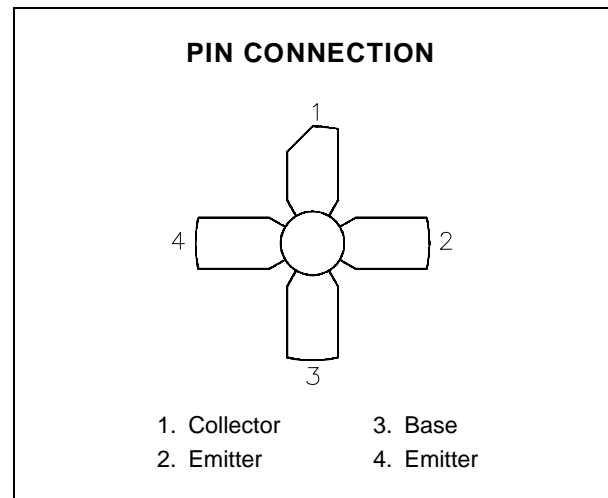
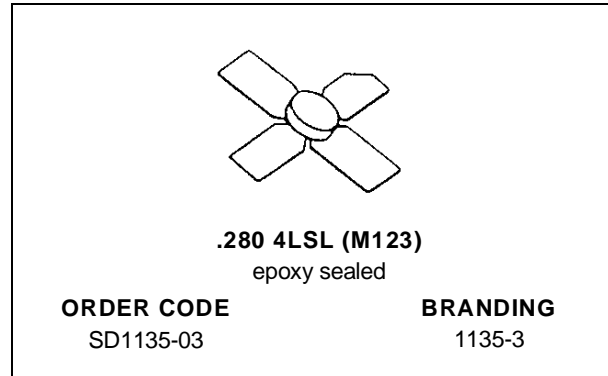


## RF & MICROWAVE TRANSISTORS VHF PORTABLE/MOBILE APPLICATIONS

- 150 MHz
- 7.5 VOLTS
- COMMON EMITTER
- P<sub>OUT</sub> = 2.5 W MIN. WITH 11.0 dB GAIN


**DESCRIPTION**

The SD1135-03 is a 7.5 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications. It withstands severe mismatch under 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>CER</sub>  | Collector-Emitter Voltage | 16           | V    |
| V <sub>CES</sub>  | Collector-Emitter Voltage | 36           | V    |
| V <sub>EBO</sub>  | Emitter-Base Voltage      | 4.0          | V    |
| I <sub>C</sub>    | Device Current            | 1.7          | A    |
| P <sub>DISS</sub> | Power Dissipation         | 15           | 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 | 11.6 | °C/W |
|----------------------|----------------------------------|------|------|

## SD1135-03

### ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

#### STATIC

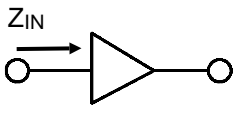
| Symbol            | Test Conditions       |                        | Value |      |      | Unit |
|-------------------|-----------------------|------------------------|-------|------|------|------|
|                   |                       |                        | Min.  | Typ. | Max. |      |
| BV <sub>CES</sub> | I <sub>C</sub> = 10mA | V <sub>BE</sub> = 0V   | 36    | —    | —    | V    |
| BV <sub>CEO</sub> | I <sub>C</sub> = 50mA | I <sub>B</sub> = 0mA   | 16    | —    | —    | V    |
| BV <sub>EBO</sub> | I <sub>E</sub> = 2mA  | I <sub>C</sub> = 0mA   | 4.0   | —    | —    | V    |
| I <sub>CER</sub>  | V <sub>CE</sub> = 10V | R <sub>BE</sub> = 50Ω  | —     | —    | 0.5  | mA   |
| I <sub>CBO</sub>  | V <sub>CB</sub> = 15V | I <sub>E</sub> = 0mA   | —     | —    | 1.0  | mA   |
| h <sub>FE</sub>   | V <sub>CE</sub> = 5V  | I <sub>C</sub> = 200mA | 20    | —    | —    | —    |

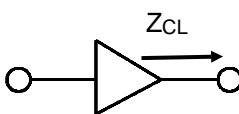
#### DYNAMIC

| Symbol           | Test Conditions |                         | Value |      |      | Unit |
|------------------|-----------------|-------------------------|-------|------|------|------|
|                  |                 |                         | Min.  | Typ. | Max. |      |
| P <sub>OUT</sub> | f = 150 MHz     | V <sub>CC</sub> = 7.5 V | 2.5   | —    | —    | W    |
| G <sub>P</sub>   | f = 150 MHz     | V <sub>CC</sub> = 7.5 V | 11.0  | —    | —    | dB   |
| C <sub>OB</sub>  | f = 1 MHz       | V <sub>CB</sub> = 7.5 V | —     | 19   | —    | pF   |

#### IMPEDANCE DATA

| FREQ.   | Z <sub>IN</sub> (Ω) | Z <sub>CL</sub> (Ω) |
|---------|---------------------|---------------------|
| 150 MHz | 2.2 - j 0.4         | 7.9 + j 8.4         |
| 160 MHz | 1.9 - j 0.8         | 7.6 + j 8.2         |
| 170 MHz | 1.0 - j 1.0         | 6.0 + j 8.3         |

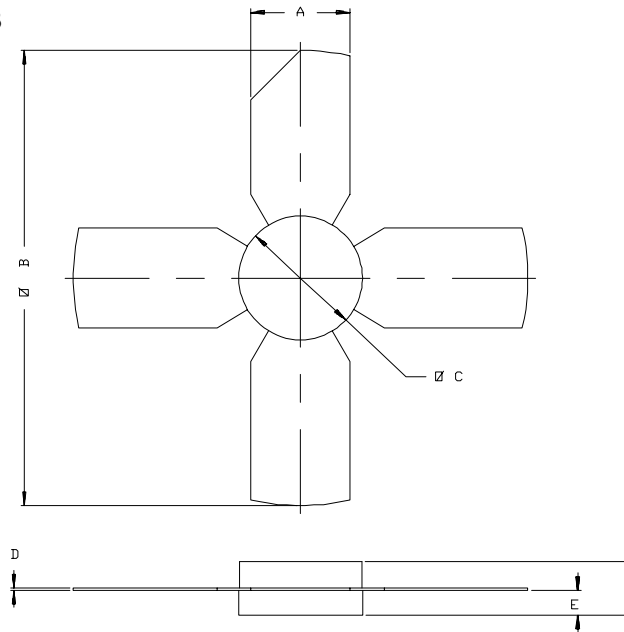

  
**TYPICAL INPUT IMPEDANCE**


  
**TYPICAL COLLECTOR LOAD IMPEDANCE**

P<sub>OUT</sub> = 2.5W  
 V<sub>CE</sub> = 7.5V

## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0123



| SGS-THOMSON MICROELECTRONICS |                      |                      |
|------------------------------|----------------------|----------------------|
|                              | MINIMUM<br>Inches/mm | MAXIMUM<br>Inches/mm |
| A                            | .220/5,59            | .230/5,84            |
| B                            | -----                | 1.055/26,8           |
| C                            | .275/6,99            | .285/7,24            |
| D                            | .004/0,10            | .006/0,15            |
| E                            | .050/1,27            | .060/1,52            |
| F                            | .118/3,00            | .130/3,30            |
|                              |                      |                      |

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