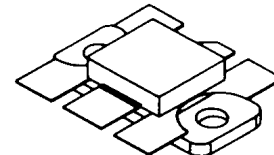


## RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

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



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

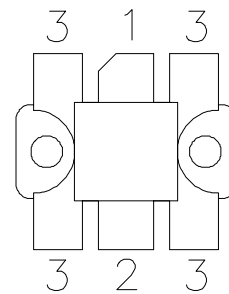
**ORDER CODE**  
SD1411

**BRANDING**  
SD1411

### 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.

### PIN CONNECTION



1. Collector                      3. Emitter  
2. Base

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

| 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         | $^{\circ}\text{C}$ |
| $T_{STG}$  | Storage Temperature       | - 65 to +150 | $^{\circ}\text{C}$ |

### THERMAL DATA

|               |                                  |      |                      |
|---------------|----------------------------------|------|----------------------|
| $R_{TH(j-c)}$ | Junction-Case Thermal Resistance | 0.36 | $^{\circ}\text{C/W}$ |
|---------------|----------------------------------|------|----------------------|

## SD1411

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

#### STATIC

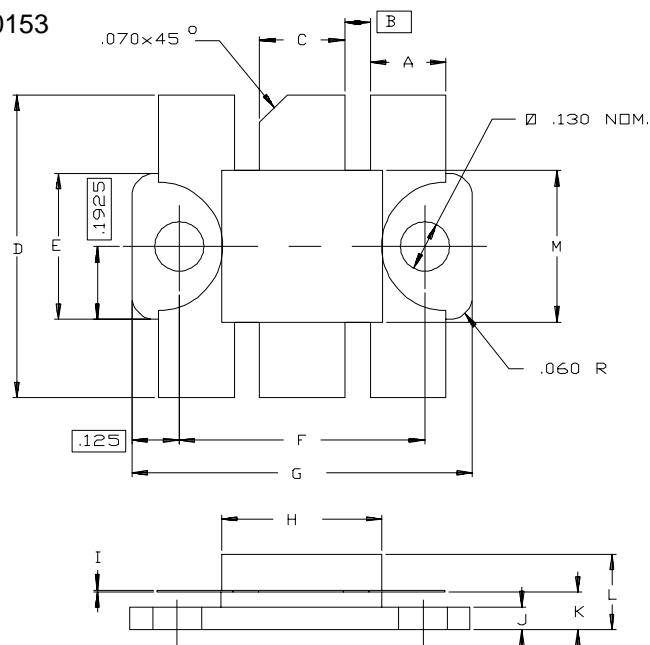
| Symbol            | Test Conditions               |                             | Value |      |      | Unit |
|-------------------|-------------------------------|-----------------------------|-------|------|------|------|
|                   |                               |                     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

#### DYNAMIC

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

## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0153



| SGS-THOMSON MICROELECTRONICS |                      |                      | CONT'D |                      |                      |
|------------------------------|----------------------|----------------------|--------|----------------------|----------------------|
|                              | MINIMUM<br>Inches/mm | MAXIMUM<br>Inches/mm |        | MINIMUM<br>Inches/mm | MAXIMUM<br>Inches/mm |
| A                            | .195/4,95            | .205/5,21            | K      | .095/2,41            | .110/2,79            |
| B                            | .067/1,70            |                      | L      |                      | .220/5,59            |
| C                            | .220/5,59            | .230/5,84            | M      | .395/10,03           | .408/10,36           |
| 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            |        |                      |                      |

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