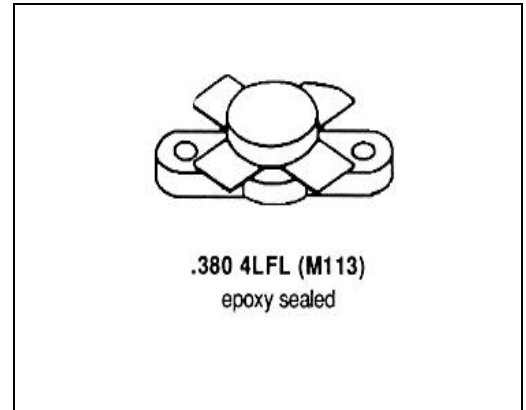


**SD1013-03**

## RF & MICROWAVE TRANSISTORS VHF APPLICATIONS

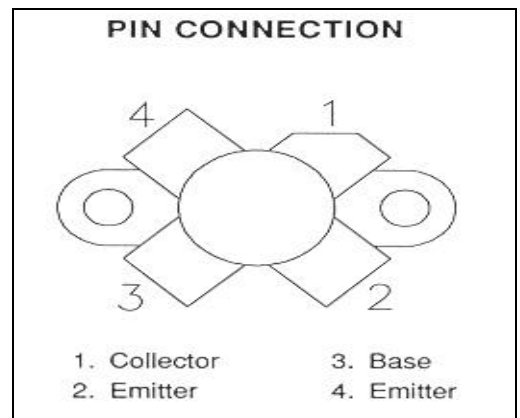
### Features

- 150 MHz
- 28 VOLTS
- $P_{OUT} = 10$  WATTS
- $G_P = 10$  dB MINIMUM
- $\eta = 50\%$
- COMMON EMITTER CONFIGURATION



### DESCRIPTION:

The SD1013-03 is a 28V epitaxial silicon NPN planar transistor designed primarily for FM communications. This device utilizes emitter ballasting for improved ruggedness and reliability.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage	65	V
$V_{CEO}$	Collector-emitter Voltage	35	V
$V_{EBO}$	Emitter-Base Voltage	4.0	V
$I_C$	Device Current	1.0	A
$P_{DISS}$	Power Dissipation	13	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	13.5	°C/W
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**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)**
**STATIC**

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 200 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>65</b>	---	---	<b>V</b>
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 200 mA</b>	<b>V<sub>BE</sub> = 0 V</b>	<b>65</b>	---	---	<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 200 mA</b>	<b>I<sub>B</sub> = 0 mA</b>	<b>35</b>	---	---	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 10 mA</b>	<b>I<sub>C</sub> = 0 mA</b>	<b>4.0</b>	---	---	<b>V</b>
<b>I<sub>CBO</sub></b>	<b>V<sub>CB</sub> = 30 V</b>	<b>I<sub>E</sub> = 0 mA</b>	---	---	<b>1.0</b>	<b>mA</b>
<b>H<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 200 mA</b>	<b>10</b>	---	<b>200</b>	---

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 150 MHz</b>	<b>P<sub>IN</sub> = 1.0W</b>	<b>V<sub>CE</sub> = 28V</b>	<b>10</b>	---	---	<b>W</b>
<b>G<sub>p</sub></b>	<b>f = 150 MHz</b>	<b>P<sub>IN</sub> = 1.0W</b>	<b>V<sub>CE</sub> = 28V</b>	<b>10</b>	---	---	<b>dB</b>
<b>C<sub>OB</sub></b>	<b>f = 1 MHz</b>	<b>V<sub>CB</sub> = 30V</b>		---	---	<b>15</b>	<b>pF</b>

**IMPEDANCE DATA**

FREQ	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
<b>150 MHz</b>	<b>3.0 + j0.5</b>	<b>31 + j19</b>

**P<sub>IN</sub> = 1.0W**  
**V<sub>CC</sub> = 28V**

**SD1013-03**

**PACKAGE MECHANICAL DATA**

