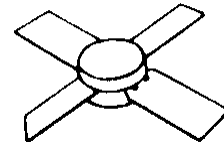


## RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

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

### DESCRIPTION

The SD1530-01 is a gold metallized silicon, NPN power transistor designed for applications requiring high peak power and low duty cycles such as IFF, DME and TACAN. The SD1530-01 is packaged in the .280" input matched stripline package resulting in improved broadband performance and a low thermal resistance.

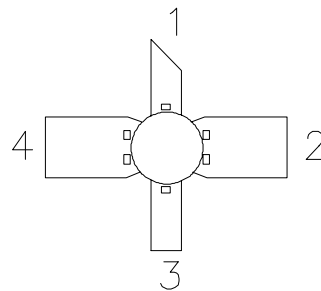


**.280 4LSL (M115)**  
epoxy sealed

**ORDER CODE**  
SD1530-01

**BRANDING**  
1530-1

### PIN CONNECTION



1. Collector                      3. Emitter  
2. Base                            4. Base

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

| Symbol     | Parameter                 | Value        | Unit        |
|------------|---------------------------|--------------|-------------|
| $V_{CBO}$  | Collector-Base Voltage    | 65           | V           |
| $V_{CES}$  | Collector-Emitter Voltage | 65           | V           |
| $V_{EBO}$  | Emitter-Base Voltage      | 3.5          | V           |
| $I_C$      | Device Current            | 2.6          | 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 | $^{\circ}C/W$ |
|---------------|----------------------------------|-----|---------------|

ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

STATIC

| Symbol            | Test Conditions       |                      | Value |      |      | Unit |
|-------------------|-----------------------|----------------------|-------|------|------|------|
|                   |                       |                      | Min.  | Typ. | Max. |      |
| BV <sub>CBO</sub> | I <sub>C</sub> = 20mA | I <sub>E</sub> = 0mA | 60    | —    | —    | V    |
| BV <sub>CES</sub> | I <sub>C</sub> = 20mA | V <sub>BE</sub> = 0V | 60    | —    | —    | V    |
| BV <sub>EBO</sub> | I <sub>E</sub> = 2mA  | I <sub>C</sub> = 0mA | 3.5   | —    | —    | V    |
| I <sub>CBO</sub>  | V <sub>CB</sub> = 50V | I <sub>E</sub> = 0mA | —     | —    | 2    | mA   |
| h <sub>FE</sub>   | V <sub>CB</sub> = 5V  | I <sub>C</sub> = .5A |       |      |      |      |

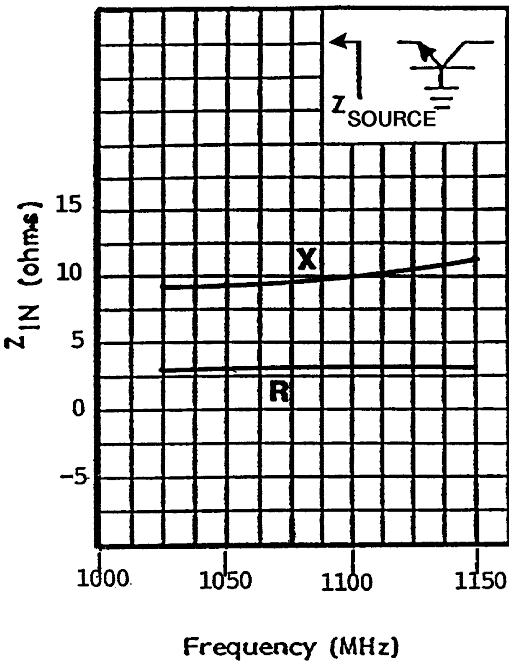
DYNAMIC

| Symbol           | Test Conditions    |                         |                        | Value |      |      | Unit |
|------------------|--------------------|-------------------------|------------------------|-------|------|------|------|
|                  |                    |                         |                        | Min.  | Typ. | Max. |      |
| P <sub>OUT</sub> | f = 1025 – 1150MHz | P <sub>IN</sub> = 5.6 W | V <sub>CE</sub> = 50 V | 35    | —    | —    | W    |
| G <sub>P</sub>   | f = 1025 – 1150MHz | P <sub>IN</sub> = 5.6 W | V <sub>CE</sub> = 50 V | 9.0   | —    | —    | dB   |

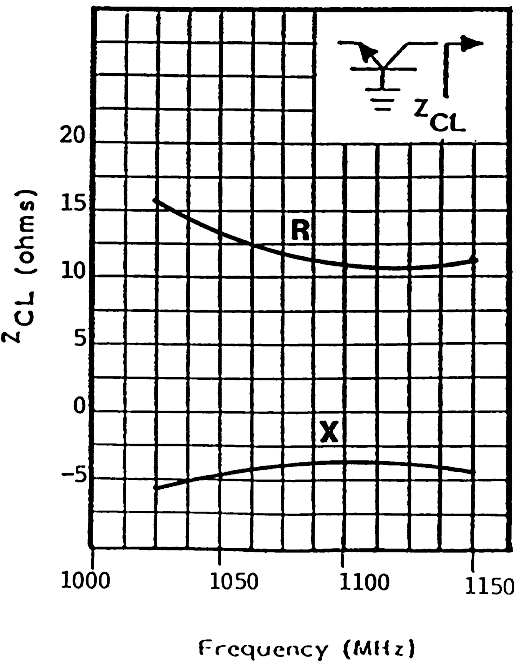
Note: Pulse Width = 10μSec, Duty Cycle = 1%  
This device is suitable for use under other pulse width/duty cycle conditions.  
Please contact the factory for specific applications assistance.

IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

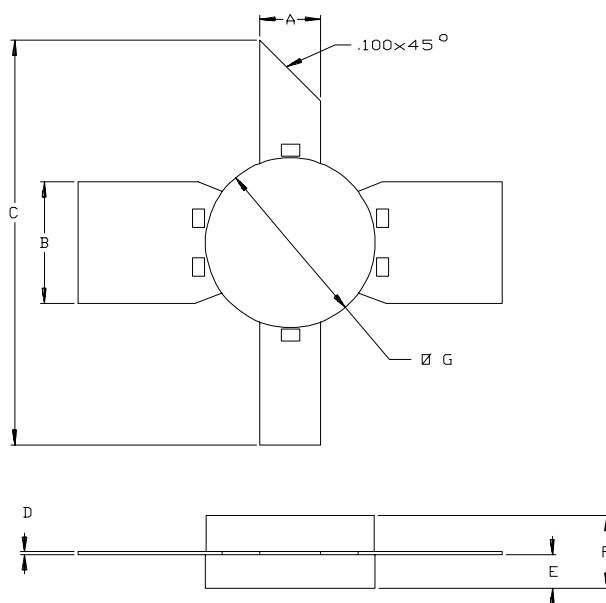


TYPICAL COLLECTOR LOAD IMPEDANCE



## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0115



| SGS-THOMSON MICROELECTRONICS |                      |                      |
|------------------------------|----------------------|----------------------|
|                              | MINIMUM<br>Inches/mm | MAXIMUM<br>Inches/mm |
| A                            | .095/2,41            | .105/2,67            |
| B                            | .195/4,95            | .205/5,21            |
| C                            | 1.000/25,40          |                      |
| D                            | .004/0,10            | .007/0,18            |
| E                            | .050/1,27            | .065/1,65            |
| F                            |                      | .145/3,68            |
| G                            | .275/6,99            | .285/7,21            |
|                              |                      |                      |
|                              |                      |                      |
|                              |                      |                      |