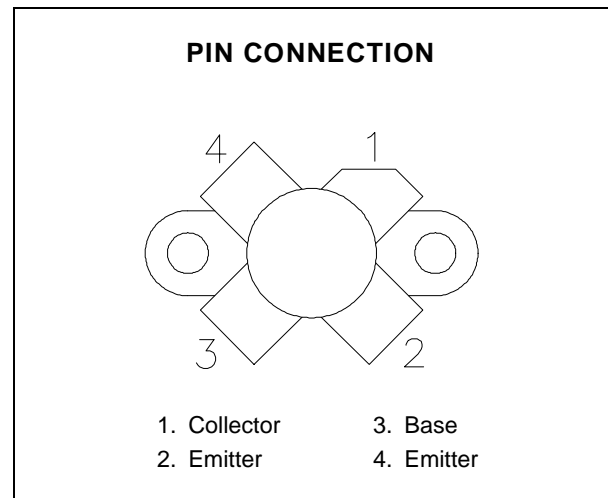
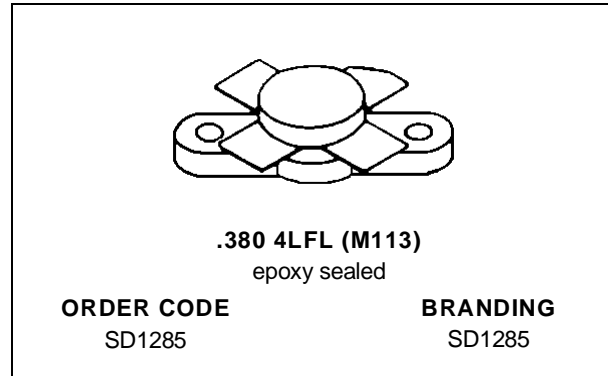


**RF & MICROWAVE TRANSISTORS  
HF SSB APPLICATIONS**

- 30 MHz
- 12.5 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- IMD – 30 dB
- P<sub>OUT</sub> = 20 W MIN. WITH 15 dB GAIN


**DESCRIPTION**

The SD1285 is a 12.5 V epitaxial NPN planar transistor designed primarily for SSB communications. This device utilizes emitter ballasting to achieve extreme ruggedness under severe operating conditions.

**ABSOLUTE MAXIMUM RATINGS** (T<sub>case</sub> = 25°C)

| Symbol            | Parameter                 | Value        | Unit |
|-------------------|---------------------------|--------------|------|
| V <sub>CBO</sub>  | Collector-Base Voltage    | 36           | V    |
| V <sub>CEO</sub>  | Collector-Emitter Voltage | 18           | V    |
| V <sub>EBO</sub>  | Emitter-Base Voltage      | 4.0          | V    |
| I <sub>C</sub>    | Device Current            | 4.5          | A    |
| P <sub>DISS</sub> | Power Dissipation         | 80           | W    |
| T <sub>J</sub>    | Junction Temperature      | +200         | °C   |
| T <sub>STG</sub>  | Storage Temperature       | – 65 to +150 | °C   |

**THERMAL DATA**

|                      |                                  |     |      |
|----------------------|----------------------------------|-----|------|
| R <sub>TH(j-c)</sub> | Junction-Case Thermal Resistance | 2.2 | °C/W |
|----------------------|----------------------------------|-----|------|

## SD1285

### 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> = 50mA | I <sub>E</sub> = 0mA | 36  | —     | —    | V    |      |
| BV <sub>CES</sub> | I <sub>C</sub> = 50mA | V <sub>BE</sub> = 0V | 36  | —     | —    | V    |      |
| BV <sub>CEO</sub> | I <sub>C</sub> = 50mA | I <sub>B</sub> = 0mA | 18  | —     | —    | V    |      |
| BV <sub>EBO</sub> | I <sub>E</sub> = 5mA  | I <sub>C</sub> = 0mA | 4.0 | —     | —    | V    |      |
| I <sub>CES</sub>  | V <sub>CE</sub> = 15V | I <sub>E</sub> = 0mA | —   | —     | 5    | mA   |      |
| h <sub>FE</sub>   | V <sub>CE</sub> = 5V  | I <sub>C</sub> = 1A  | 10  | —     | 200  | —    |      |

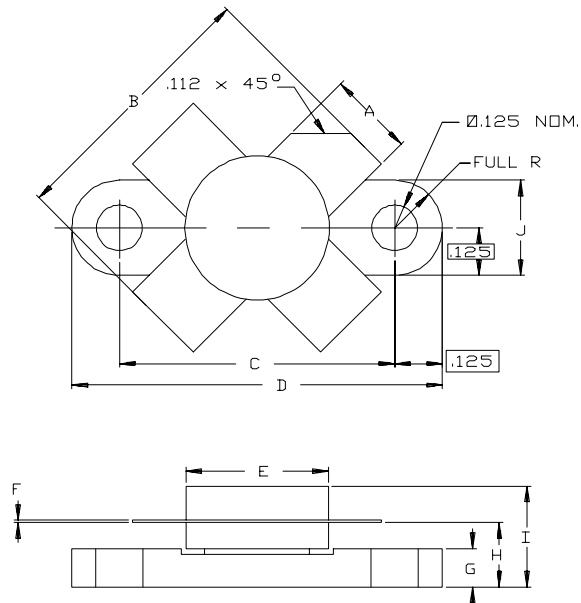
#### DYNAMIC

| Symbol           | Test Conditions |                          |                         | Value |      |      | Unit |
|------------------|-----------------|--------------------------|-------------------------|-------|------|------|------|
|                  |                 |                          |                         | Min.  | Typ. | Max. |      |
| P <sub>OUT</sub> | f = 30 MHz      | V <sub>CC</sub> = 12.5 V | I <sub>CQ</sub> = 25 mA | 20    | —    | —    | W    |
| G <sub>P</sub>   | f = 30 MHz      | V <sub>CC</sub> = 12.5 V | I <sub>CQ</sub> = 25 mA | 15    | 18   | —    | dB   |
| IMD              | f = 30 MHz      | V <sub>CC</sub> = 12.5 V | I <sub>CQ</sub> = 25 mA | —     | —    | - 30 | dB   |
| C <sub>OB</sub>  | f = 1 MHz       | V <sub>CB</sub> = 12.5 V |                         | —     | 100  | —    | pF   |

Note: P<sub>IN</sub> = 0.65 W

## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0113



| SGS-THOMSON MICROELECTRONICS |                      |                      |
|------------------------------|----------------------|----------------------|
|                              | MINIMUM<br>Inches/mm | MAXIMUM<br>Inches/mm |
| A                            | .220/5,59            | .230/5,84            |
| B                            | .785/19,94           |                      |
| C                            | .720/18,29           | .730/18,54           |
| D                            | .970/24,64           | .980/24,89           |
| E                            |                      | .385/9,78            |
| F                            | .004/0,10            | .006/0,15            |
| G                            | .085/2,16            | .105/2,67            |
| H                            | .160/4,06            | .180/4,57            |
| I                            |                      | .280/7,11            |
| J                            | .240/6,10            | .255/6,48            |

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