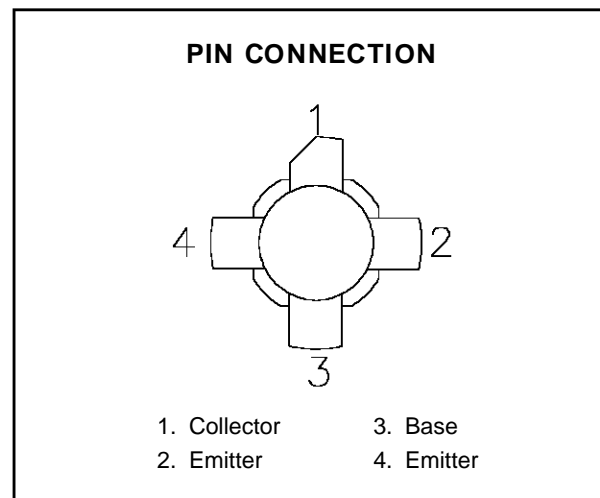
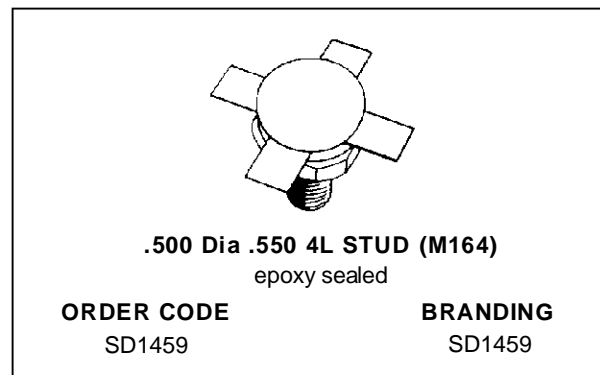


**RF & MICROWAVE TRANSISTORS  
TV/LINEAR APPLICATIONS**

- 170 - 230 MHz
- 28 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- HIGH SATURATED POWER CAPABILITY
- DIFFUSED EMITTER BALLAST RESISTORS
- P<sub>OUT</sub> = 20 W MIN. WITH 7.5 dB GAIN


**DESCRIPTION**

The SD1459 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class A operation in VHF and Band III television transmitters and transposers.

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

| Symbol            | Parameter                 | Value        | Unit |
|-------------------|---------------------------|--------------|------|
| V <sub>CB0</sub>  | Collector-Base Voltage    | 60           | V    |
| V <sub>CEO</sub>  | Collector-Emitter Voltage | 30           | V    |
| V <sub>EBO</sub>  | Emitter-Base Voltage      | 4.0          | V    |
| I <sub>c</sub>    | Device Current            | 16           | A    |
| P <sub>DISS</sub> | Power Dissipation         | 150          | 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 | 1.2 | °C/W |
|----------------------|----------------------------------|-----|------|

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

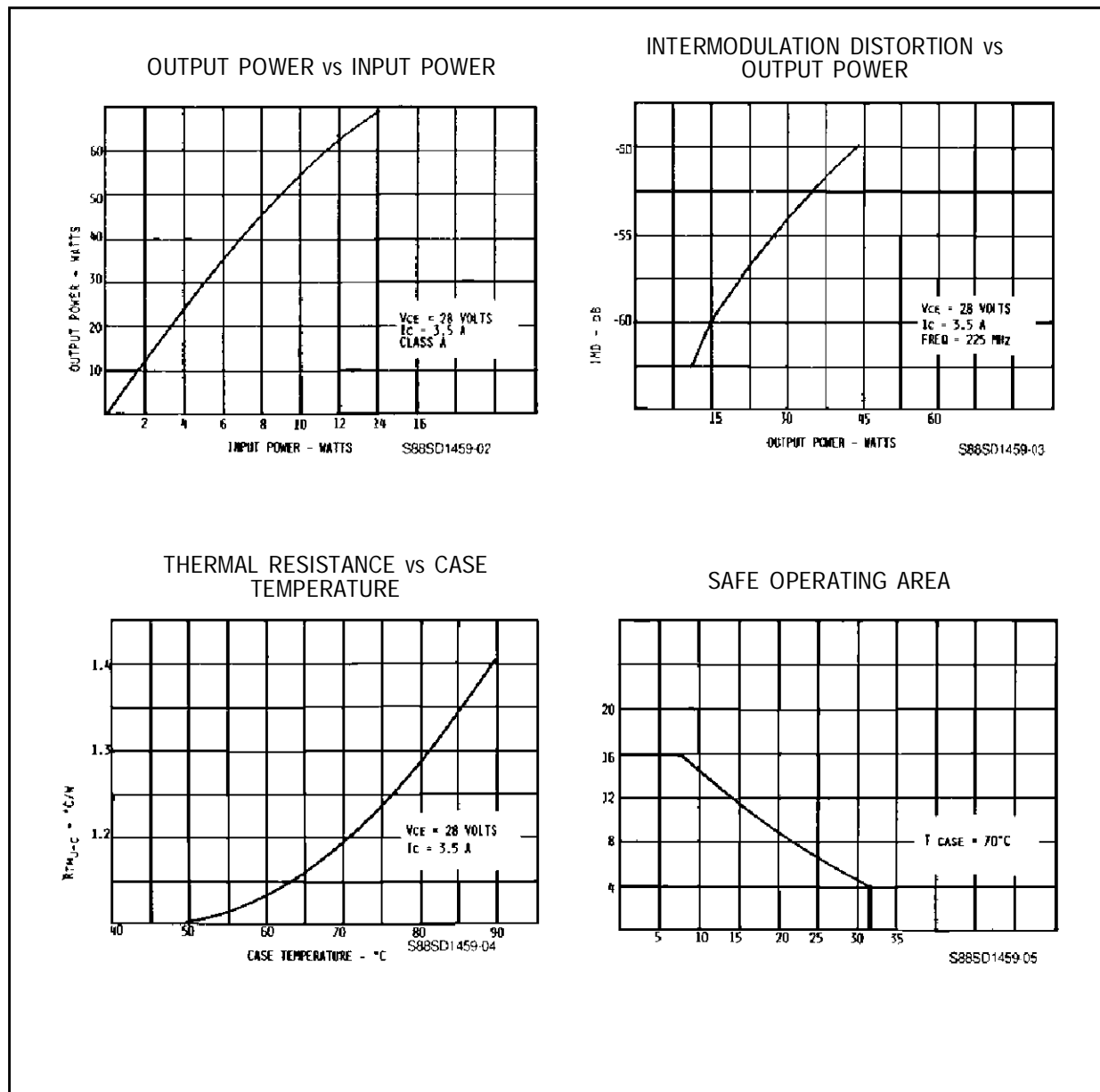
## STATIC

| Symbol            | Test Conditions                 |                               | Value |      |      | Unit |
|-------------------|---------------------------------|-------------------------------|-------|------|------|------|
|                   |                                 |                               | Min.  | Typ. | Max. |      |
| $BV_{\text{CBO}}$ | $I_{\text{C}} = 100 \text{ mA}$ | $I_{\text{E}} = 0 \text{ mA}$ | 60    | —    | —    | V    |
| $BV_{\text{CEO}}$ | $I_{\text{C}} = 100 \text{ mA}$ | $I_{\text{B}} = 0 \text{ mA}$ | 30    | —    | —    | V    |
| $BV_{\text{CER}}$ | $I_{\text{C}} = 100 \text{ mA}$ | $R_{\text{BE}} = 10\Omega$    | 60    | —    | —    | V    |
| $BV_{\text{EBO}}$ | $I_{\text{E}} = 20 \text{ mA}$  | $I_{\text{C}} = 0 \text{ mA}$ | 4.0   | —    | —    | V    |
| $h_{\text{FE}}$   | $V_{\text{CE}} = 5 \text{ V}$   | $I_{\text{C}} = 1 \text{ A}$  | 10    | —    | 120  | —    |

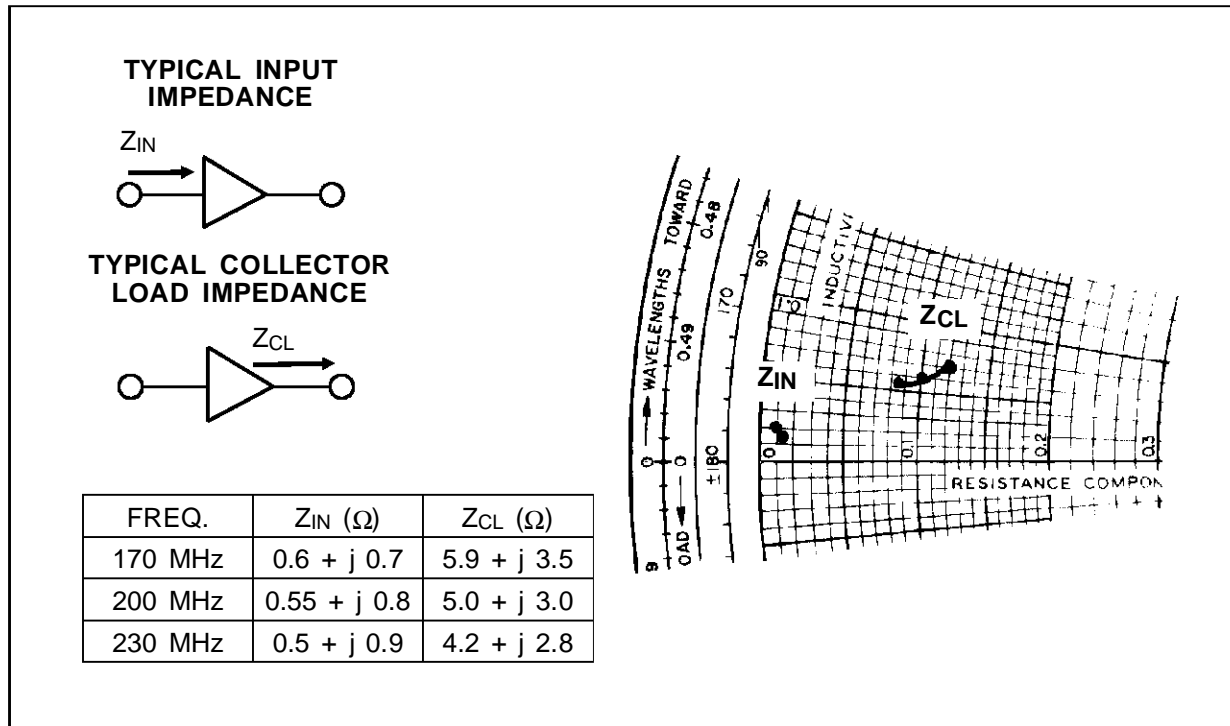
## DYNAMIC

| Symbol           | Test Conditions       |                                |                                | Value      |      |      | Unit |
|------------------|-----------------------|--------------------------------|--------------------------------|------------|------|------|------|
|                  |                       |                                |                                | Min.       | Typ. | Max. |      |
| $P_{\text{OUT}}$ | $f = 225 \text{ MHz}$ | $V_{\text{CE}} = 28 \text{ V}$ | $I_{\text{C}} = 3.5 \text{ A}$ | 20         | —    | —    | W    |
| $G_{\text{P}}$   | $f = 225 \text{ MHz}$ | $V_{\text{CE}} = 28 \text{ V}$ | $I_{\text{C}} = 3.5 \text{ A}$ | 7.5        | —    | 8.0  | dB   |
| $C_{\text{OB}}$  | $f = 1 \text{ MHz}$   | $V_{\text{CB}} = 30 \text{ V}$ |                                | —          | —    | 150  | pf   |
| Load Mismatch    | $f = 225 \text{ MHz}$ | $V_{\text{CE}} = 28 \text{ V}$ | $I_{\text{C}} = 3.5 \text{ A}$ | $\infty:1$ | —    | —    | VSWR |

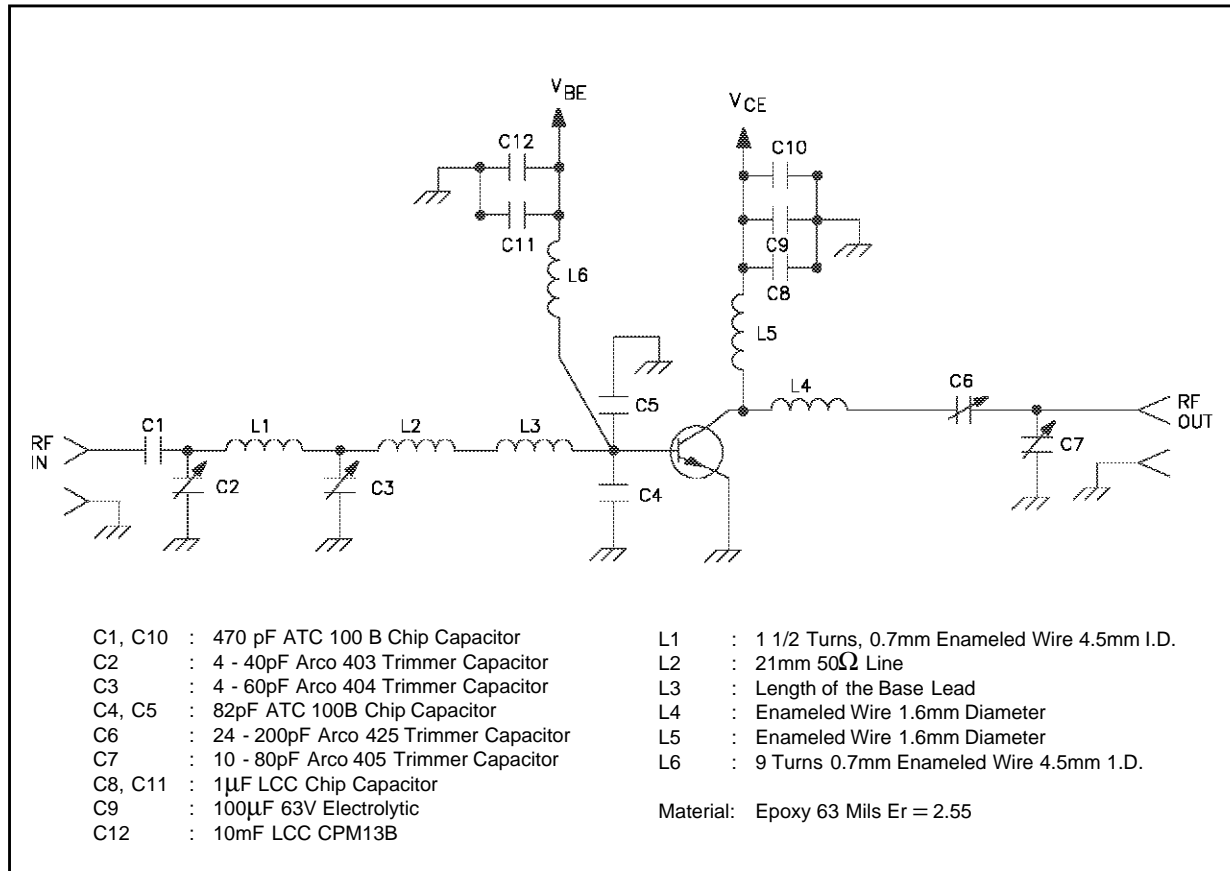
## TYPICAL PERFORMANCE



IMPEDANCE DATA

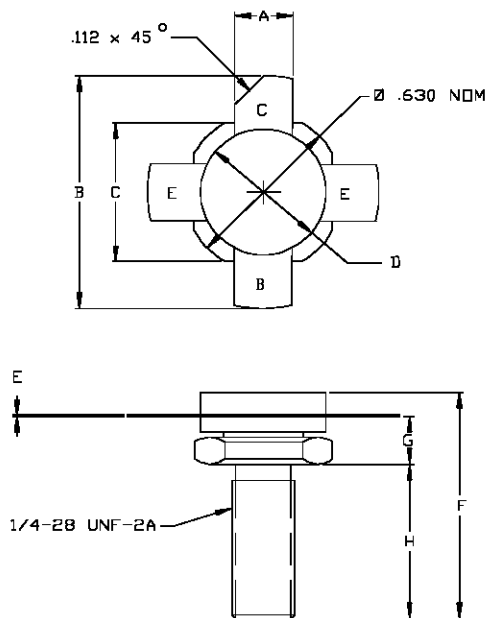


TEST CIRCUIT FOR 225 MHz



## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0164



| SGS-THOMSON MICROELECTRONICS |                      |                      |
|------------------------------|----------------------|----------------------|
|                              | MINIMUM<br>Inches/mm | MAXIMUM<br>Inches/mm |
| A                            | .220/5,59            | .230/5,84            |
| B                            |                      | 1.050/26,67          |
| C                            | .545/13,84           | .555/14,10           |
| D                            | .495/12,57           | .505/12,83           |
| E                            | .003/0,08            | .007/0,18            |
| F                            |                      | .830/21,08           |
| G                            | .185/4,70            | .198/5,03            |
| H                            | .497/12,62           | .530/13,46           |
|                              |                      |                      |
|                              |                      |                      |

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