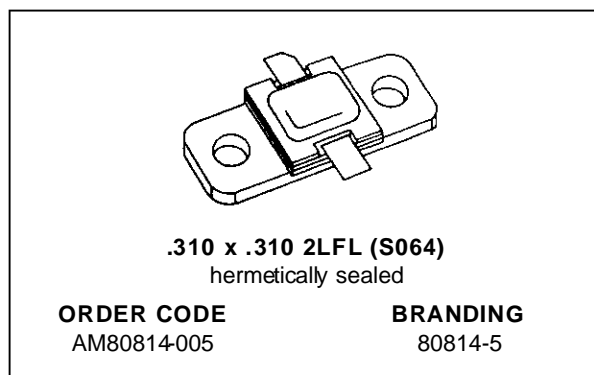


RF & MICROWAVE TRANSISTORS L-BAND RADAR APPLICATIONS

- 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

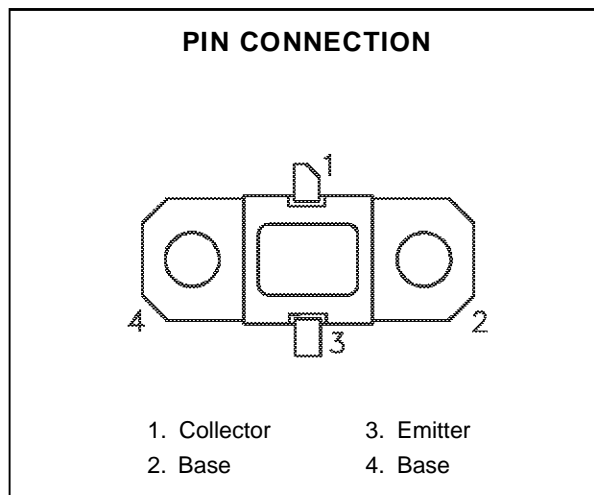


DESCRIPTION

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 |
|----------------------|-----------------------------------|-----|------|

*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 | — |

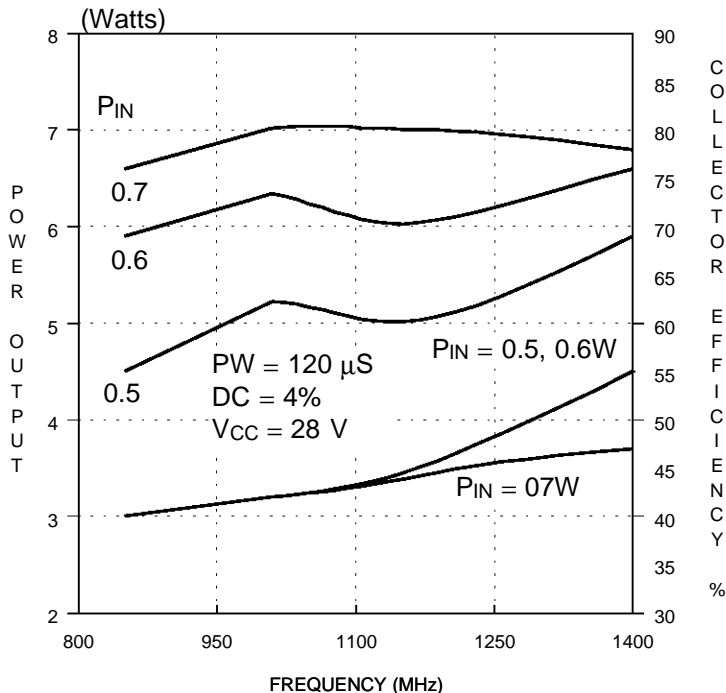
DYNAMIC

| 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 |

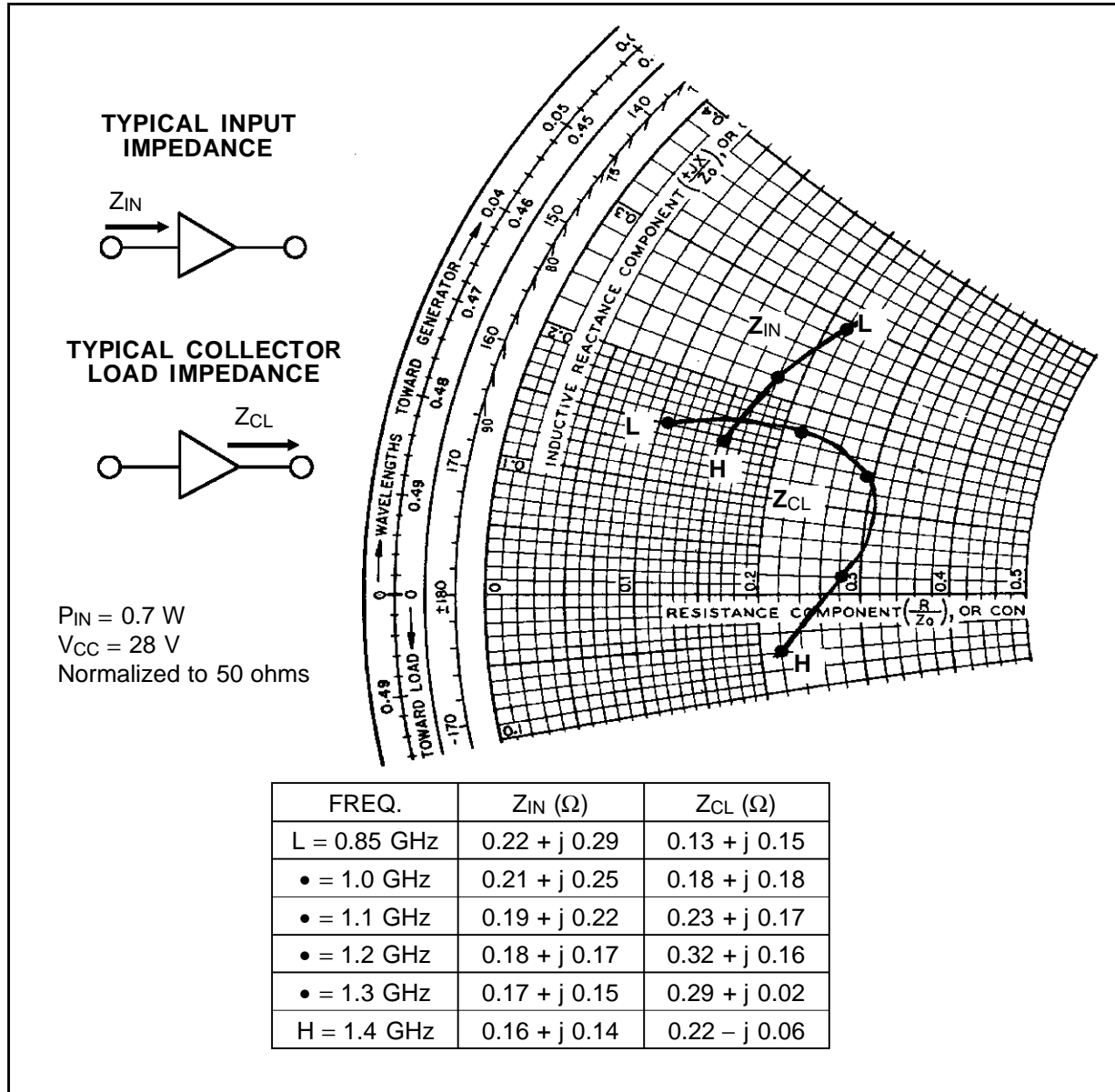
Note: Pulse Width = 120 μ S
 Duty Cycle = 4%

TYPICAL PERFORMANCE

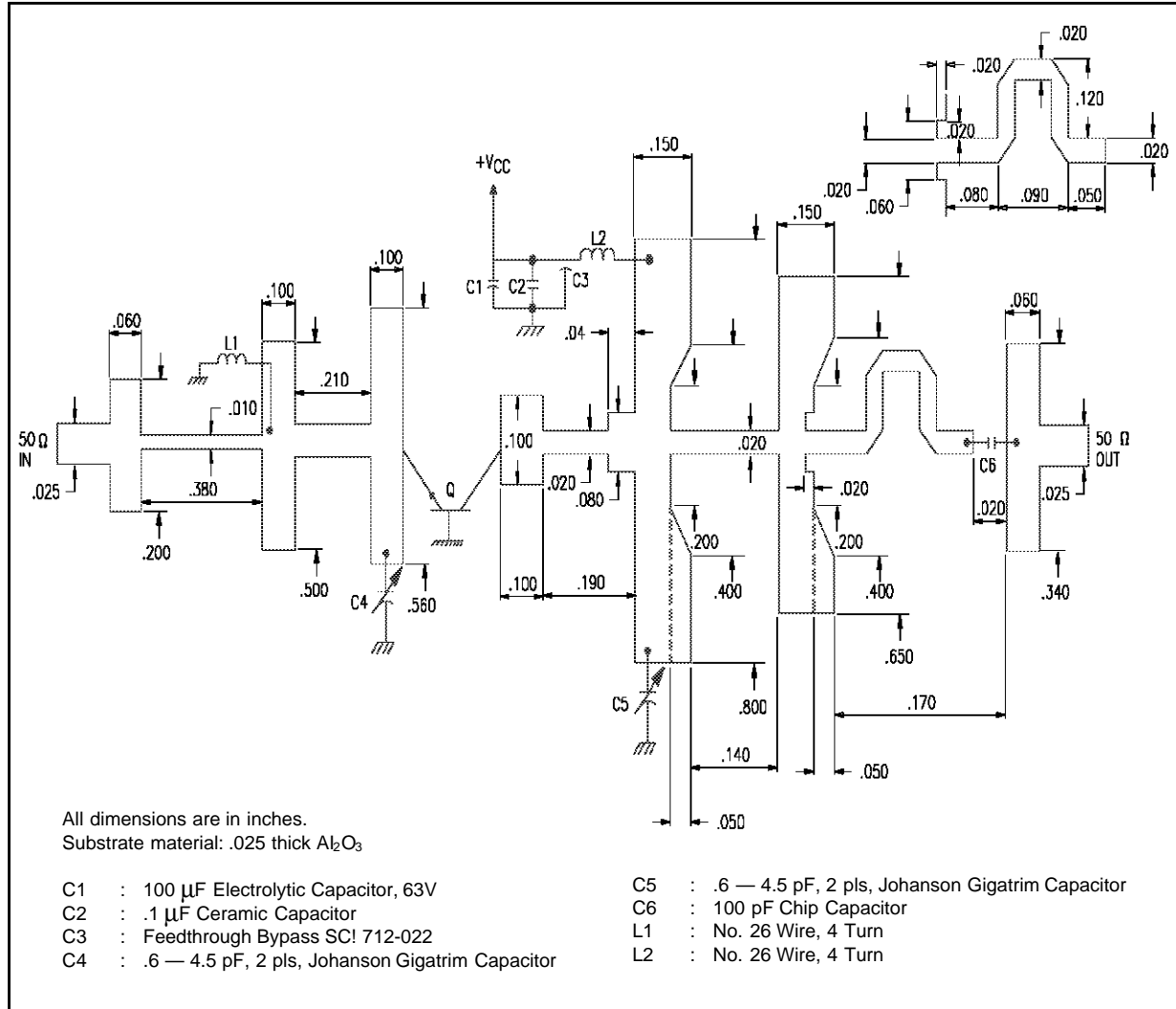
POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY



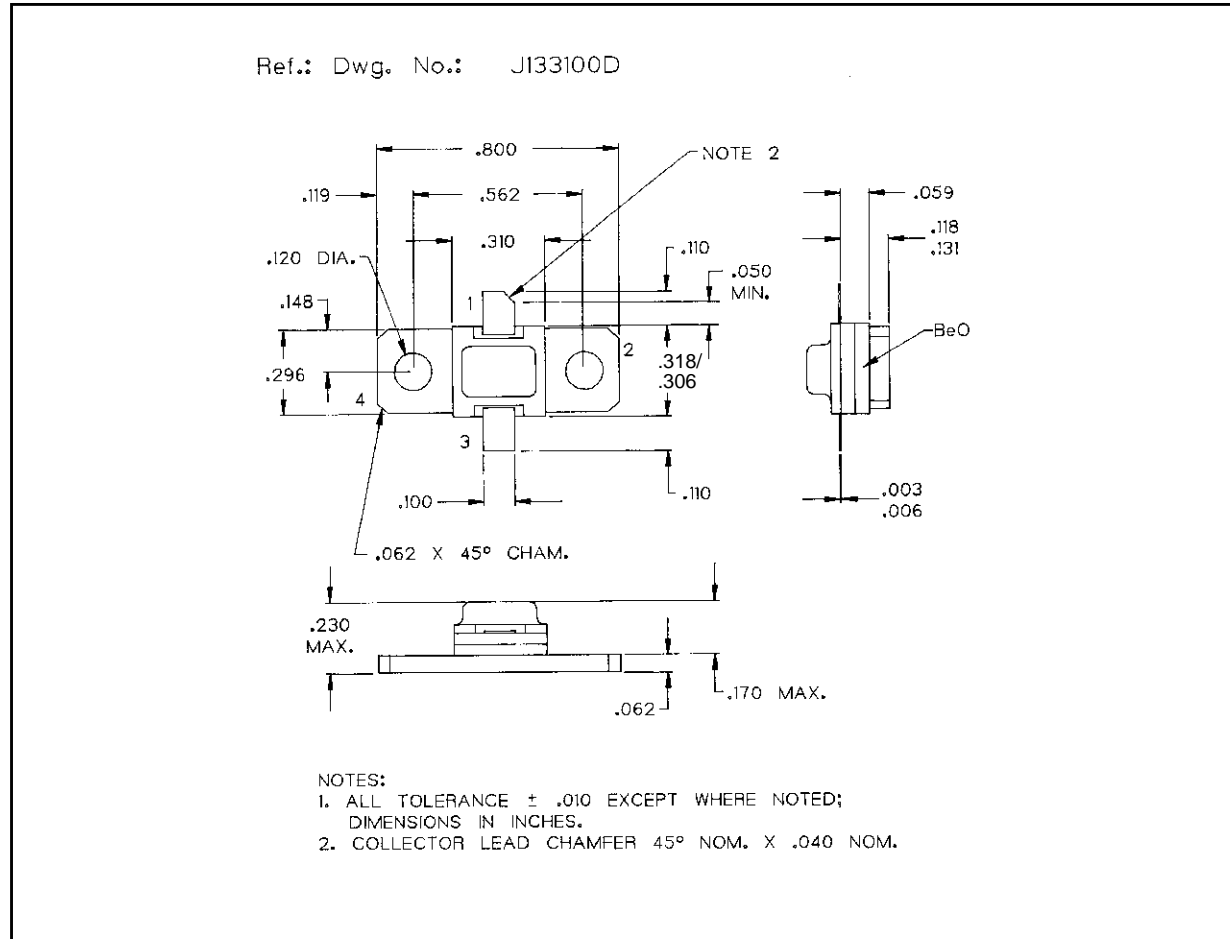
IMPEDANCE DATA



TEST CIRCUIT



PACKAGE MECHANICAL DATA



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