

SD1013

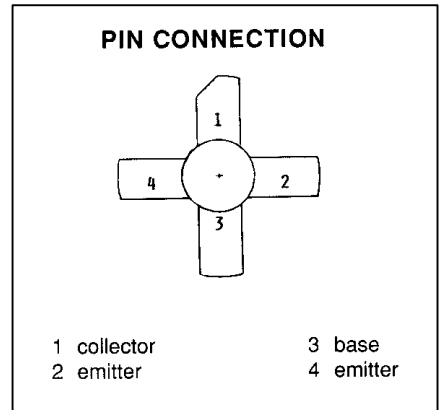
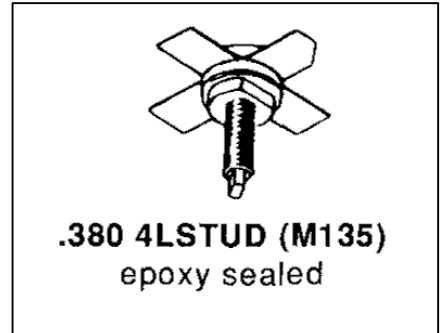
**RF & MICROWAVE TRANSISTORS**  
**VHF FM MOBILE APPLICATIONS**

**Features**

- 150 MHz
- 28 VOLTS
- P<sub>OUT</sub> = 10 WATTS
- G<sub>p</sub> = 10 dB MINIMUM
- COMMON EMITTER CONFIGURATION

**DESCRIPTION:**

The SD1013 is an epitaxial silicon NPN planar transistor designed primarily for VHF FM applications. The device utilizes emitter ballasting resistors and improved metallization systems 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	65	V
V <sub>CEO</sub>	Collector-Emitter Voltage	35	V
V <sub>CES</sub>	Collector-Base Voltage	65	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Device Current	1.0	A
P <sub>DISS</sub>	Power Dissipation	13	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>	Thermal Resistance Junction-case	13.5	°C/W
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**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25 °C)**
**STATIC**

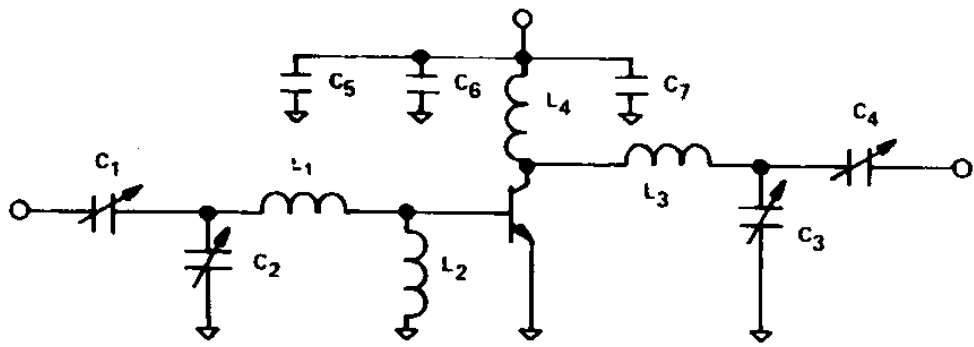
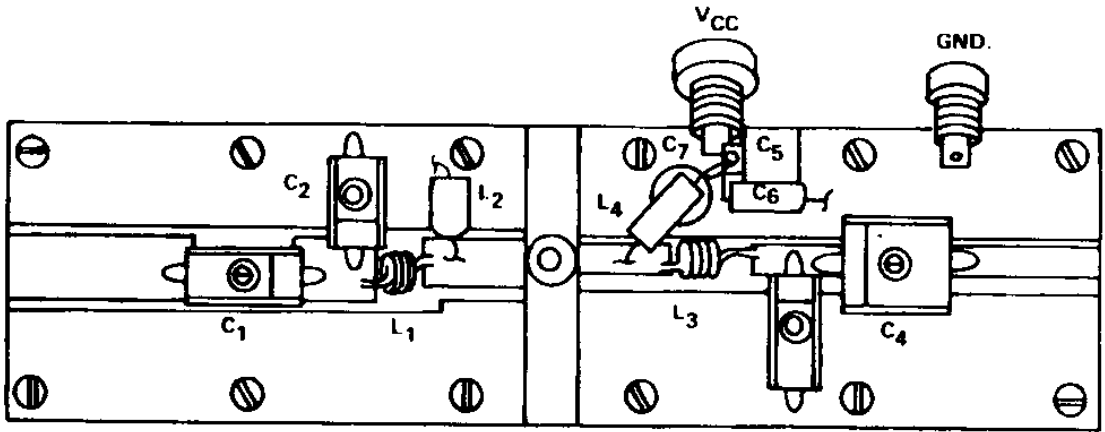
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 200 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>65</b>	---	---	<b>V</b>
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 200 mA</b>	<b>V<sub>BE</sub> = 0 V</b>	<b>65</b>	---	---	<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<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>HFE</b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 200 mA</b>	<b>5</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> = 1.0 W</b>	<b>V<sub>CC</sub> = 28 V</b>	<b>10</b>	---	---	<b>W</b>
<b>G<sub>P</sub></b>	<b>f = 150 MHz</b>	<b>P<sub>IN</sub> = 1.0 W</b>	<b>V<sub>CC</sub> = 28 V</b>	<b>10</b>	---	---	<b>dB</b>
<b>C<sub>OB</sub></b>	<b>f = 1 MHz</b>	<b>V<sub>CB</sub> = 30 V</b>		---	---	<b>15</b>	<b>pF</b>

**Note:** When used at 13.5 Volts, performances are:  
**P<sub>OUT</sub> = 3.5 Watt typical**  
**G<sub>P</sub> = 10.5 dB typical**

TEST CIRCUIT



- C1,C2 : ARCO 422
- C3 : ARCO 421
- C4 : ARCO 464
- C5 : 1000pF UNELCO
- C6 : 10μF Electrolytic 35V

- C7 : .01pF Ceramic Disc
- L1 : 3Turns #22, 1/8" I.D.
- L2 : RFC Ferroxcube
- L3 : 3 Turns #18, 1/4" I.D
- L4 : .47μH Molded Choke

**PACKAGE MECHANICAL DATA**

