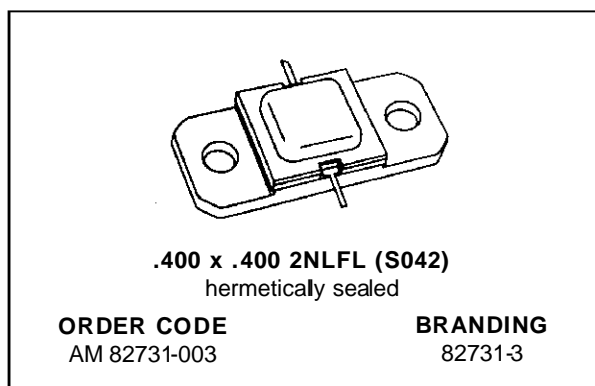


RF & MICROWAVE TRANSISTORS S-BAND RADAR APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- 10:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT IMPEDANCE MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 3.0 W. MIN. WITH 5.7 dB GAIN
- BANDWIDTH = 400 MHz

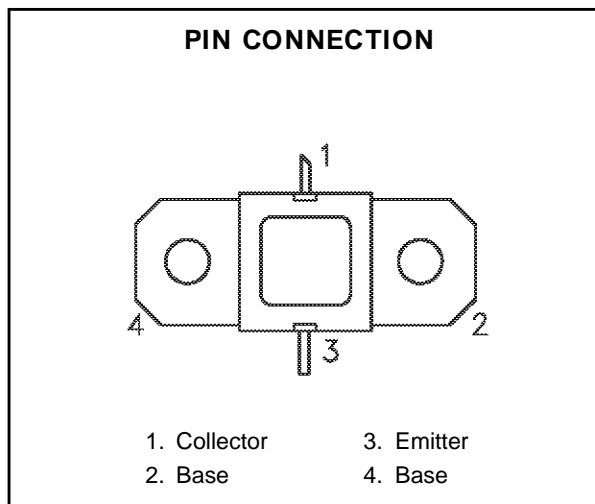


DESCRIPTION

The AM82731-003 device is a medium power silicon bipolar NPN transistor specifically designed for S-Band radar pulsed driver applications.

This device is capable of operation over a wide range of pulse widths, duty cycles, and temperatures and can withstand a 10:1 output VSWR. Low RF thermal resistance, refractory/gold metallization, and automatic wire bonding techniques ensure high reliability and product consistency.

The AM82731-003 is supplied in the hermetic metal/ceramic package with internal input/output impedance matching circuitry, and is intended for military and other high reliability applications.



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*	0.9	A
V _{CC}	Collector-Supply Voltage*	34	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}	$I_C = 2mA$	$I_E = 0mA$	50	—	—	V
BV_{EBO}	$I_E = 1mA$	$I_C = 0mA$	3.5	—	—	V
BV_{CER}	$I_C = 2mA$	$R_{BE} = 10\Omega$	50	—	—	V
I_{CES}	$V_{CE} = 30V$		—	—	2.0	mA
h_{FE}	$V_{CE} = 5V$	$I_C = 200mA$	10	—	—	—

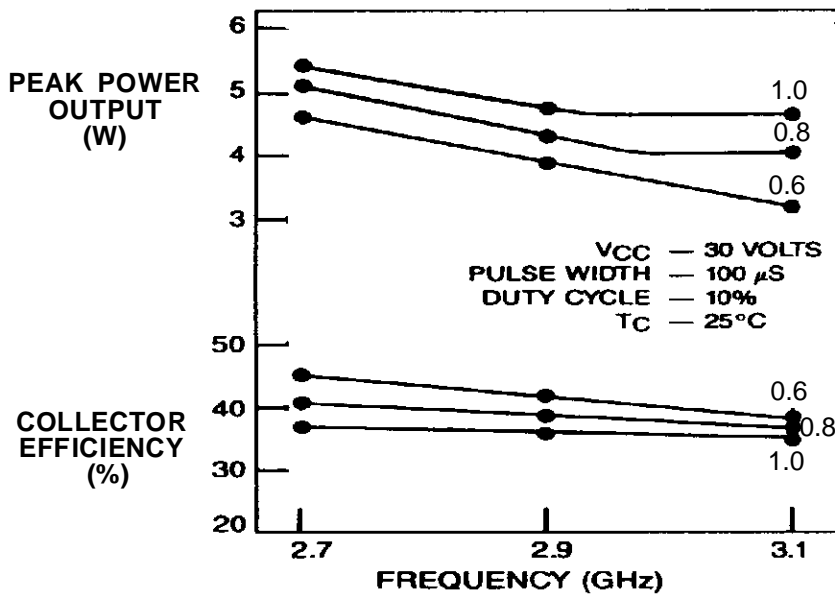
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 2.7 - 3.1GHz$	$P_{IN} = 0.8W$	$V_{CC} = 30V$	3.0	4.0	—	W
η_C	$f = 2.7 - 3.1GHz$	$P_{IN} = 0.8W$	$V_{CC} = 30V$	27	37	—	%
GPB	$f = 2.7 - 3.1GHz$	$P_{IN} = 0.8W$	$V_{CC} = 30V$	5.7	7.0	—	dB

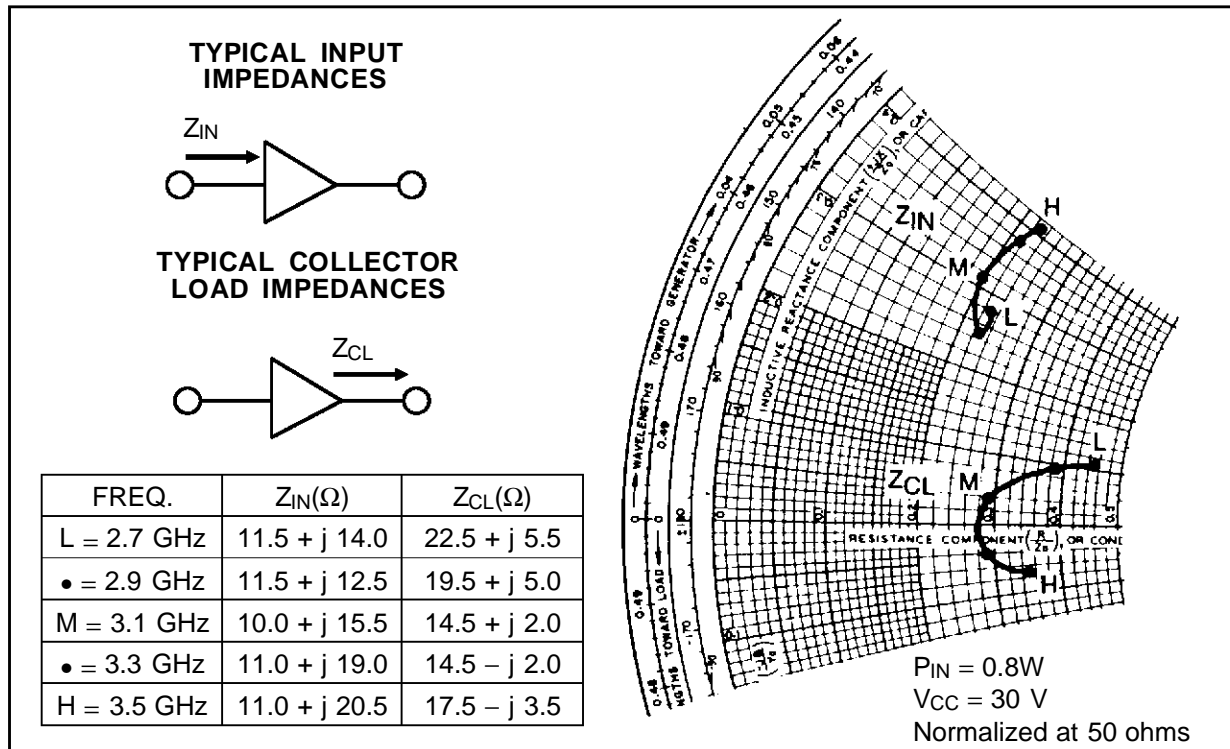
Note: Pulse Width = 100 μ S
 Duty Cycle = 10%

TYPICAL PERFORMANCE

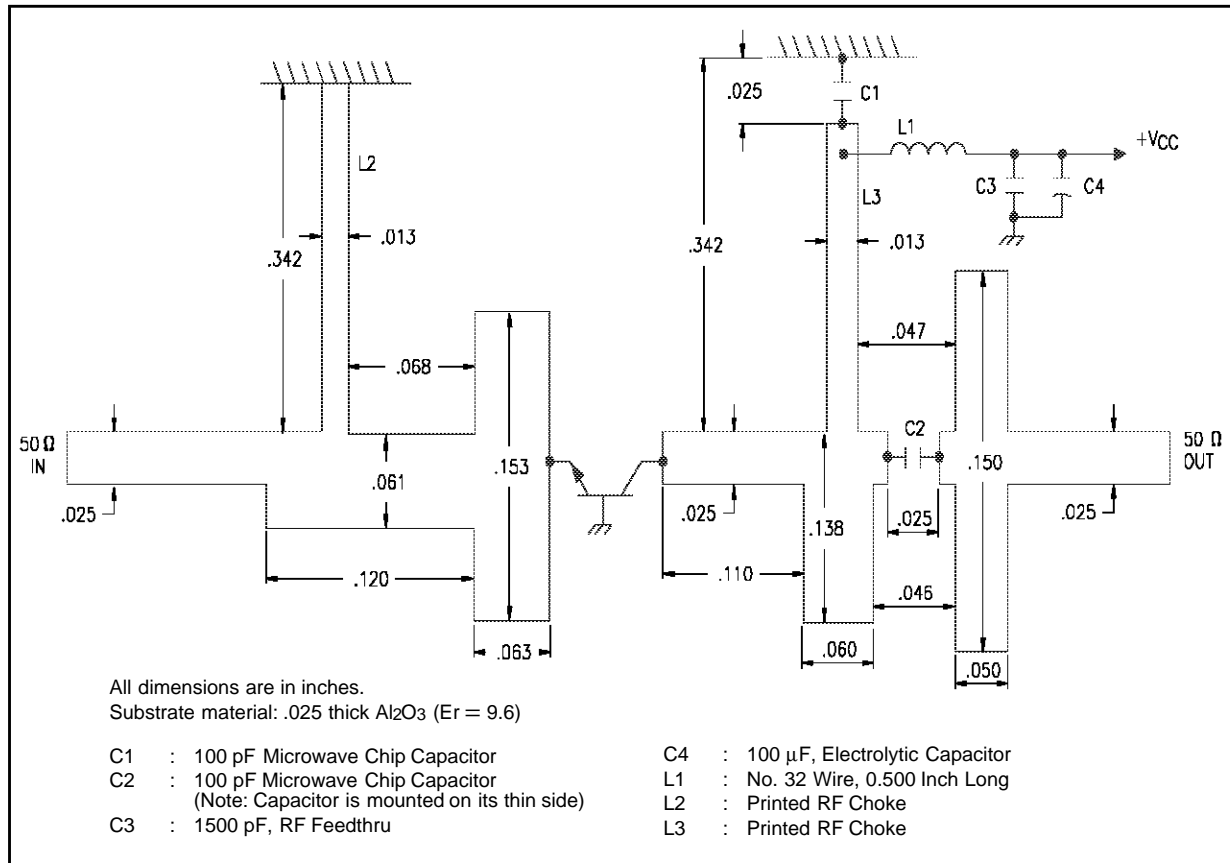
TYPICAL BROADBAND PERFORMANCE



IMPEDANCE DATA

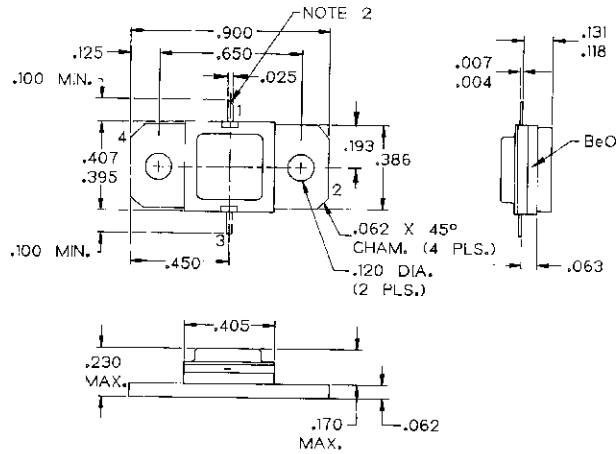


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J113214F



- NOTES:
1. ALL TOLERANCE \pm .010 EXCEPT WHERE NOTED; DIMENSIONS IN INCHES.
 2. COLLECTOR LEAD SLANT CUT.

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