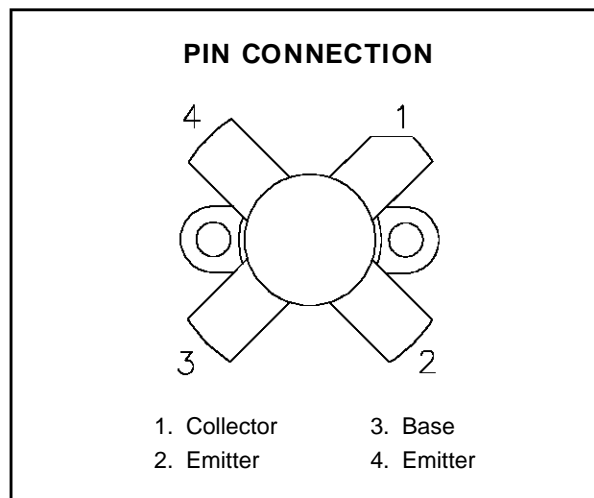
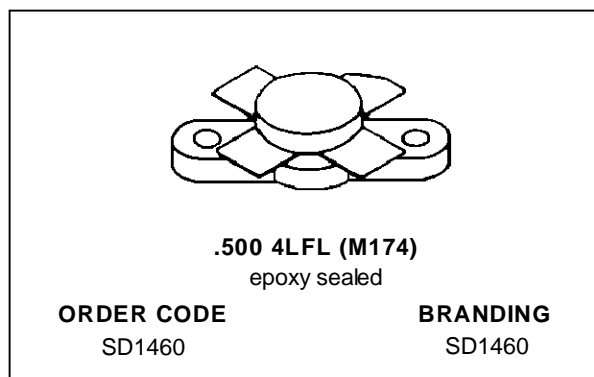


**RF & MICROWAVE TRANSISTORS
FM BROADCAST APPLICATIONS**

- 108 MHz
- 28 VOLTS
- EFFICIENCY 75%
- COMMON EMITTER
- GOLD METALLIZATION
- P_{OUT} = 150 W MIN. WITH 9.2 dB GAIN


DESCRIPTION

The SD1143 is a 28 V gold metallized epitaxial silicon NPN planar transistor designed for VHF FM broadcast transmitters. This device utilizes diffused emitter resistors to achieve infinite VSWR at rated operating conditions.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

| Symbol | Parameter | Value | Unit |
|-------------------|---------------------------|--------------|------|
| V _{CB0} | Collector-Base Voltage | 60 | V |
| V _{CEO} | Collector-Emitter Voltage | 25 | V |
| V _{CES} | Collector-Emitter Voltage | 60 | V |
| V _{EBO} | Emitter-Base Voltage | 4.0 | V |
| I _c | Device Current | 16 | A |
| P _{DISS} | Power Dissipation | 230 | W |
| T _J | Junction Temperature | +200 | °C |
| T _{STG} | Storage Temperature | - 65 to +150 | °C |

THERMAL DATA

| | | | |
|----------------------|----------------------------------|------|------|
| R _{TH(j-c)} | Junction-Case Thermal Resistance | 0.75 | °C/W |
|----------------------|----------------------------------|------|------|

SD1460

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

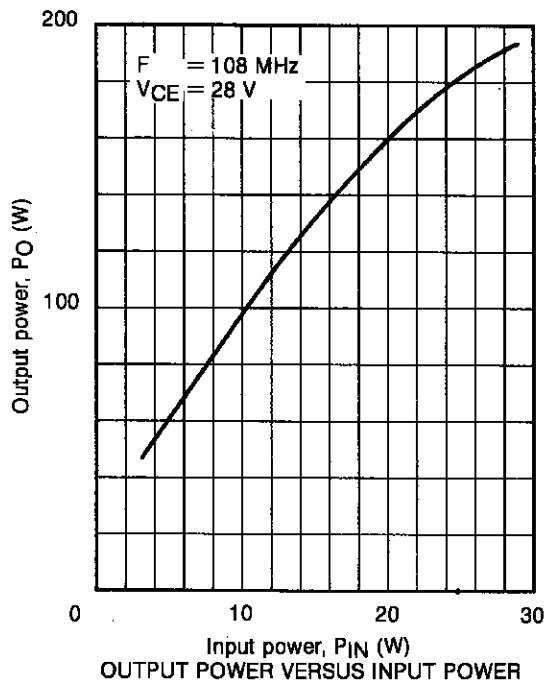
| Symbol | Test Conditions | | Value | | | Unit |
|-------------------|------------------------|-----------------------|-------|------|------|------|
| | | | Min. | Typ. | Max. | |
| BV _{CBO} | I _C = 100mA | I _E = 0mA | 60 | — | — | V |
| BV _{CER} | I _C = 100mA | R _{BE} = 10Ω | 55 | — | — | V |
| BV _{CEO} | I _C = 100mA | I _B = 0mA | 25 | — | — | V |
| BV _{EBO} | I _E = 20mA | I _C = 0mA | 4.0 | — | — | V |
| h _{FE} | V _{CE} = 5V | I _C = 1A | 20 | — | 150 | — |

DYNAMIC

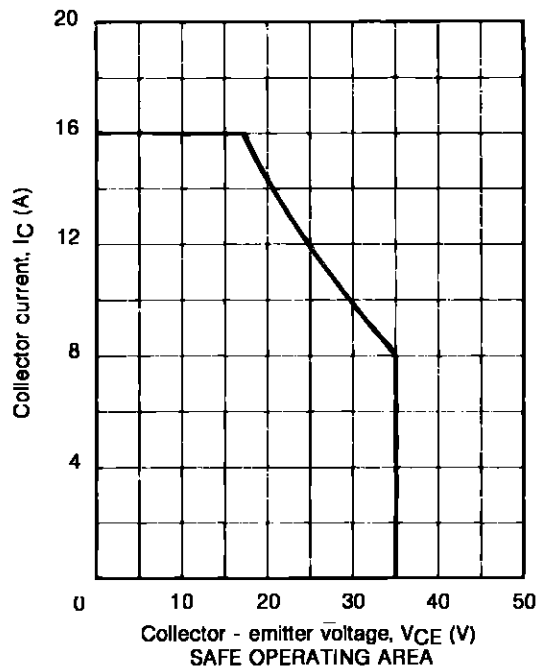
| Symbol | Test Conditions | | | Value | | | Unit |
|------------------|-----------------|------------------------|------------------------|-------|------|------|------|
| | | | | Min. | Typ. | Max. | |
| P _{OUT} | f = 108 MHz | P _{IN} = 18 W | V _{CE} = 28 V | 150 | — | — | W |
| G _P | f = 108 MHz | P _{IN} = 18 W | V _{CE} = 28 V | 9.2 | — | — | dB |
| η _c | f = 108 MHz | P _{IN} = 18 W | V _{CE} = 28 V | 70 | — | — | % |
| C _{OB} | f = 1 MHz | V _{CB} = 28 V | | — | — | 150 | pF |

TYPICAL PERFORMANCE

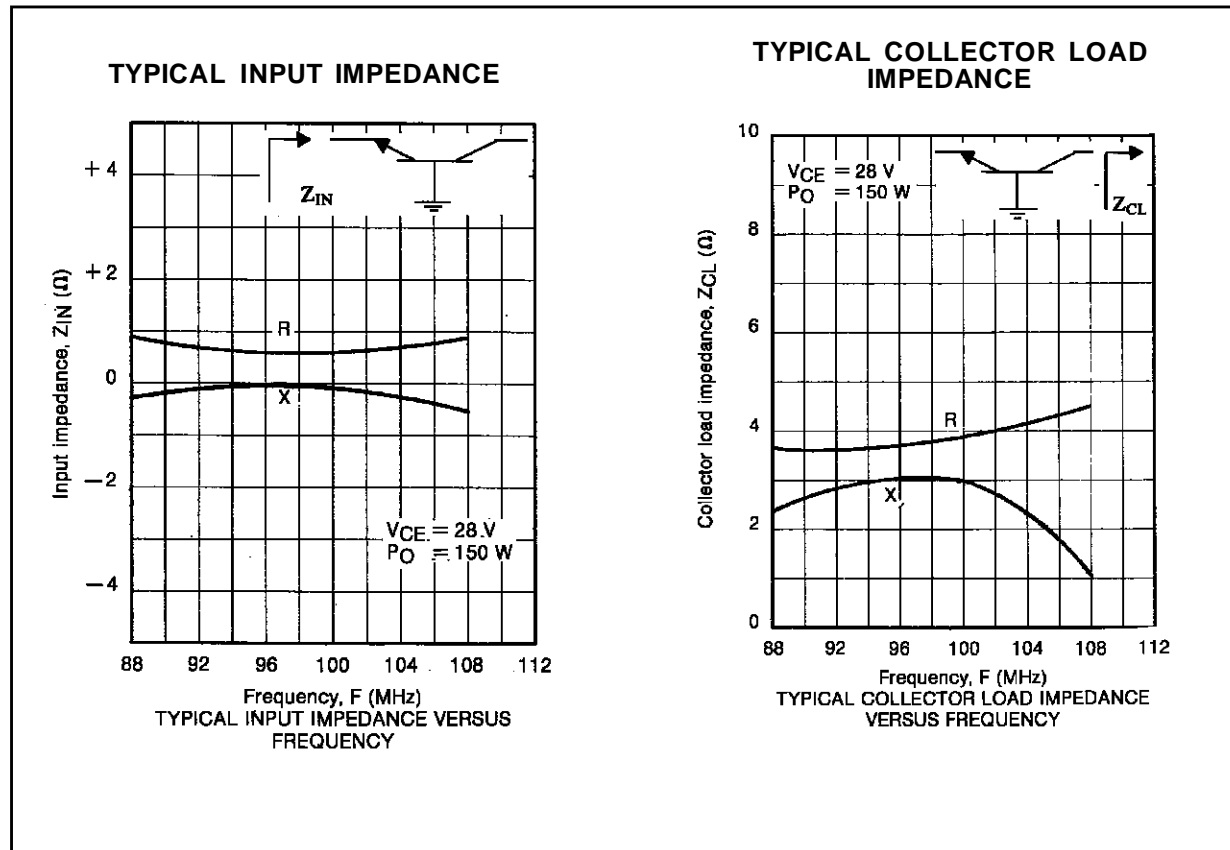
POWER OUTPUT vs POWER INPUT



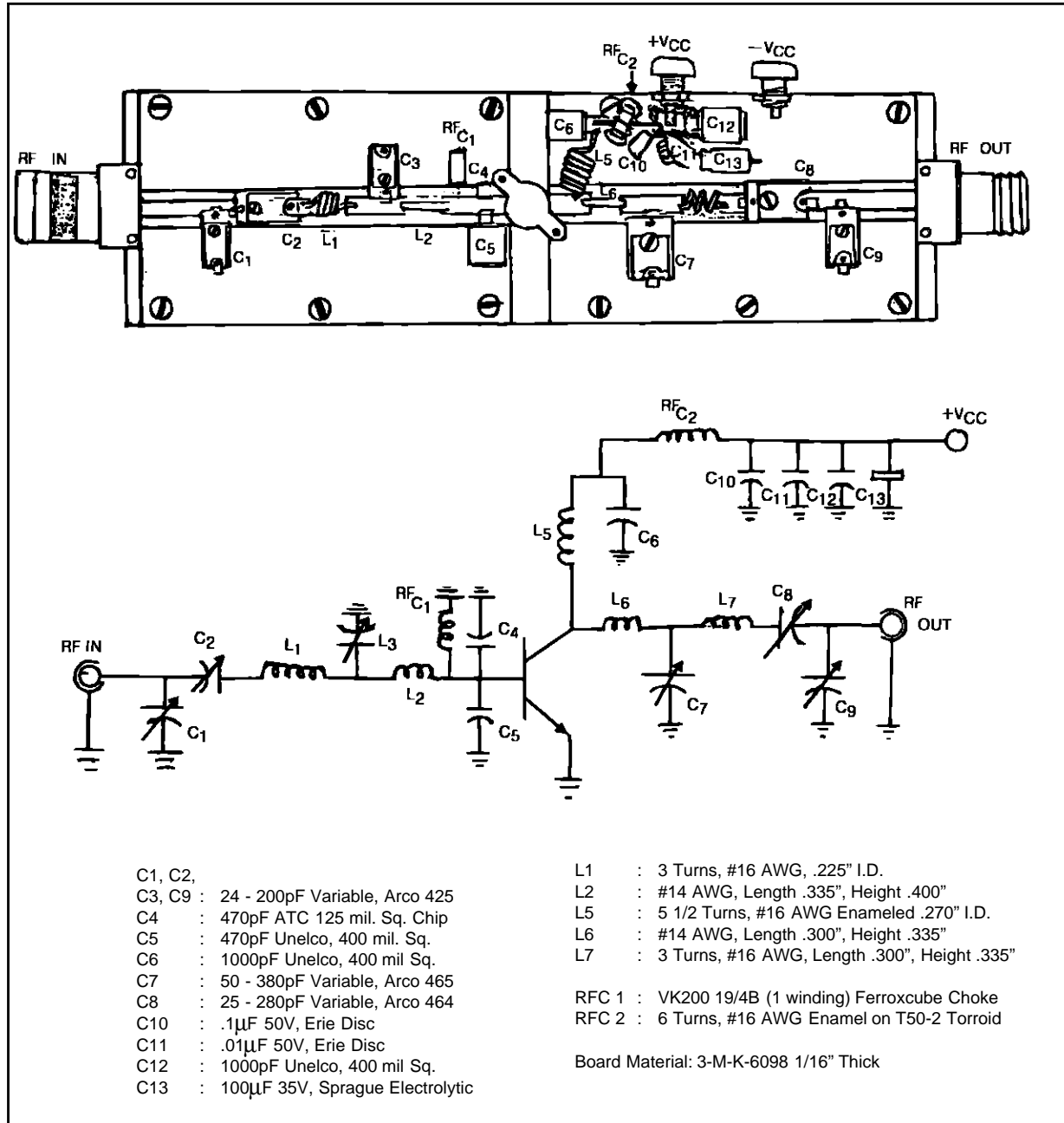
SAFE OPERATING AREA



IMPEDANCE DATA

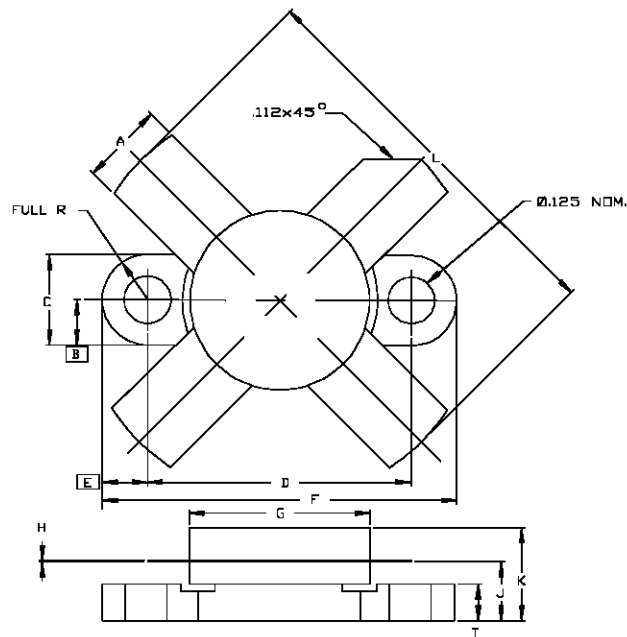


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0174



| SGS-THOMSON MICROELECTRONICS | | | CONT'D | | |
|------------------------------|----------------------|----------------------|--------|----------------------|----------------------|
| | MINIMUM Inches/mm | MAXIMUM Inches/mm | | MINIMUM Inches/mm | MAXIMUM Inches/mm |
| A | .220/5,59 | .230/5,84 | K | | .280/7,11 |
| B | .125/3,18 | | L | | 1.050/26,67 |
| C | .245/6,22 | .255/6,48 | | | |
| D | .720/18,28 | .730/18,54 | | | |
| E | .125/3,18 | | | | |
| F | .970/24,64 | .980/24,89 | | | |
| G | .495/12,57 | .505/12,83 | | | |
| H | .003/0,08 | .007/0,18 | | | |
| I | .090/2,29 | .110/2,79 | | | |
| J | .160/4,06 | .175/4,45 | | | |

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