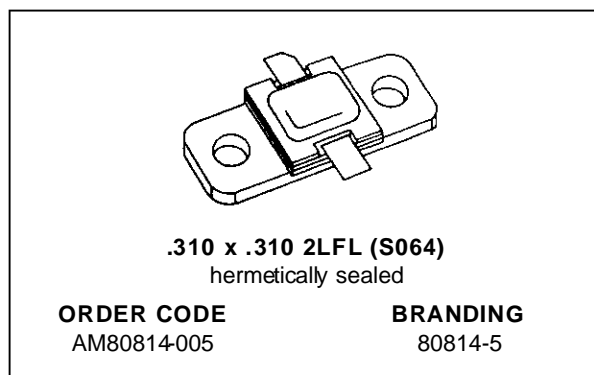


RF & MICROWAVE TRANSISTORS L-BAND RADAR APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- 5:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 5.0 W MIN. WITH 8.5 dB GAIN

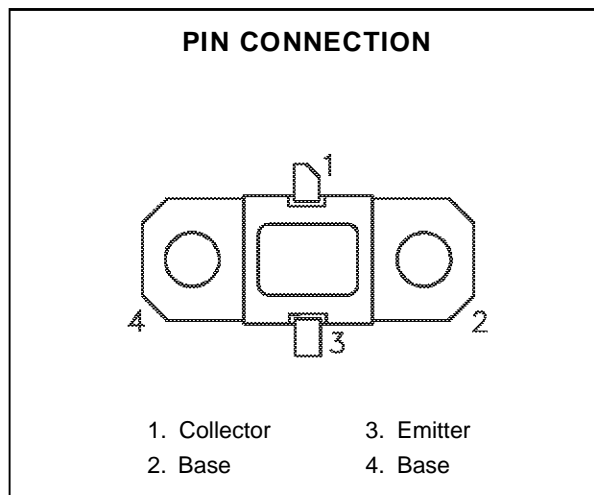


DESCRIPTION

The AM80814-005 device is a high power Class C transistor specifically designed for L-Band radar pulsed 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 thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

The AM80814-005 is supplied in the 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)	23	W
I _C	Device Current*	1.0	A
V _{CC}	Collector-Supply Voltage*	28	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*	6.5	°C/W
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*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}	$I_C = 1mA$	$I_E = 0mA$	48	—	—	V
BV_{EBO}	$I_E = 1mA$	$I_C = 0mA$	3.5	—	—	V
BV_{CER}	$I_C = 5mA$	$R_{BE} = 10\Omega$	48	—	—	V
I_{CES}	$V_{BE} = 0V$	$V_{CE} = 28V$	—	—	500	mA
h_{FE}	$V_{CE} = 5V$	$I_C = 250mA$	30	—	300	—

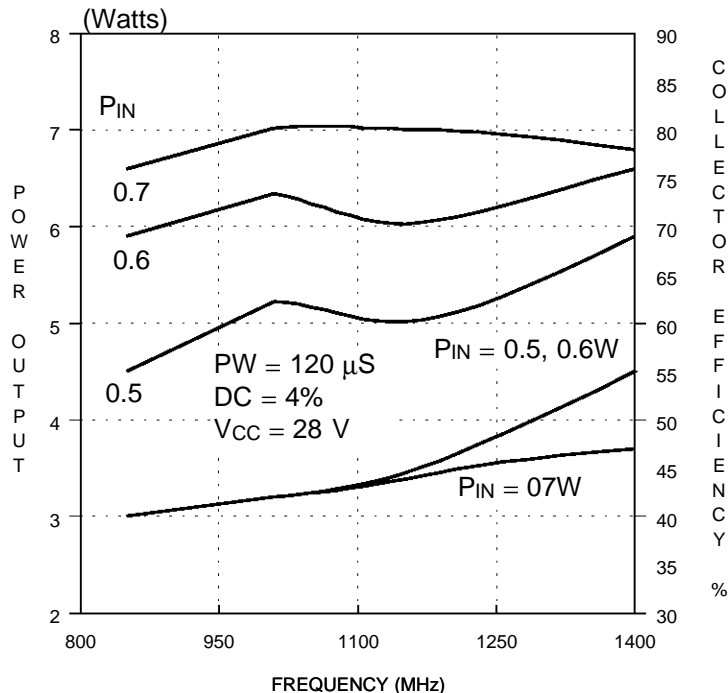
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 850 - 1400MHz$	$P_{IN} = 0.7W$	$V_{CC} = 28V$	5.0	5.7	—	W
η_C	$f = 850 - 1400MHz$	$P_{IN} = 0.7W$	$V_{CC} = 28V$	35	40	—	%
G_P	$f = 850 - 1400MHz$	$P_{IN} = 0.7W$	$V_{CC} = 28V$	8.5	9.0	—	dB

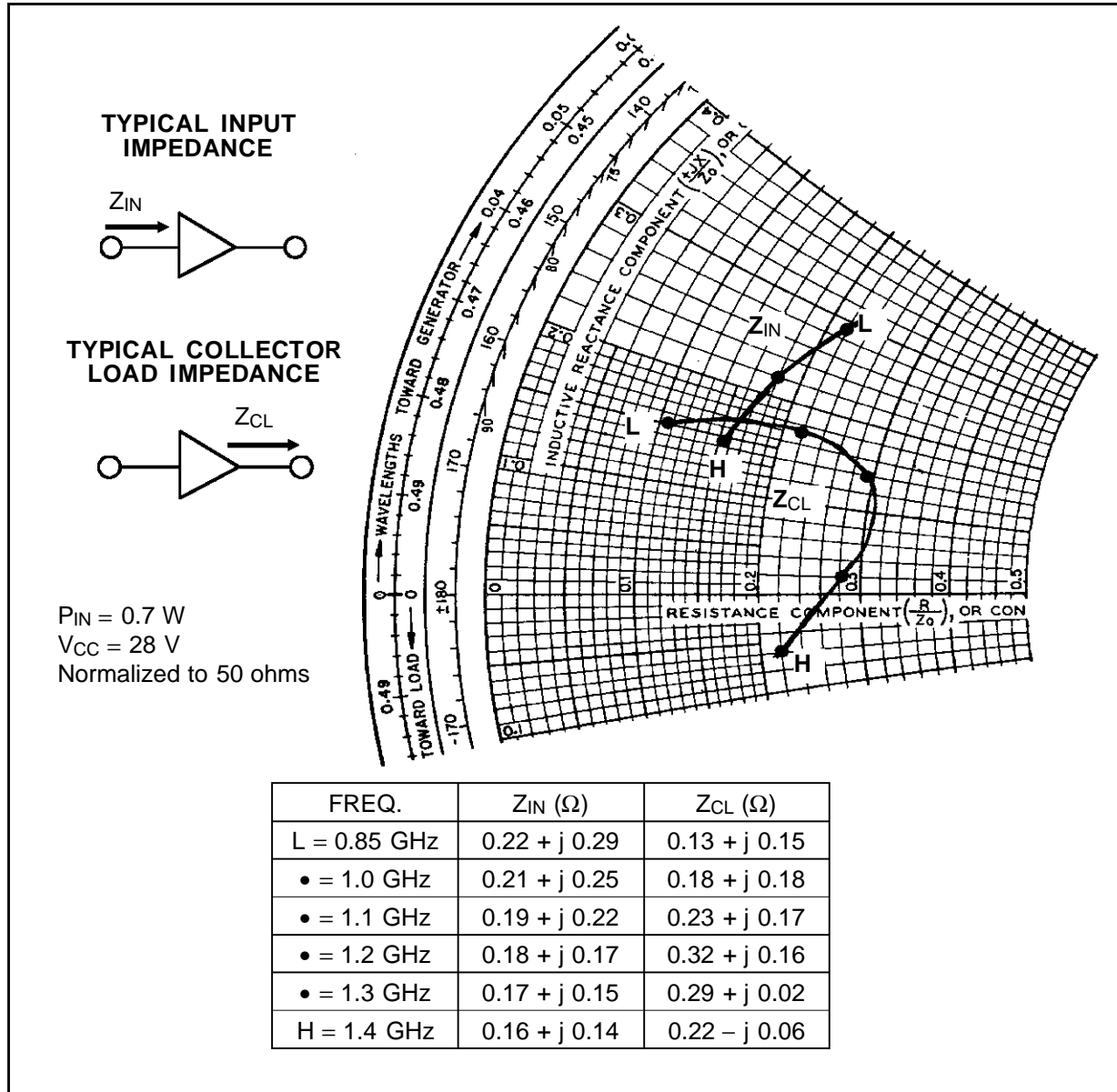
Note: Pulse Width = 120 μ S
Duty Cycle = 4%

TYPICAL PERFORMANCE

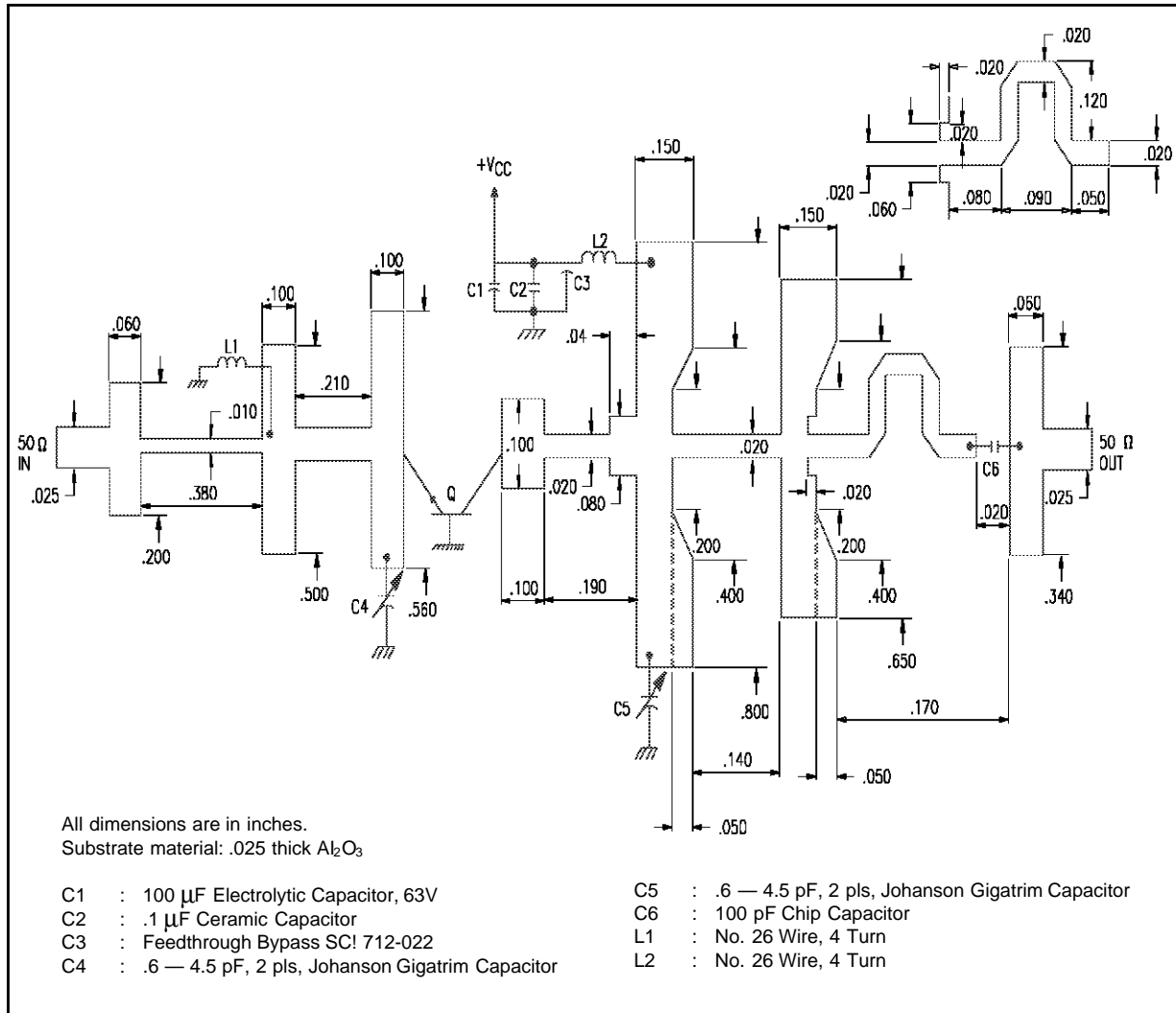
POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY



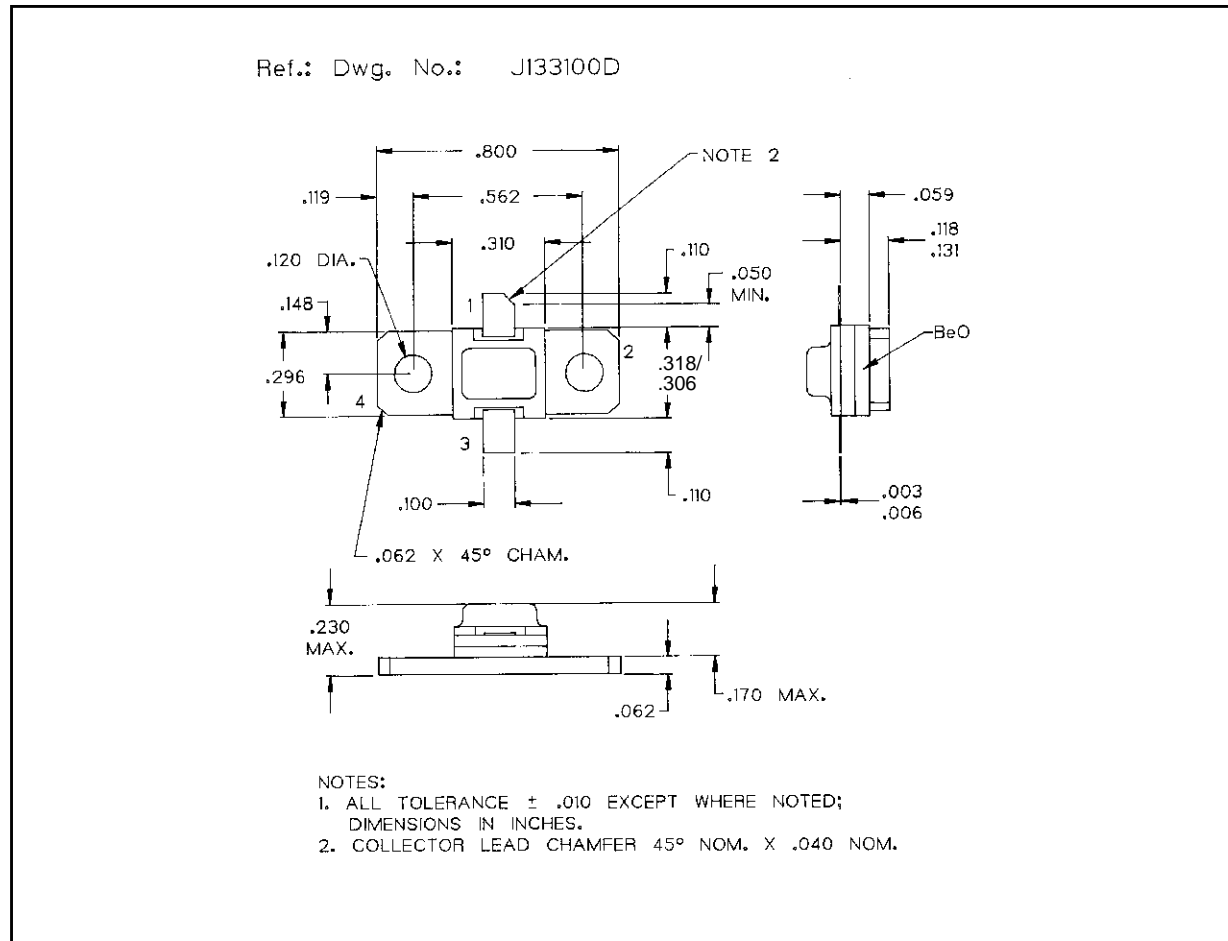
IMPEDANCE DATA



TEST CIRCUIT



PACKAGE MECHANICAL DATA



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