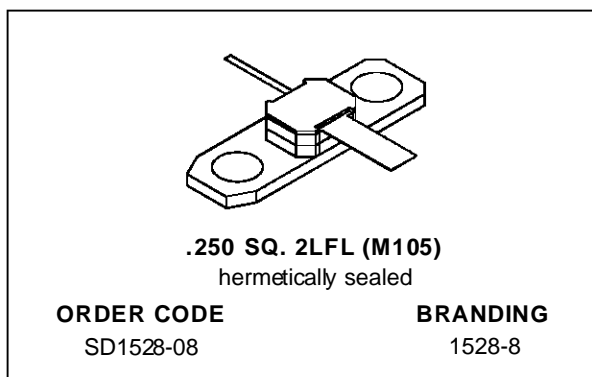
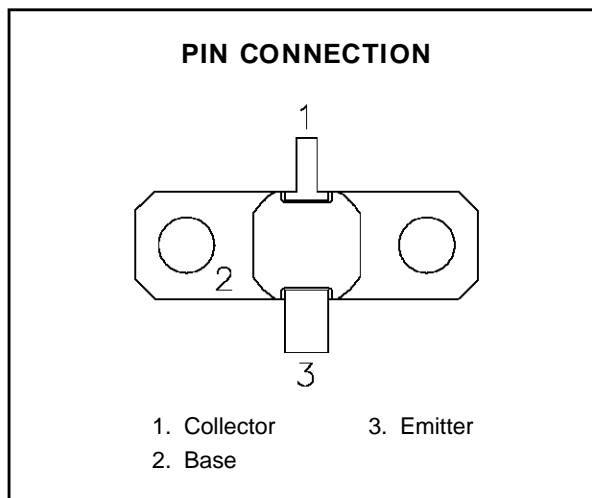


**RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**

- DESIGNED FOR HIGH POWER PULSED IFF, DME, TACAN APPLICATIONS
- 20 WATTS (typ.) IFF 1030 - 1090 MHz
- 15 WATTS (min.) DME 1025 - 1150 MHz
- 15 WATTS (typ.) TACAN 960 - 1215 MHz
- 10 dB MIN. GAIN
- REFRACTORY GOLD METALLIZATION
- EMITTER BALLASTING AND LOW THERMAL RESISTANCE
- 20:1 LOAD VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS
- INPUT MATCHED, COMMON BASE CONFIGURATION


**DESCRIPTION**

The SD1528-08 is a gold metallized, silicon NPN power transistor. The SD1528-08 is designed for applications requiring high peak power and low duty cycles such as IFF, DME and TACAN. The SD1528-08 is packaged in the .250" input matched hermetic stripline flange package resulting in improved broadband performance and a low thermal resistance.


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

| Symbol     | Parameter                 | Value        | Unit        |
|------------|---------------------------|--------------|-------------|
| $V_{CBO}$  | Collector-Base Voltage    | 65           | V           |
| $V_{CEO}$  | Collector-Emitter Voltage | 65           | V           |
| $V_{EBO}$  | Emitter-Base Voltage      | 3.5          | V           |
| $I_C$      | Device Current            | 1.5          | A           |
| $P_{DISS}$ | Power Dissipation         | 87.5         | W           |
| $T_J$      | Junction Temperature      | +200         | $^{\circ}C$ |
| $T_{STG}$  | Storage Temperature       | - 65 to +150 | $^{\circ}C$ |

**THERMAL DATA**

|               |                                  |     |               |
|---------------|----------------------------------|-----|---------------|
| $R_{TH(j-c)}$ | Junction-Case Thermal Resistance | 2.0 | $^{\circ}C/W$ |
|---------------|----------------------------------|-----|---------------|

## SD1528-08

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

#### STATIC

| Symbol     | Test Conditions |               | Value |      |      | Unit |
|------------|-----------------|---------------|-------|------|------|------|
|            |                 |               | Min.  | Typ. | Max. |      |
| $BV_{CBO}$ | $I_C = 10mA$    | $I_E = 0mA$   | 65    | —    | —    | V    |
| $BV_{CES}$ | $I_C = 25mA$    | $V_{BE} = 0V$ | 65    | —    | —    | V    |
| $BV_{EBO}$ | $I_E = 1mA$     | $I_C = 0mA$   | 3.5   | —    | —    | V    |
| $I_{CES}$  | $V_{CE} = 50V$  | $I_E = 0mA$   | —     | —    | 2    | mA   |

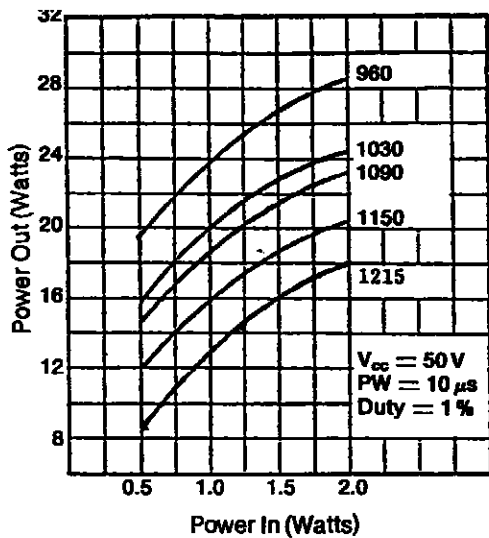
#### DYNAMIC

| Symbol    | Test Conditions      |                  |                 | Value |      |      | Unit |
|-----------|----------------------|------------------|-----------------|-------|------|------|------|
|           |                      |                  |                 | Min.  | Typ. | Max. |      |
| $P_{OUT}$ | $f = 1025 - 1150MHz$ | $P_{IN} = 1.5 W$ | $V_{CE} = 50 V$ | 15    | —    | —    | W    |
| $G_P$     | $f = 1025 - 1150MHz$ | $P_{IN} = 1.5 W$ | $V_{CE} = 50 V$ | 10    | —    | —    | dB   |
| $\eta_c$  | $f = 1025 - 1150MHz$ | $P_{IN} = 1.5 W$ | $V_{CE} = 50 V$ | 30    | —    | —    | %    |

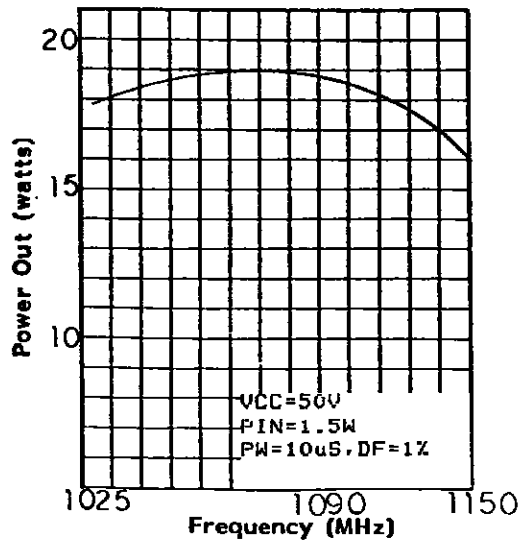
Note: Pulse Width =  $10\mu Sec$ , Duty Cycle = 1%

#### TYPICAL PERFORMANCE

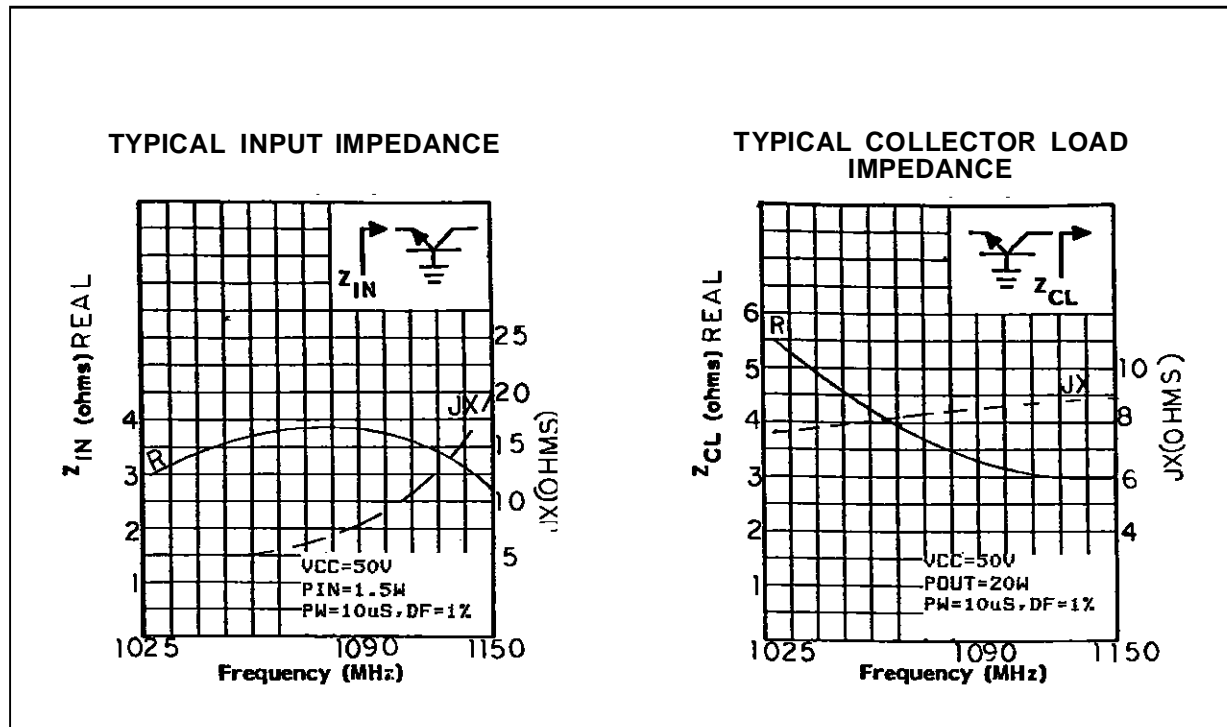
POWER OUTPUT vs POWER INPUT



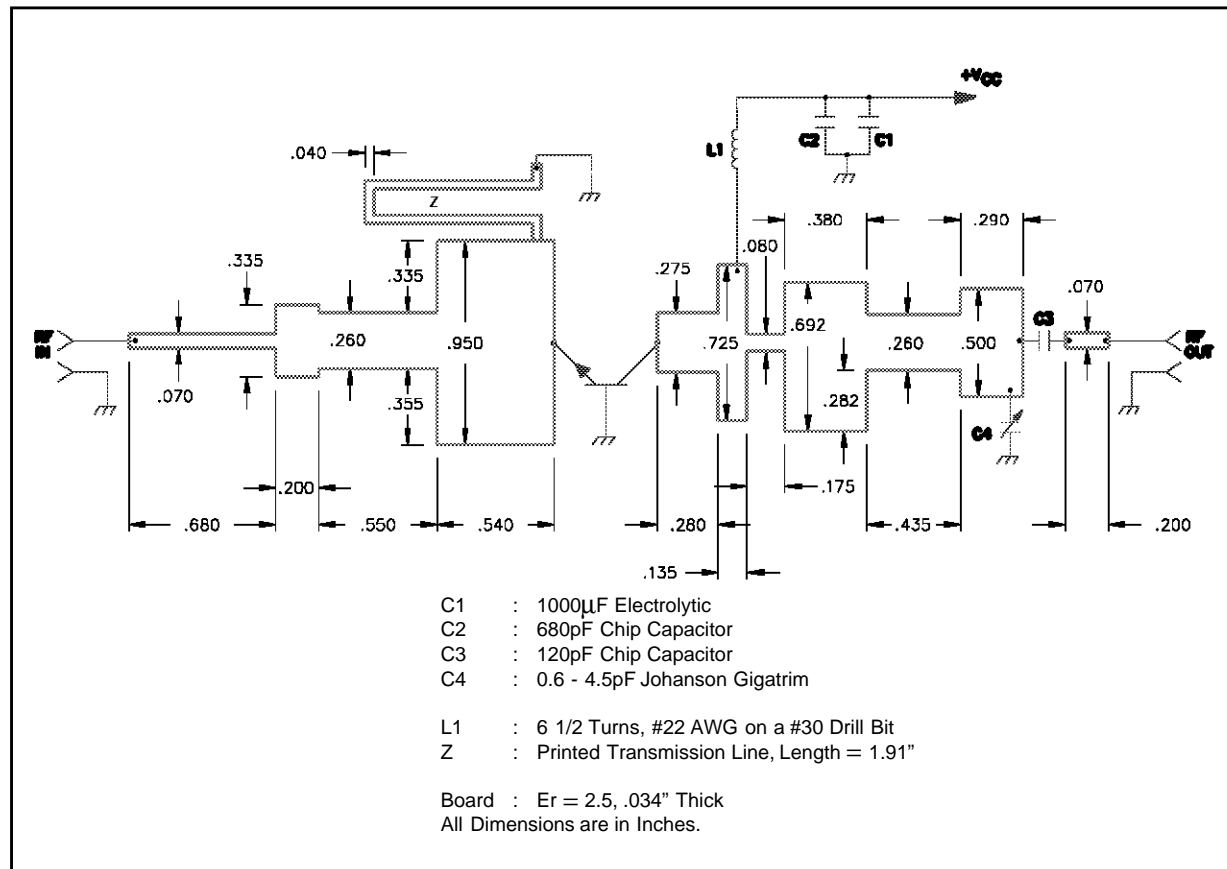
POWER OUTPUT vs FREQUENCY



## IMPEDANCE DATA

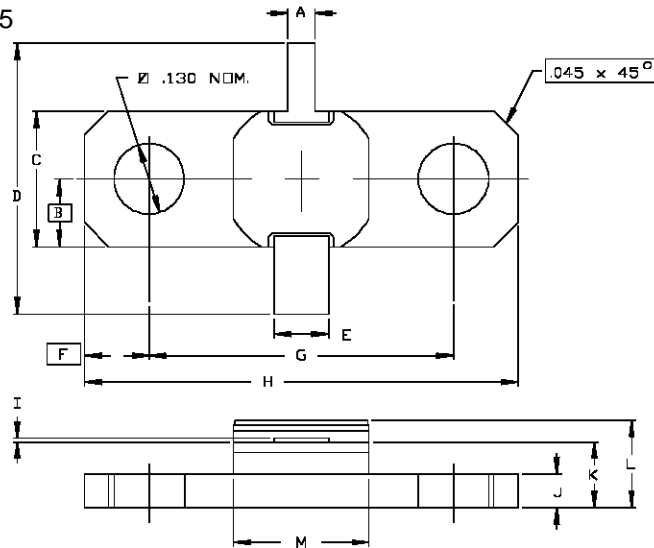


## TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0105



| SGS-THOMSON MICROELECTRONIC |                      |                      | CONT'D |                      |                      |
|-----------------------------|----------------------|----------------------|--------|----------------------|----------------------|
|                             | MINIMUM<br>Inches/mm | MAXIMUM<br>Inches/mm |        | MINIMUM<br>Inches/mm | MAXIMUM<br>Inches/mm |
| A                           | .045/1,14            | .055/1,40            | K      | .112/2,84            | .132/3,35            |
| B                           | .125/3,18            |                      | L      |                      | .175/4,45            |
| C                           | .245/6,22            | .255/6,48            | M      | .245/6,22            | .257/6,53            |
| D                           | 1.235/31,37          |                      |        |                      |                      |
| E                           | .095/2,41            | .105/2,67            |        |                      |                      |
| F                           | .120/3,05            |                      |        |                      |                      |
| G                           | .557/14,15           | .567/14,40           |        |                      |                      |
| H                           | .795/20,19           | .805/20,45           |        |                      |                      |
| I                           | .002/0,05            | .006/0,15            |        |                      |                      |
| J                           | .057/1,45            | .067/1,70            |        |                      |                      |

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