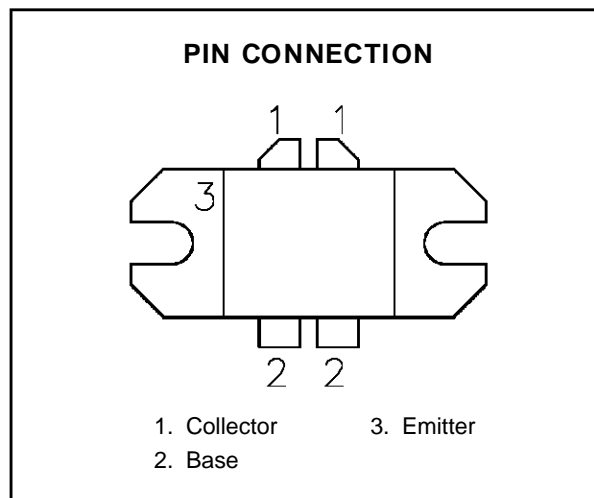
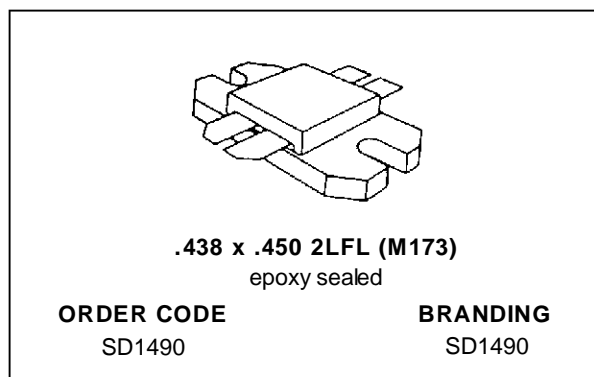


**RF & MICROWAVE TRANSISTORS
TV/LINEAR APPLICATIONS**

- 470 - 860 MHz
- 28 VOLTS
- CLASS A PUSH PULL
- DESIGNED FOR HIGH POWER LINEAR OPERATION
- HIGH SATURATED POWER CAPABILITY
- GOLD METALLIZATION
- DIFFUSED EMITTER BALLAST RESISTORS
- COMMON EMITTER CONFIGURATION
- INTERNAL INPUT MATCHING
- $P_{OUT} = 25 \text{ W MIN. WITH } 9.0 \text{ dB GAIN}$


DESCRIPTION

The SD1490 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class A operation in UHF and Band IV, V television transmitters and transposers.

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

| Symbol | Parameter | Value | Unit |
|------------|---------------------------|--------------|--------------------|
| V_{CBO} | Collector-Base Voltage | 45 | V |
| V_{CEO} | Collector-Emitter Voltage | 30 | V |
| V_{EBO} | Emitter-Base Voltage | 3.0 | V |
| I_C | Device Current | 8 | A |
| P_{DISS} | Power Dissipation | 135 | W |
| T_J | Junction Temperature | +200 | $^{\circ}\text{C}$ |
| T_{STG} | Storage Temperature | - 50 to +150 | $^{\circ}\text{C}$ |

THERMAL DATA

| | | | |
|---------------|----------------------------------|-----|----------------------|
| $R_{TH(j-c)}$ | Junction-Case Thermal Resistance | 1.3 | $^{\circ}\text{C/W}$ |
|---------------|----------------------------------|-----|----------------------|

SD1490

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

STATIC

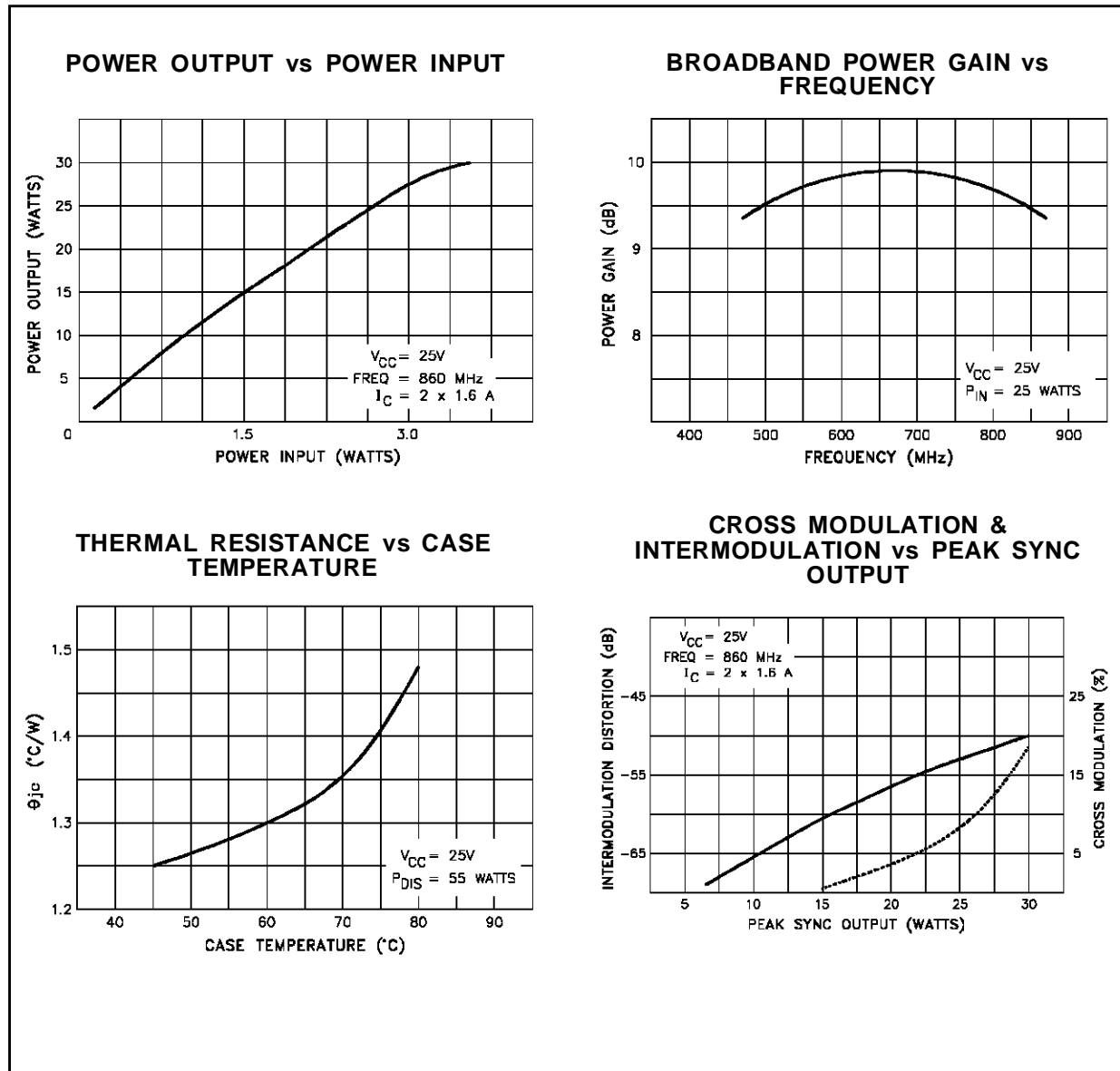
| Symbol | Test Conditions | | Value | | | Unit |
|-------------------|-------------------------------|-----------------------------|-------|------|------|------|
| | | | Min. | Typ. | Max. | |
| BV_{CBO} | $I_{\text{C}} = 50\text{mA}$ | $I_{\text{E}} = 0\text{mA}$ | 45 | — | — | V |
| BV_{CEO} | $I_{\text{C}} = 200\text{mA}$ | $I_{\text{B}} = 0\text{mA}$ | 30 | — | — | V |
| BV_{EBO} | $I_{\text{E}} = 10\text{mA}$ | $I_{\text{C}} = 0\text{mA}$ | 3.0 | — | — | V |
| I_{CEO} | $V_{\text{CE}} = 25\text{V}$ | $I_{\text{E}} = 0\text{mA}$ | — | — | 5 | mA |
| h_{FE} | $V_{\text{CE}} = 5\text{V}$ | $I_{\text{C}} = 3\text{A}$ | 10 | — | 80 | — |

DYNAMIC

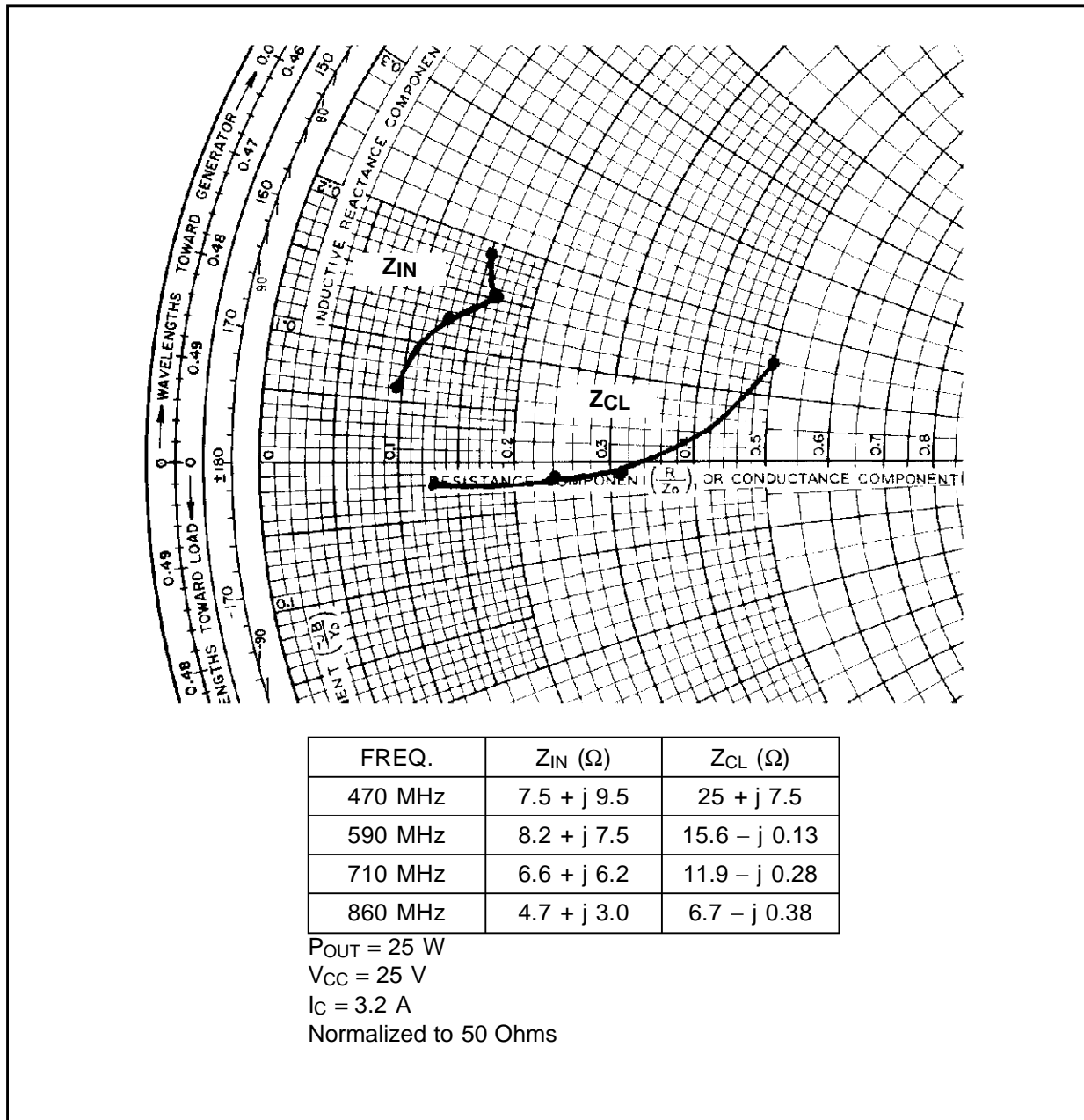
| Symbol | Test Conditions | | | Value | | | Unit |
|------------------|----------------------|-------------------------------|--------------------------------|-------|------|------|------|
| | | | | Min. | Typ. | Max. | |
| P_{OUT} | $f = 860\text{ MHz}$ | $V_{\text{CE}} = 25\text{ V}$ | $I_{\text{C}} = 3.2\text{ A}$ | 25 | — | — | W |
| G_{P} | $f = 860\text{ MHz}$ | $V_{\text{CE}} = 25\text{ V}$ | $I_{\text{C}} = 3.2\text{ A}$ | 8.0 | — | — | dB |
| CMOD | $f = 860\text{ MHz}$ | $V_{\text{CE}} = 25\text{ V}$ | $P_{\text{REF}} = 25\text{ W}$ | — | — | 20 | % |
| IMD_3^* | $f = 860\text{ MHz}$ | $V_{\text{CE}} = 25\text{ V}$ | $P_{\text{REF}} = 25\text{ W}$ | — | — | -45 | dB |
| COB | $f = 1\text{ MHz}$ | $V_{\text{CB}} = 28\text{ V}$ | | — | 70 | — | pF |

Note: * 3 Tone Testing (- 8, - 10, - 16 dB Relative to P_{REF})

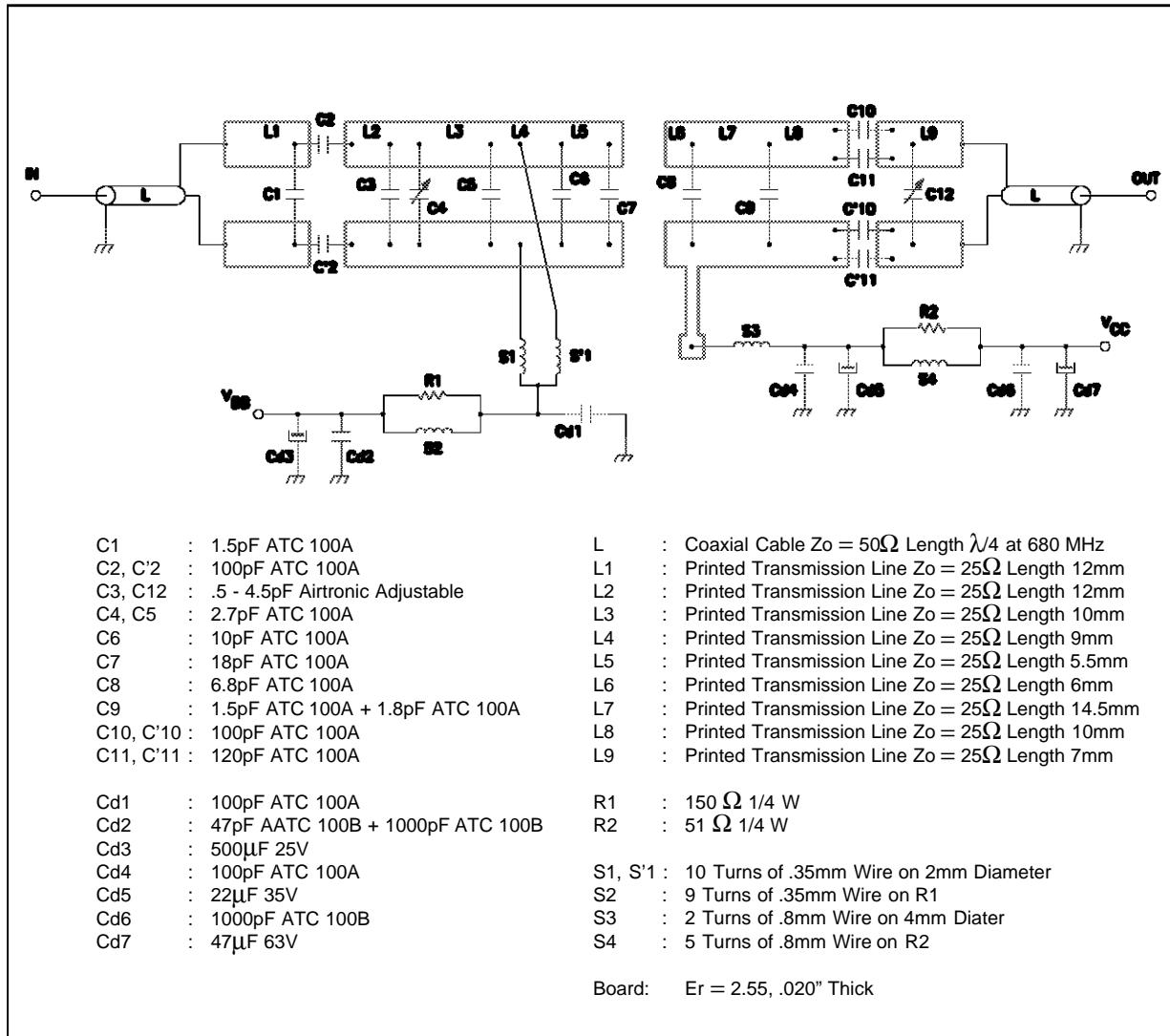
TYPICAL PERFORMANCE



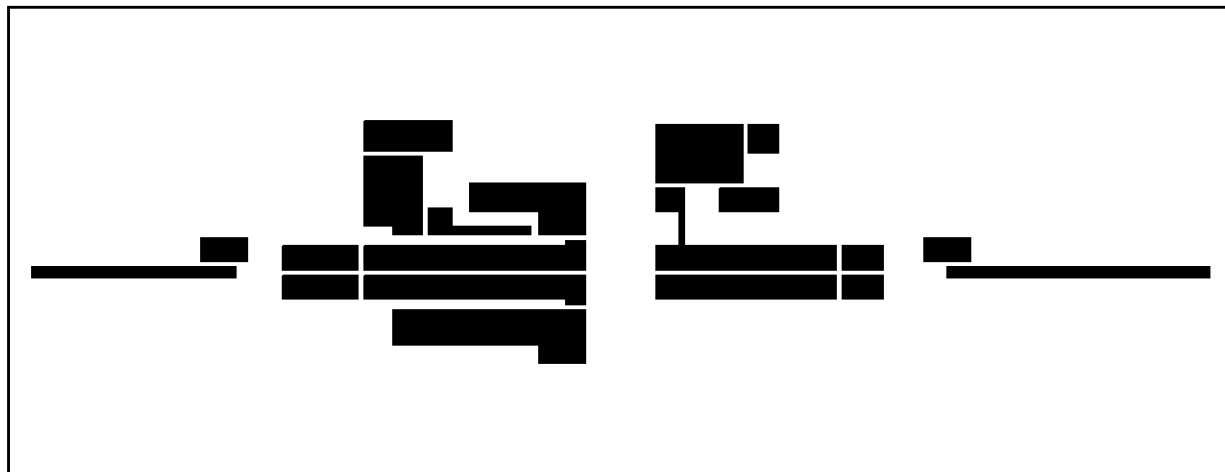
IMPEDANCE DATA



TEST CIRCUIT

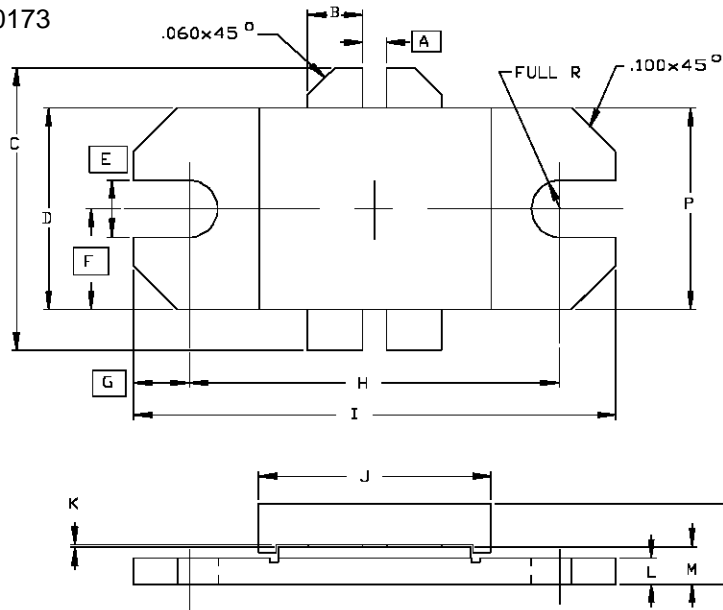


TEST CIRCUIT LAYOUT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0173



| SGS-THOMSON MICROELECTRONICS | | | CONT'D | | |
|------------------------------|----------------------|----------------------|--------|----------------------|----------------------|
| | MINIMUM Inches/mm | MAXIMUM Inches/mm | | MINIMUM Inches/mm | MAXIMUM Inches/mm |
| A | .055/1,40 | | K | .002/0,05 | .006/0,15 |
| B | .120/3,05 | .130/3,30 | L | .055/1,40 | .065/1,65 |
| C | | .785/19,94 | M | .080/2,03 | .095/2,41 |
| D | .455/11,56 | .465/11,81 | N | | .195/4,95 |
| E | .125/3,18 | | P | .455/11,56 | .465/11,81 |
| F | .230/5,84 | | | | |
| G | .128/3,25 | | | | |
| H | .838/21,28 | .850/21,59 | | | |
| I | 1.095/27,81 | 1.105/28,07 | | | |
| J | .525/13,34 | .535/13,59 | | | |

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