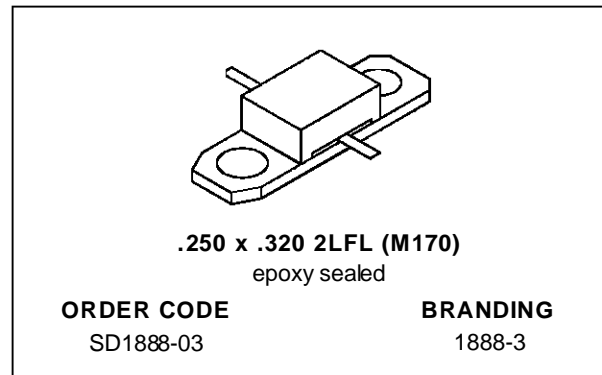
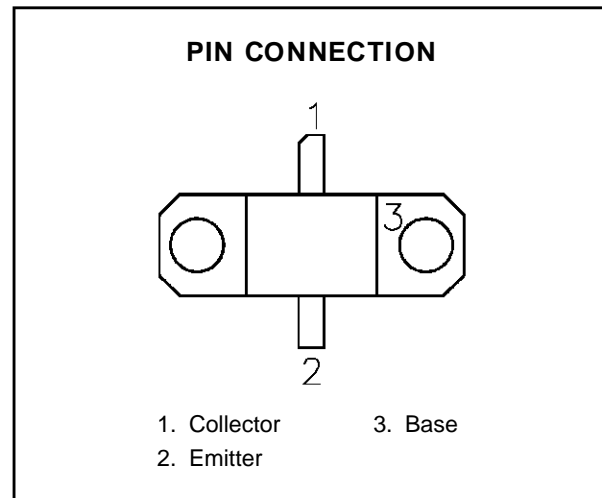


**RF & MICROWAVE TRANSISTORS  
1.6 GHz SATCOM APPLICATIONS**

- 1.65 GHz
- 28 VOLTS
- EFFICIENCY 50% MIN.
- CLASS C OPERATION
- COMMON BASE
- INPUT/OUTPUT MATCHING
- P<sub>OUT</sub> = 24 W MIN. WITH 9.0 dB GAIN


**DESCRIPTION**

The SD1888-03 is a 28 V Class C silicon NPN transistor designed for INMARSAT and other 1.65 GHz SATCOM applications. A gold metallized emitter-ballasted die geometry is employed providing high gain and efficiency while ensuring long term reliability and ruggedness under severe operating conditions. SD1888-03 is packaged in a cost-effective epoxy sealed housing


**ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)**

| Symbol            | Parameter                 | Value        | Unit |
|-------------------|---------------------------|--------------|------|
| V <sub>CBO</sub>  | Collector-Base Voltage    | 45           | V    |
| V <sub>CEO</sub>  | Collector-Emitter Voltage | 12           | V    |
| V <sub>EBO</sub>  | Emitter-Base Voltage      | 3.0          | V    |
| I <sub>C</sub>    | Device Current            | 2.6          | A    |
| P <sub>DISS</sub> | Power Dissipation         | 50           | W    |
| T <sub>J</sub>    | Junction Temperature      | +200         | °C   |
| T <sub>STG</sub>  | Storage Temperature       | - 65 to +150 | °C   |

**THERMAL DATA**

|                      |                                  |     |      |
|----------------------|----------------------------------|-----|------|
| R <sub>TH(j-c)</sub> | Junction-Case Thermal Resistance | 3.5 | °C/W |
|----------------------|----------------------------------|-----|------|

## SD1888-03

### ELECTRICAL SPECIFICATIONS ( $T_{\text{case}} = 25^{\circ}\text{C}$ )

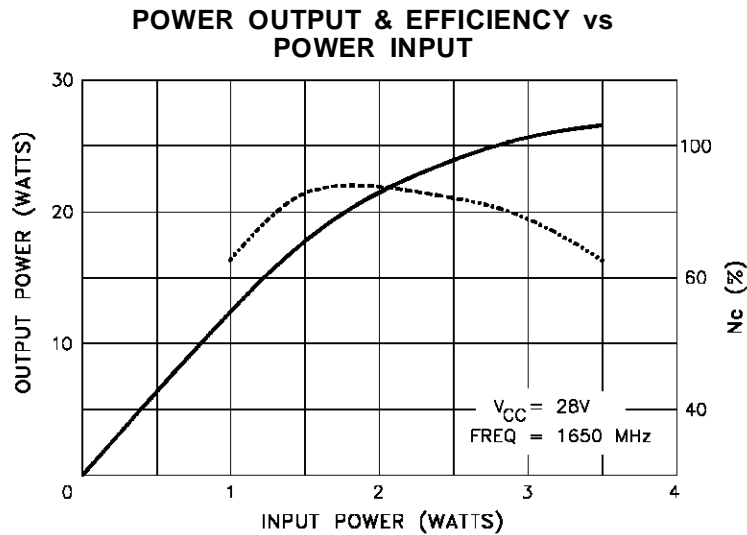
#### STATIC

| Symbol     | Test Conditions        |                       | Value |      |      | Unit |
|------------|------------------------|-----------------------|-------|------|------|------|
|            |                        |                       | Min.  | Typ. | Max. |      |
| $BV_{CBO}$ | $I_C = 6 \text{ mA}$   | $I_E = 0 \text{ mA}$  | 45    | —    | —    | V    |
| $BV_{CEO}$ | $I_C = 6 \text{ mA}$   | $I_B = 0 \text{ mA}$  | 12    | —    | —    | V    |
| $BV_{EBO}$ | $I_E = 6 \text{ mA}$   | $I_C = 0 \text{ mA}$  | 3.0   | —    | —    | V    |
| $h_{FE}$   | $V_{CE} = 5 \text{ V}$ | $I_C = 1.2 \text{ A}$ | 15    | —    | 150  | —    |

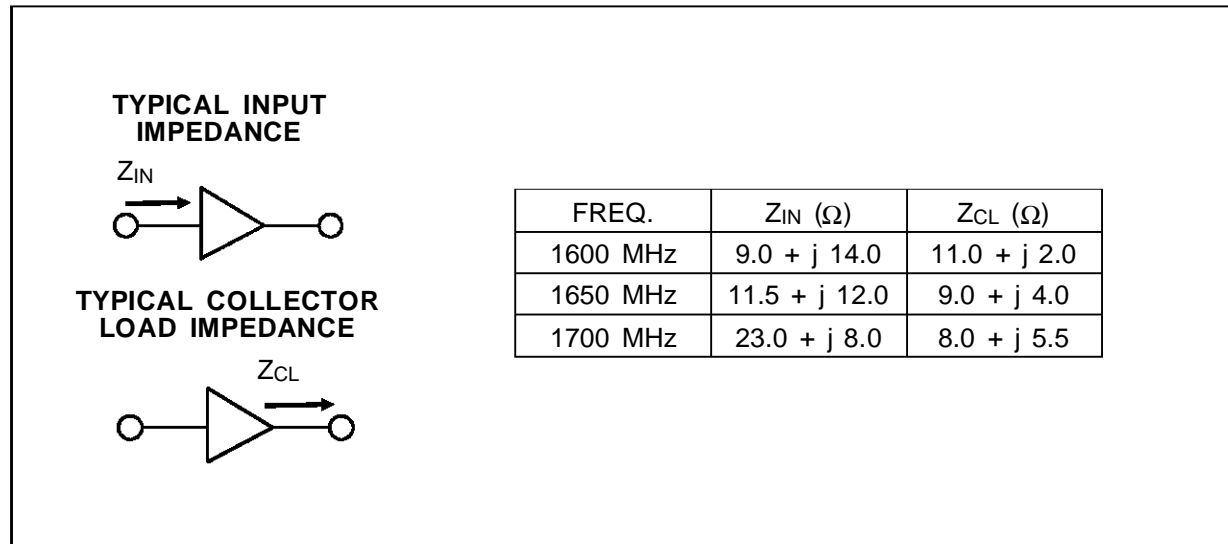
#### DYNAMIC

| Symbol    | Test Conditions        |                          |                         | Value |      |      | Unit |
|-----------|------------------------|--------------------------|-------------------------|-------|------|------|------|
|           |                        |                          |                         | Min.  | Typ. | Max. |      |
| $P_{OUT}$ | $f = 1.65 \text{ GHz}$ | $P_{IN} = 3.0 \text{ W}$ | $V_{CE} = 28 \text{ V}$ | 24    | —    | —    | W    |
| $G_P$     | $f = 1.65 \text{ GHz}$ | $P_{IN} = 3.0 \text{ W}$ | $V_{CE} = 28 \text{ V}$ | 9.0   | —    | —    | dB   |
| $\eta_c$  | $f = 1.65 \text{ GHz}$ | $P_{IN} = 3.0 \text{ W}$ | $V_{CE} = 28 \text{ V}$ | 50    | —    | —    | %    |

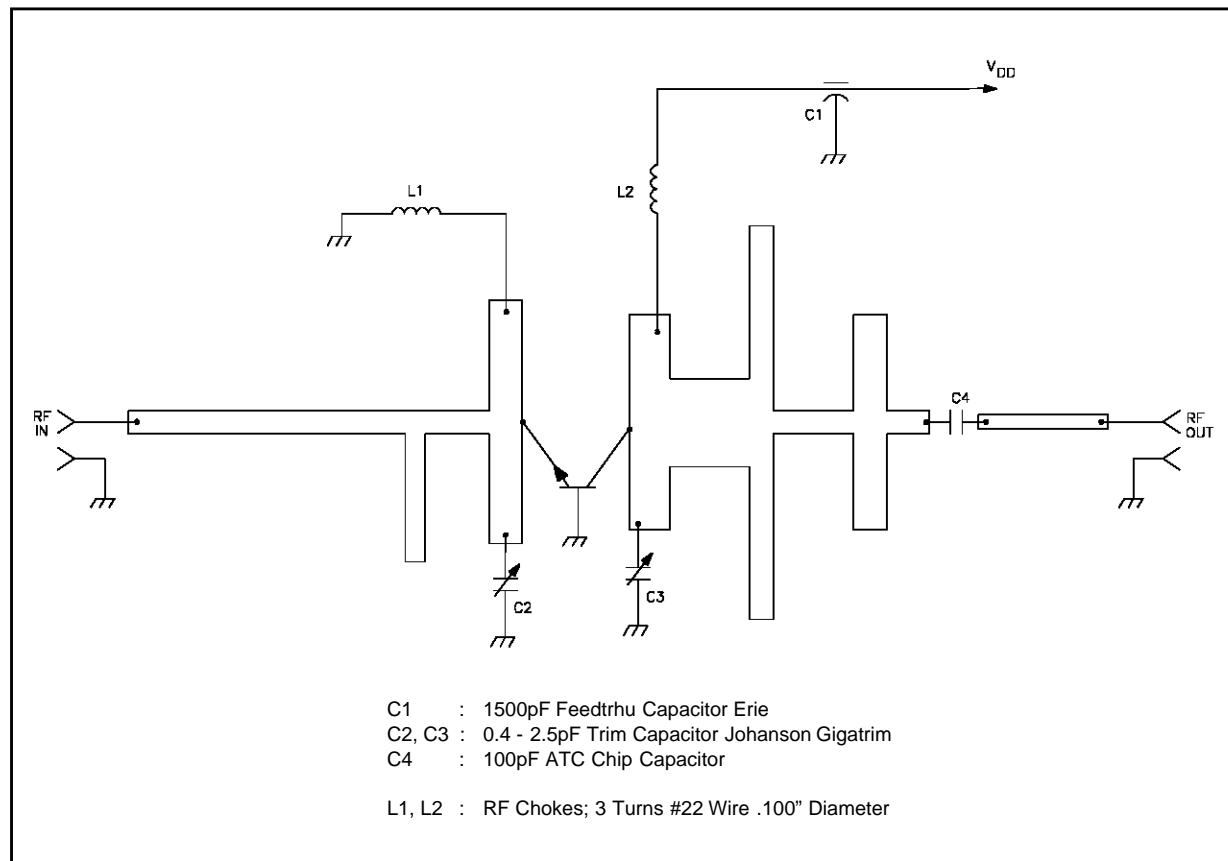
#### TYPICAL PERFORMANCE



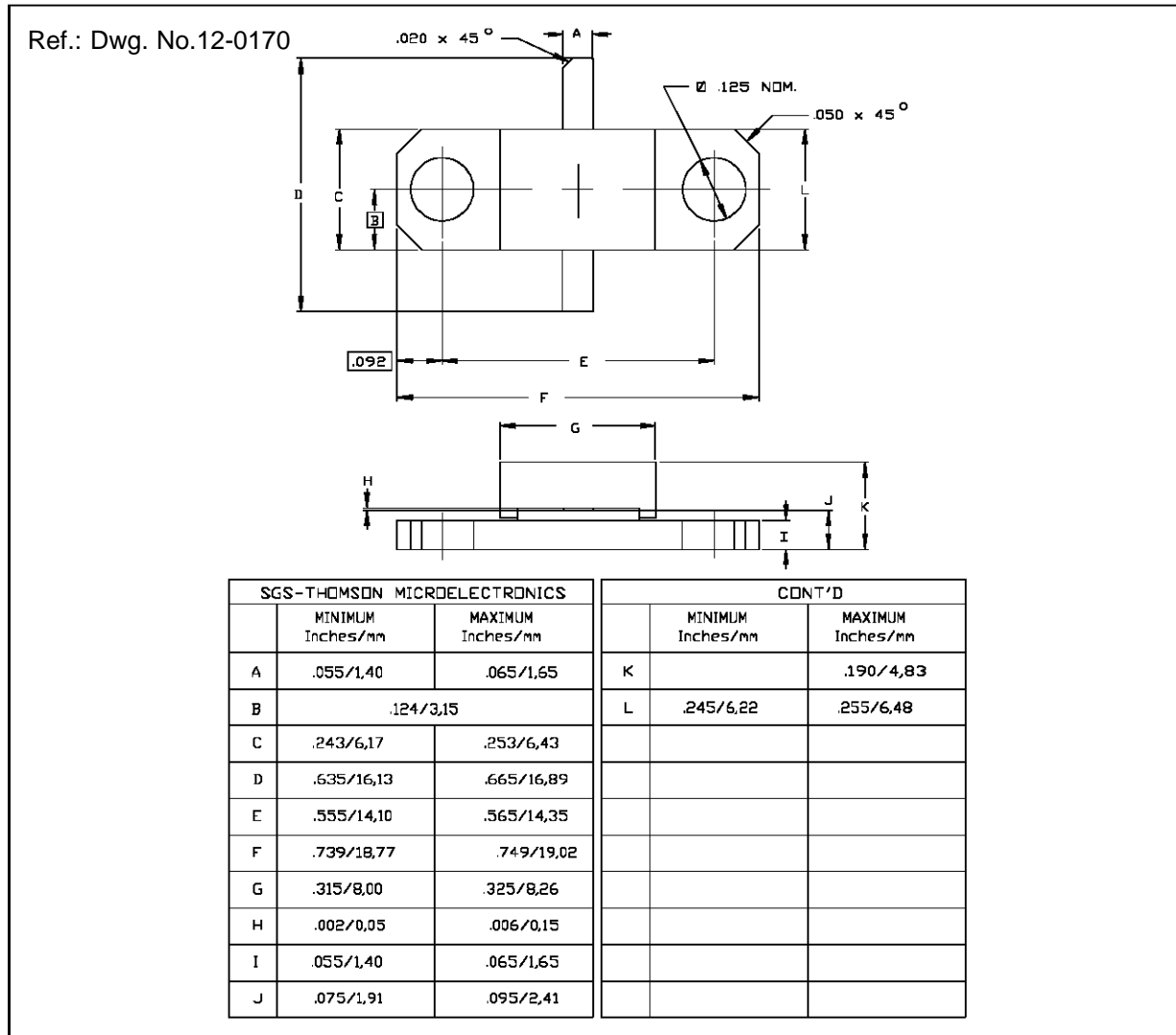
## IMPEDANCE DATA



## TEST CIRCUIT



PACKAGE MECHANICAL DATA



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