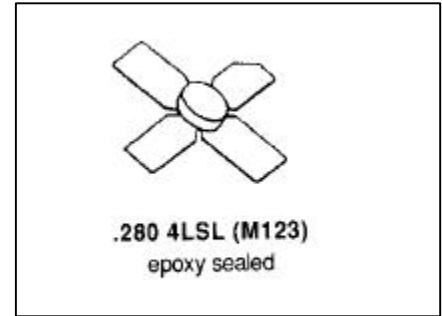


MS1401

**RF AND MICROWAVE TRANSISTORS  
VHF PORTABLE/MOBILE APPLICATIONS**

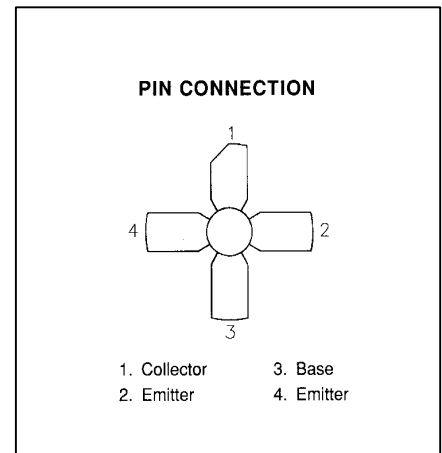
**Features**

- **150 MHz**
- **7.5 Volts**
- **Common Emitter**
- **P<sub>OUT</sub> = 2.5 W Min.**
- **G<sub>P</sub> = 11.0 dB Gain**



**DESCRIPTION:**

The MS1401 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
<b>V<sub>CBO</sub></b>	<b>Collector-Base Voltage</b>	<b>36</b>	<b>V</b>
<b>V<sub>CER</sub></b>	<b>Collector-Emitter Voltage</b>	<b>16</b>	<b>V</b>
<b>V<sub>CES</sub></b>	<b>Collector-Emitter Voltage</b>	<b>36</b>	<b>V</b>
<b>V<sub>EBO</sub></b>	<b>Emitter-Base Voltage</b>	<b>4.0</b>	<b>V</b>
<b>I<sub>C</sub></b>	<b>Device Current</b>	<b>1.7</b>	<b>A</b>
<b>P<sub>DISS</sub></b>	<b>Power Dissipation</b>	<b>15</b>	<b>W</b>
<b>T<sub>J</sub></b>	<b>Junction Temperature</b>	<b>+200</b>	<b>°C</b>
<b>T<sub>STG</sub></b>	<b>Storage Temperature</b>	<b>-65 to +150</b>	<b>°C</b>

**Thermal Data**

<b>R<sub>TH(j-c)</sub></b>	<b>Junction-Case Thermal Resistance</b>	<b>11.6</b>	<b>°C/W</b>
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**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)**
**STATIC**

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 10 mA    V<sub>BE</sub> = 0 V</b>	<b>36</b>			<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 50 mA    I<sub>B</sub> = 0 mA</b>	<b>16</b>			<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 2 mA    I<sub>C</sub> = 0 mA</b>	<b>4.0</b>			<b>V</b>
<b>I<sub>CER</sub></b>	<b>V<sub>CE</sub> = 10 V    R<sub>BE</sub> = 50 Ω</b>			<b>0.5</b>	<b>mA</b>
<b>I<sub>CBO</sub></b>	<b>V<sub>CB</sub> = 15 V    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    I<sub>C</sub> = 200 mA</b>	<b>20</b>		<b>100</b>	<b>—</b>

**DYNAMIC**

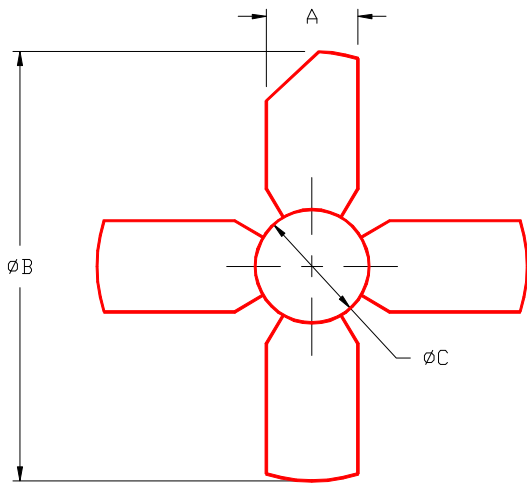
Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 150 MHz    V<sub>CC</sub> = 7.5 V</b>	<b>2.5</b>			<b>W</b>
<b>G<sub>P</sub></b>	<b>f = 150 MHz    V<sub>CC</sub> = 7.5 V</b>	<b>11</b>			<b>Db</b>
<b>C<sub>OB</sub></b>	<b>f = 150 MHz    V<sub>CB</sub> = 7.5 V</b>			<b>23</b>	<b>PF</b>

**IMPEDANCE DATA**

Freq.	Z <sub>IN</sub> (Ω)	Z <sub>L</sub> (Ω)
<b>150 MHz</b>	<b>2.2 – j 0.4</b>	<b>7.9 + j 8.4</b>
<b>160 MHz</b>	<b>1.9 – j 0.8</b>	<b>7.6 + j 8.2</b>
<b>170 MHz</b>	<b>1.0 – j 1.0</b>	<b>6.0 + j 8.3</b>

**PACKAGE MECHANICAL DATA**

PACKAGE STYLE M123



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM 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			

