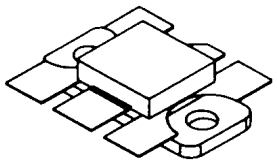
SGS-THOMSON MICROELECTRONICS

# SD1411

## RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

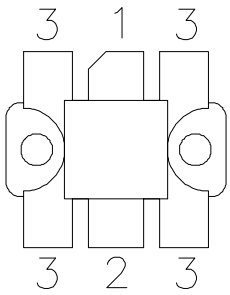
- 30 MHz
- 40 VOLTS
- IMD –30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- $P_{OUT}$ = 200 W MIN. WITH 16 dB GAIN



**.400 x .425 6LFL (M153)**
epoxy sealed

| ORDER CODE | BRANDING |
|---|---|
| SD1411 | SD1411 |

**PIN CONNECTION**




1. Collector
2. Base
3. Emitter

### DESCRIPTION

The SD1411 is a silicon NPN transistor designed for telecommunications in HF and VHF frequency bands. This device utilizes gold metallized die with diffused emitter resistors to achieve high reliability and ruggedness.

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

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 110 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 55 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 4.0 | V |
| $I_C$ | Device Current | 40 | A |
| $P_{DISS}$ | Power Dissipation | 330 | 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 | 0.36 | °C/W |

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

STATIC

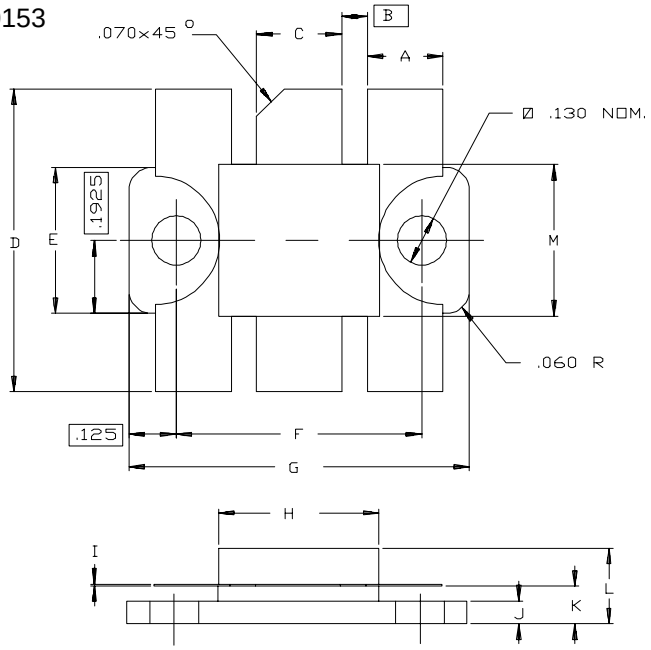
| Symbol | Test Conditions | | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| $BV_{CBO}$ | $I_C$ = 200mA | $I_E$ = 0mA | 110 | — | — | V |
| $BV_{CES}$ | $I_C$ = 200mA | $V_{BE}$ = 0V | 110 | — | — | V |
| $BV_{CER}$ | $I_C$ = 200mA | $R_{BE}$ = 10Ω | 100 | — | — | V |
| $BV_{CEO}$ | $I_C$ = 200mA | $I_B$ = 0mA | 55 | — | — | V |
| $BV_{EBO}$ | $I_E$ = 20mA | $I_C$ = 0mA | 4.0 | — | — | V |
| $I_{CES}$ | $V_{CE}$ = 45V | $I_E$ = 0mA | — | — | 20 | mA |
| $h_{FE}$ | $V_{CE}$ = 6V | $I_C$ = 10A | 15 | — | 80 | — |

DYNAMIC

| Symbol | Test Conditions | | | Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | Min. | Typ. | Max. | |
| $P_{OUT}$ | f = 30 MHz | $V_{CE}$ = 40 V | $I_{CQ}$ = 150 mA | 200 | — | — | W |
| $G_P$ | f = 30 MHz | $V_{CE}$ = 40 V | $I_{CQ}$ = 150 mA | 16 | — | — | dB |
| IMD | f = 30 MHz | $V_{CE}$ = 40 V | $I_{CQ}$ = 150 mA | — | — | –30 | dB |
| $C_{OB}$ | f = 1 MHz | $V_{CB}$ = 50 V | | — | — | 360 | pF |

## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0153




| SGS-THOMSON MICROELECTRONICS | | |
|---|---|---|
| | MINIMUM Inches/mm | MAXIMUM Inches/mm |
| A | .195/4,95 | .205/5,21 |
| B | .067/1,70 | |
| C | .220/5,59 | .230/5,84 |
| D | .790/20,07 | .810/20,57 |
| E | .380/9,65 | .390/9,91 |
| F | .645/16,38 | .655/16,64 |
| G | .885/22,48 | .905/22,98 |
| H | .420/10,67 | .433/11,00 |
| I | .003/0,08 | .007/0,18 |
| J | .055/1,40 | .065/1,65 |

| CONT'D | | |
|---|---|---|
| | MINIMUM Inches/mm | MAXIMUM Inches/mm |
| K | .095/2,41 | .110/2,79 |
| L | | .220/5,59 |
| M | .395/10,03 | .408/10,36 |
| | | |