

SD1019

RF AND MICROWAVE TRANSISTORS VHF APPLICATIONS

Features

- 136 MHz
- 13.5 V
- COMMON EMITTER
- $P_{OUT} = 30 \text{ W MIN.}$
- $GAIN = 4.5 \text{ dB}$

DESCRIPTION:

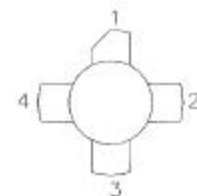
The SD1019 is a 28 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications.

It uses nichrome aluminum metallization to achieve infinite VSWR at rated operating conditions.



.500 4L STUD (M130)
epoxy sealed

PIN CONNECTION



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

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

| Symbol | Parameter | Value | Unit |
|------------|---------------------------|-------------|--------------------|
| V_{CBO} | Collector-Base Voltage | 65 | V |
| V_{CEO} | Collector-Emitter Voltage | 35 | V |
| V_{EBO} | Emitter-Base Voltage | 4 | V |
| I_C | Collector Current | 9 | A |
| P_{DISS} | Total Power Dissipation | 117 | W |
| T_{stg} | Storage Temperature | -65 to +150 | $^{\circ}\text{C}$ |
| T_j | Junction Temperature | +200 | $^{\circ}\text{C}$ |

THERMAL DATA

| | | | |
|---------------|----------------------------------|-----|----------------------|
| $R_{TH(j-c)}$ | Junction-Case Thermal Resistance | 1.7 | $^{\circ}\text{C/W}$ |
|---------------|----------------------------------|-----|----------------------|

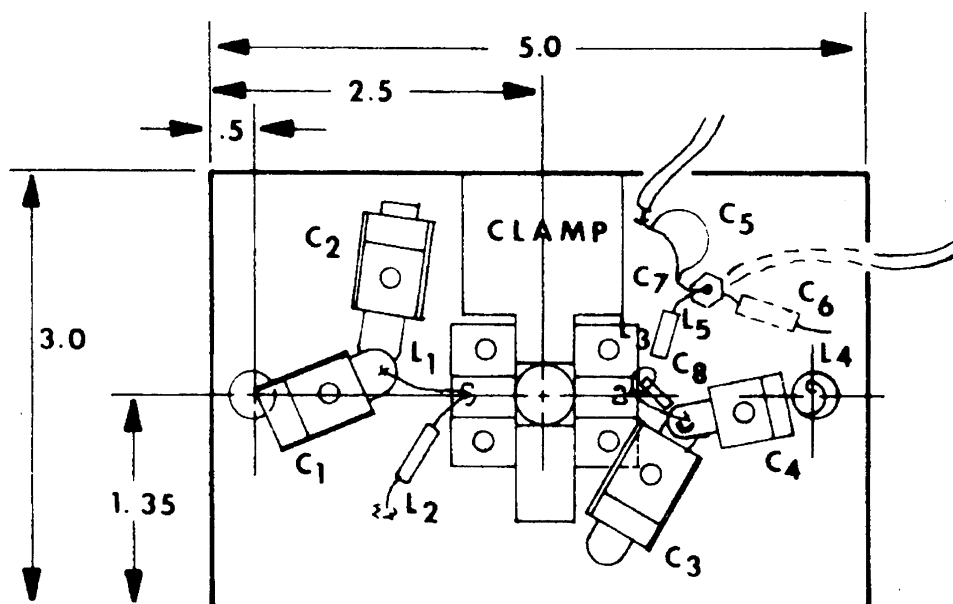
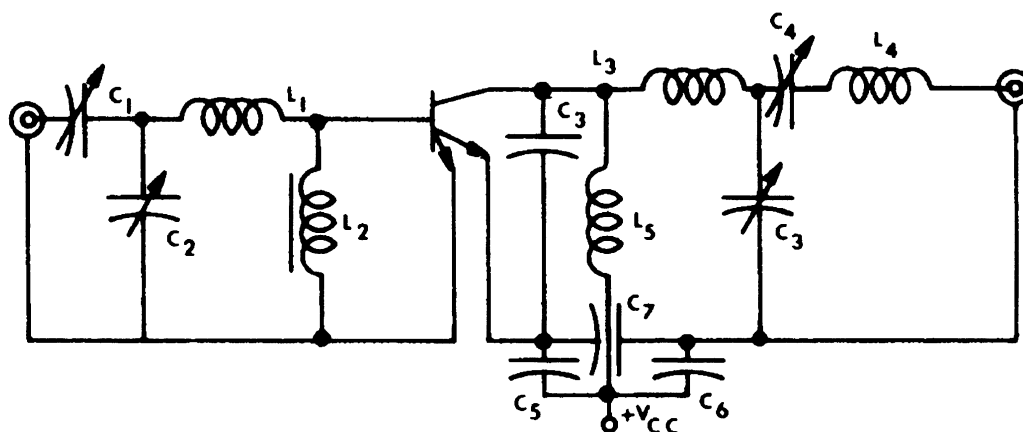
ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

| Symbol | Test Conditions | Value | | | Unit |
|-------------------------|-------------------------------------------------------|-----------|------------|------|-----------|
| | | Min. | Typ. | Max. | |
| BV_{CBO} | I_C = 20 mA I_E = 0 | 65 | --- | --- | V |
| BV_{CEO} | I_C = 200 mA I_B = 0 | 35 | --- | --- | V |
| BV_{EBO} | I_E = 10 mA I_C = 0 | 4 | --- | --- | V |
| I_{CBO} | V_{CB} = 30 V I_E = 0 | --- | 1.5 | --- | mA |
| h_{FE} | V_{CE} = 5 V I_C = 500 mA | 5 | --- | --- | --- |

DYNAMIC

| Symbol | Test Conditions | Value | | | Unit |
|------------------------|--------------------------------------------------------------------------|------------|------|------------|-----------|
| | | Min. | Typ. | Max. | |
| P_{OUT} | f = 150 MHz P_{IN} = 10.6 W V_{CE} = 13.5 V | 30 | --- | --- | W |
| G_P | f = 150 MHz P_{IN} = 10.6 W V_{CE} = 13.5 V | 4.5 | --- | --- | dB |
| C_{OB} | f = 1MHz V_{CB} = 30 V | --- | --- | 150 | pF |

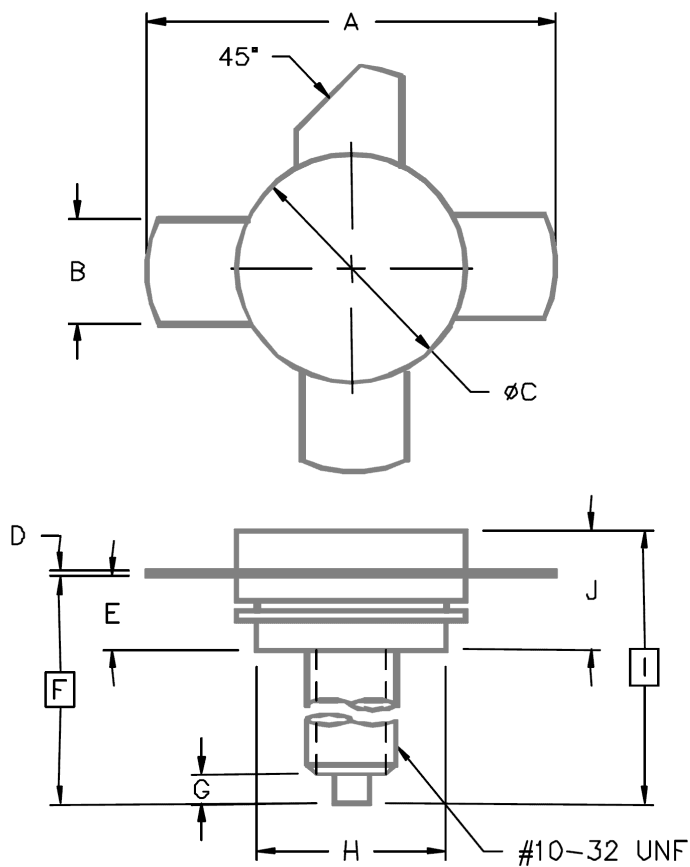
TEST CIRCUIT



| | | | |
|----------|---------------------|----|----------------------------------------------|
| C1 | : ARCO 462 | L1 | : #14 AWG. Wire, .3" Long |
| C2,C3,C4 | : ARCO 463 | L2 | : 12mH Choke |
| C5 | : .02 μ F Erie | L3 | : 1 Turn, #20 AWG. Wire, .3" I.D., .25" Long |
| C6 | : 15 μ F Semcor | L4 | : 1 Turn, #16 AWG. Wire, .23" I.D., .1" Long |
| C7 | : AB 220pF Feedthru | L5 | : .22mH Deci-Ductor |
| C8 | : 150pF Unelco | | |

PACKAGE MECHANICAL DATA

PACKAGE STYLE M130



| | MINIMUM INCHES/MM | MAXIMUM INCHES/MM | | MINIMUM INCHES/MM | MAXIMUM INCHES/MM |
|---|----------------------|----------------------|---|----------------------|----------------------|
| A | 1.010/25,65 | 1.050/26,67 | I | .720/18,29 | |
| B | .220/5,59 | .230/5,84 | J | .250/6,35 | .290/7,37 |
| C | .495/12,57 | .505/12,83 | | | |
| D | .003/0,08 | .007/0,18 | | | |
| E | .160/4,06 | .180/4,57 | | | |
| F | .622/15,80 | | | | |
| G | .100/2,54 | .130/3,31 | | | |
| H | .415/10,54 | .425/10,80 | | | |