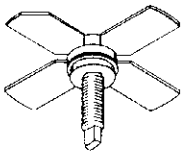
SGS-THOMSON MICROELECTRONICS

# SD1437

## RF & MICROWAVE TRANSISTORS UHF TV/LINEAR APPLICATIONS

- 860 MHz
- COMMON EMITTER
- GOLD METALLIZATION
- CLASS A LINEAR OPERATION
- $P_{OUT}$ = 2 W MIN. WITH 8.5 dB GAIN

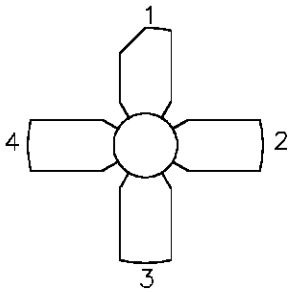




**.280 4L STUD (M122)**
epoxy sealed

| ORDER CODE | BRANDING |
|---|---|
| SD1437 | TCC593 |

**PIN CONNECTION**




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

### DESCRIPTION

The SD1437 is a silicon NPN bipolar device specifically designed for high linearity applications in the UHF frequency range including TV Bands IV and V.

Gold metallization and emitter ballasting assure high reliability under Class A linear amplifier operation.

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

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 45 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 25 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 4.0 | V |
| $I_C$ | Device Current | 1.2 | A |
| $P_{DISS}$ | Power Dissipation | 19.4 | 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 | 9.0 | °C/W |

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

STATIC

| Symbol | Test Conditions | | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| $BV_{CBO}$ | $I_C$ = 10 mA | $I_E$ = 0 mA | 45 | — | — | V |
| $BV_{CEO}$ | $I_C$ = 80 mA | $I_B$ = 0 mA | 25 | — | — | V |
| $BV_{EBO}$ | $I_E$ = 1 mA | $I_C$ = 0 mA | 4.0 | — | — | V |
| $I_{CBO}$ | $V_{CB}$ = 28 V | $I_E$ = 0 mA | — | — | 0.45 | mA |
| $h_{FE}$ | $V_{CE}$ = 20 V | $I_C$ = 250 mA | 10 | — | 100 | — |



DYNAMIC

| Symbol | Test Conditions | | | Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | Min. | Typ. | Max. | |
| $P_{OUT}$[1] | f = 860 MHz | $V_{CE}$ = 25 V | $I_C$ = 450 mA | 2 | — | — | W |
| $G_P$[2] | f = 860 MHz | $V_{CE}$ = 25 V | $I_C$ = 450 mA | 8.5 | — | — | dB |
| $IMD_3$[3] | $P_{SYNC}$ = 2 W | $V_{CE}$ = 25 V | $I_C$ = 450 mA | — | –60 | — | dBc |
| $C_{OB}$ | f = 1 MHz | $V_{CB}$ = 25 V | | — | — | 10 | pF |

Note 1: $P_{IN}$ = 0.3 W

Note 2: $P_{OUT}$ = 2 W

Note 3: Levels relative to $P_{SYNC}$

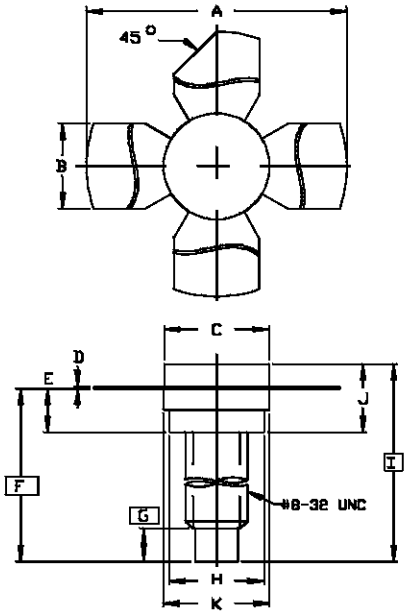
$f_1$ = 860.0 MHz –8dBc

$f_1$ = 863.5 MHz –16dBc

$f_1$ = 864.5 MHz –7dBc

## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0122 rev. B






| SGS-THOMSON MICROELECTRONICS | | |
|---|---|---|
| | MINIMUM Inches/mm | MAXIMUM Inches/mm |
| A | 1.010/25,65 | 1.055/26,80 |
| B | .220/5,59 | .230/5,84 |
| C | .270/6,86 | .285/7,24 |
| D | .003/0,08 | .007/0,18 |
| E | .117/2,97 | .137/3,48 |
| F | .572/14,53 | |
| G | .130/3,30 | |
| H | .245/6,22 | .255/6,48 |
| I | .640/16,26 | |
| J | .175/4,45 | .217/5,51 |
| K | .275/6,99 | .285/7,24 |