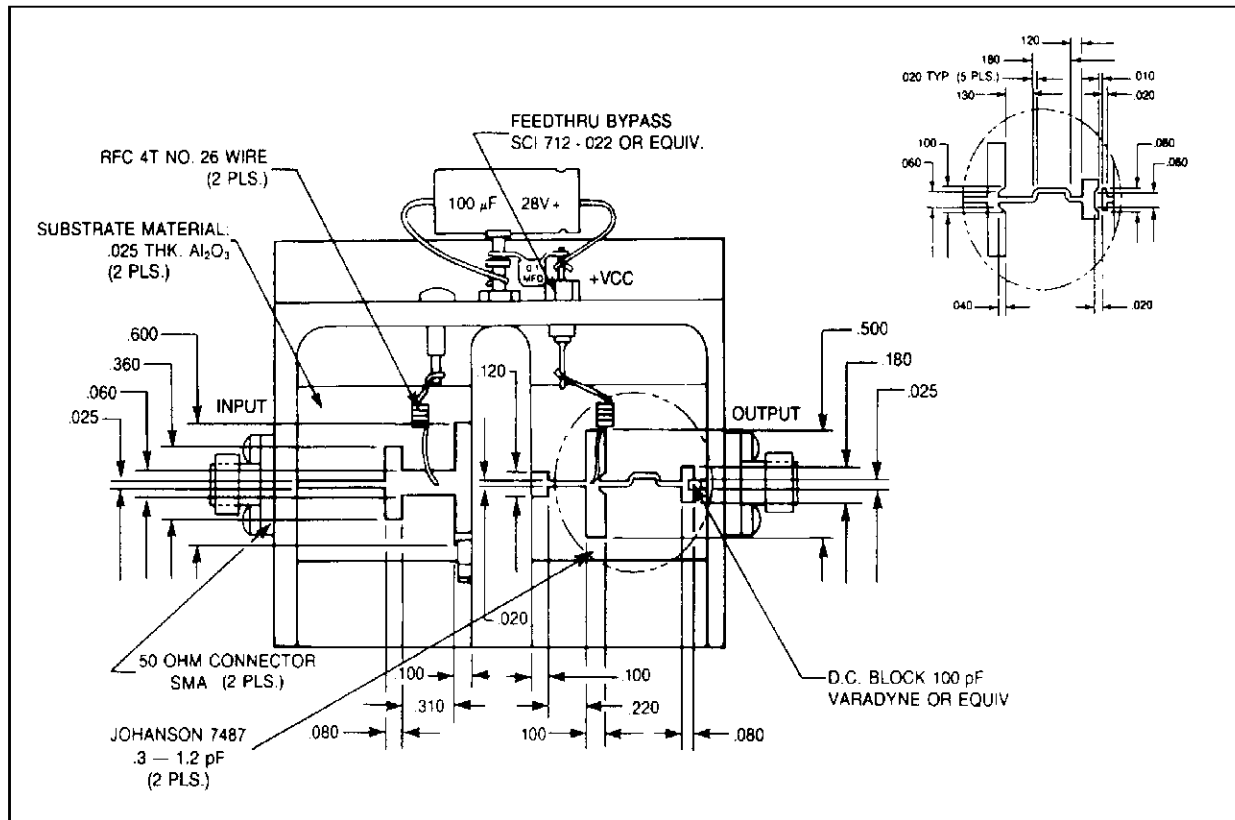
TYPICAL BROADBAND PERFORMANCE



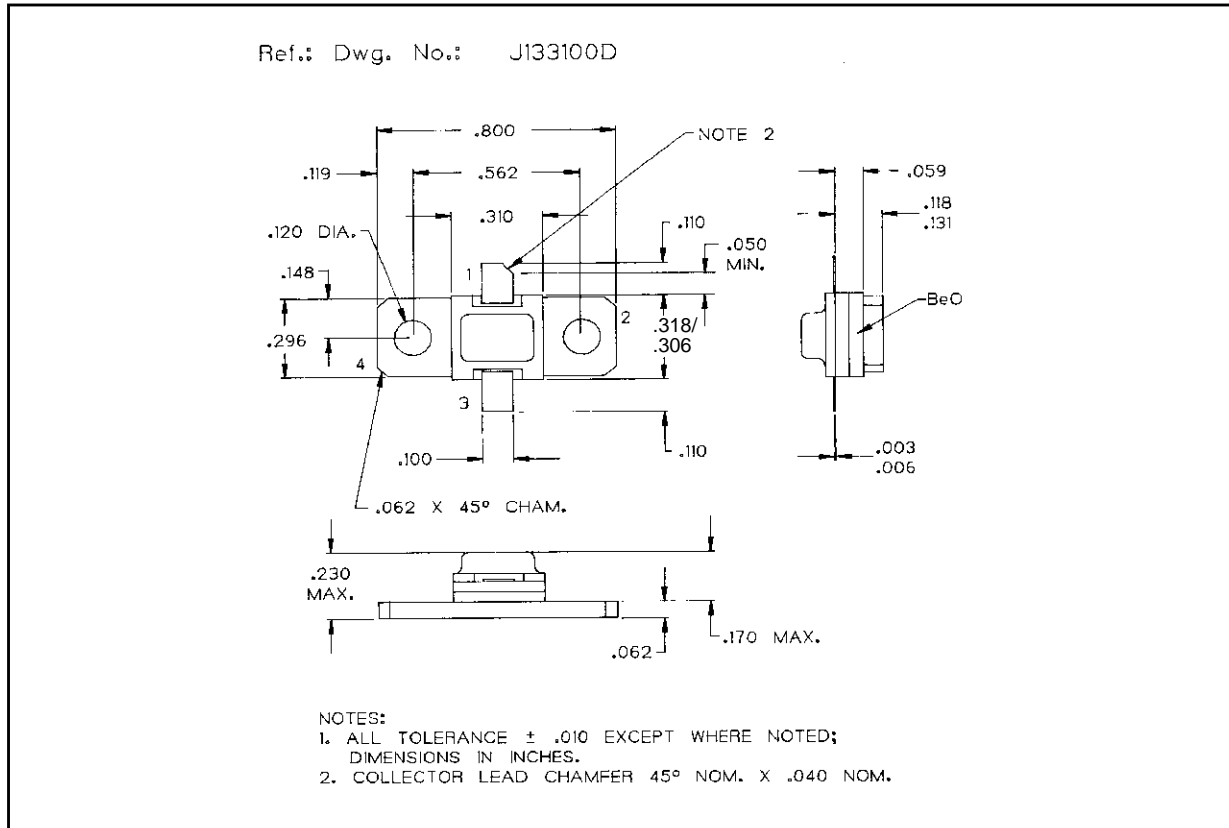
IMPEDANCE DATA



TEST CIRCUIT



PACKAGE MECHANICAL DATA



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