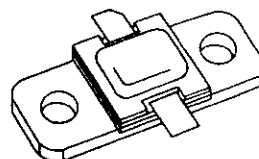


RF & MICROWAVE TRANSISTORS L-BAND RADAR APPLICATIONS

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



.310 x .310 2LFL (S064)
hermetically sealed

ORDER CODE

AM80814-005

BRANDING

80814-5

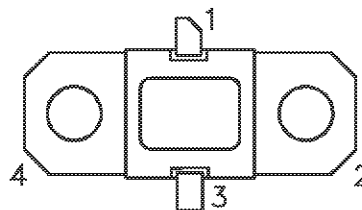
DESCRIPTION

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.

PIN CONNECTION



1. Collector

2. Base

3. Emitter

4. Base

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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 100^{\circ}\text{C}$)	23	W
I_C	Device Current*	1.0	A
V_{CC}	Collector-Supply Voltage*	28	V
T_J	Junction Temperature (Pulsed RF Operation)	250	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +200	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	6.5	$^{\circ}\text{C/W}$
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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}	$I_C = 1\text{mA}$ $I_E = 0\text{mA}$	48	—	—	V
BV_{EBO}	$I_E = 1\text{mA}$ $I_C = 0\text{mA}$	3.5	—	—	V
BV_{CER}	$I_C = 5\text{mA}$ $R_{BE} = 10\Omega$	48	—	—	V
I_{CES}	$V_{BE} = 0\text{V}$ $V_{CE} = 28\text{V}$	—	—	500	mA
h_{FE}	$V_{CE} = 5\text{V}$ $I_C = 250\text{mA}$	30	—	300	—

DYNAMIC

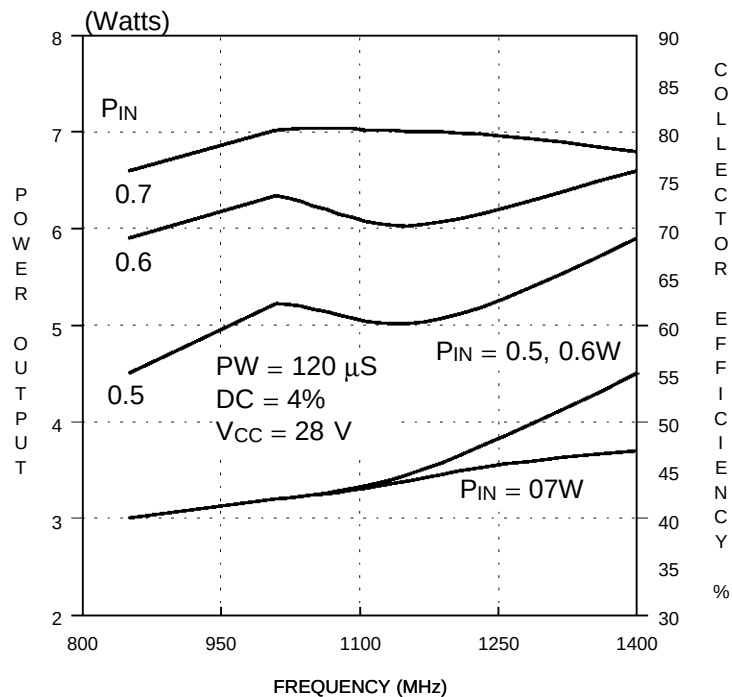
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 850 - 1400\text{MHz}$ $P_{IN} = 0.7\text{W}$ $V_{CC} = 28\text{V}$	5.0	5.7	—	W
η_C	$f = 850 - 1400\text{MHz}$ $P_{IN} = 0.7\text{W}$ $V_{CC} = 28\text{V}$	35	40	—	%
G_P	$f = 850 - 1400\text{MHz}$ $P_{IN} = 0.7\text{W}$ $V_{CC} = 28\text{V}$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

Note: Pulse Width = $120\mu\text{S}$

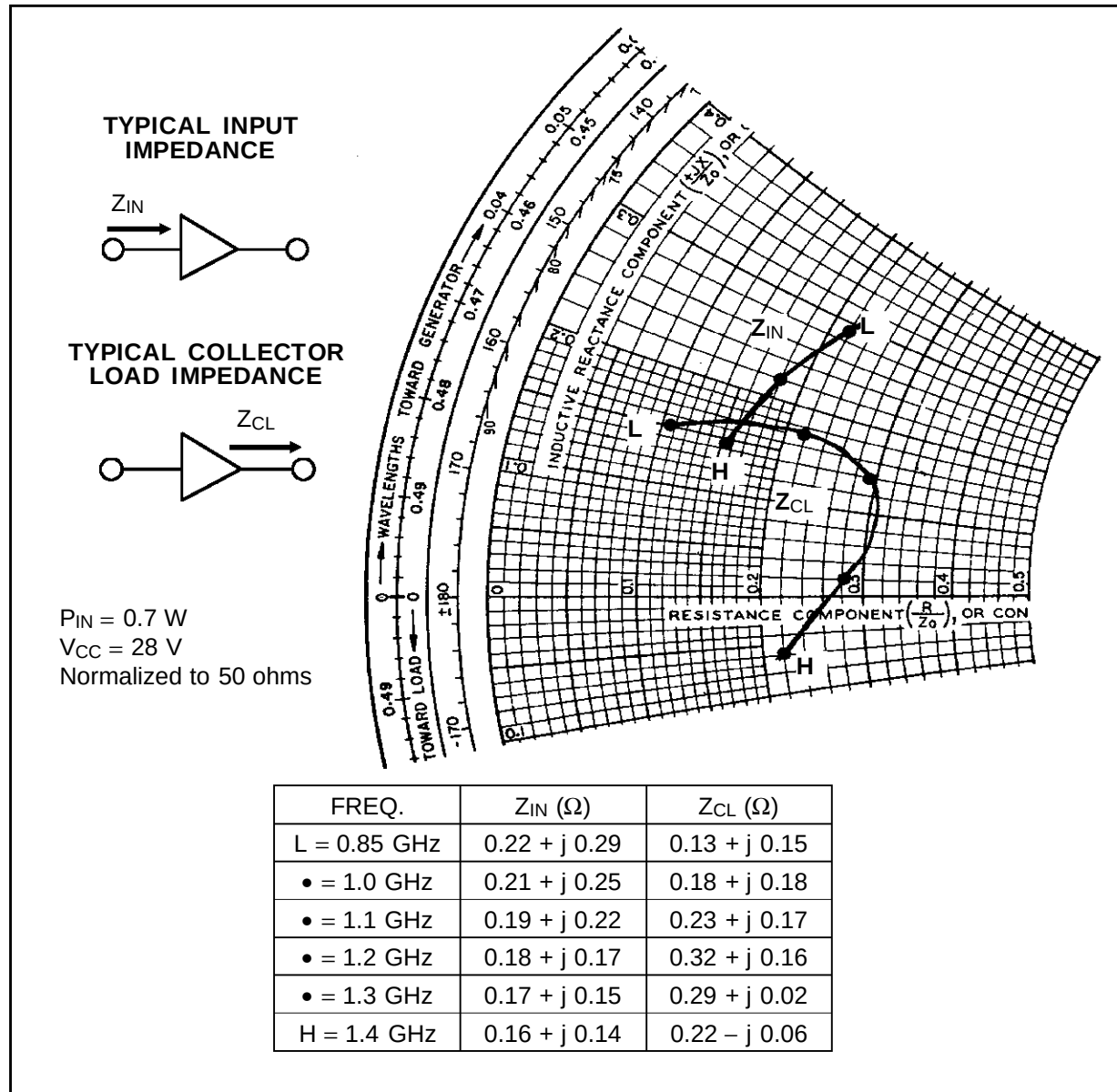
Duty Cycle = 4%

TYPICAL PERFORMANCE

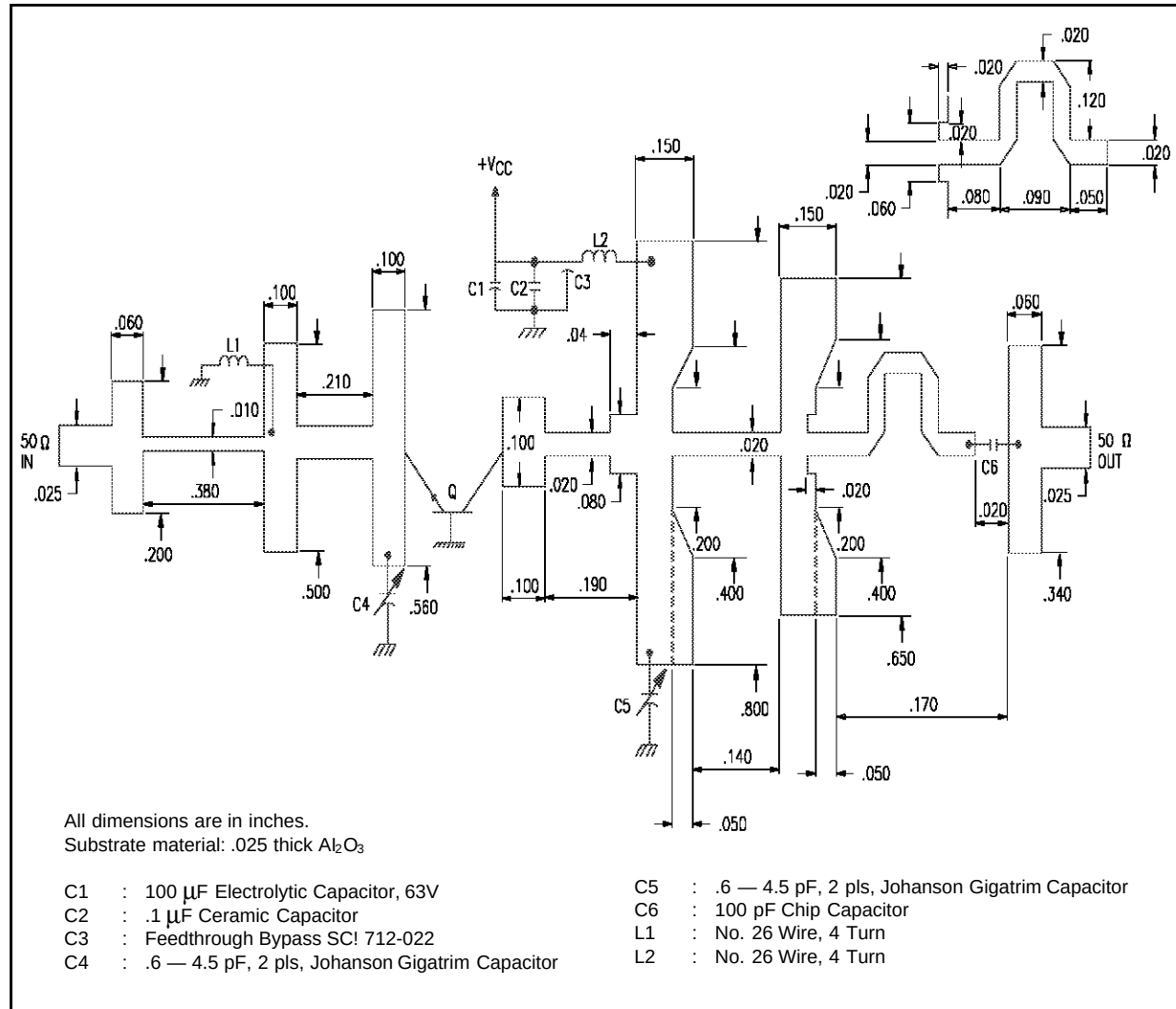
POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY



IMPEDANCE DATA

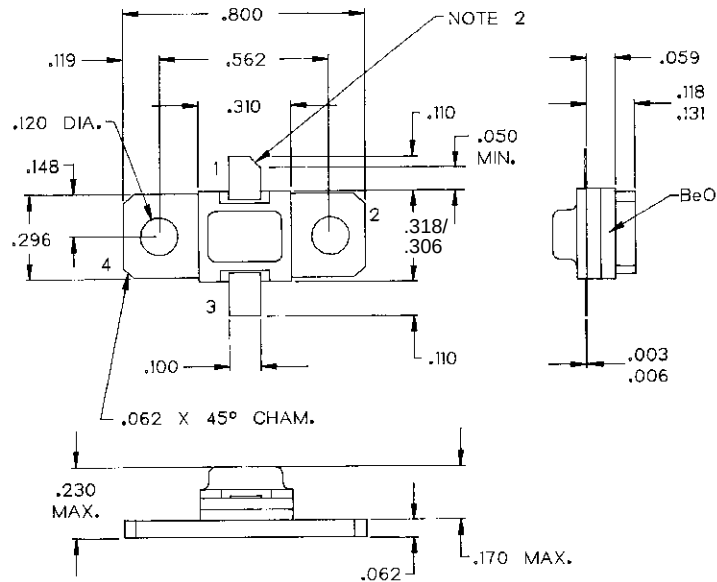


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J133100D



NOTES:

1. ALL TOLERANCE $\pm .010$ EXCEPT WHERE NOTED;
DIMENSIONS IN INCHES.
2. COLLECTOR LEAD CHAMFER 45° NOM. X .040 NOM.

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