**GENERAL DESCRIPTION**

The TAN150 is a high powered COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 960-1215 MHz. The device has gold thin-film metallization and diffused ballasting for proven highest MTTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.

**ABSOLUTE MAXIMUM RATINGS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Characteristics</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&lt;sub&gt;out&lt;/sub&gt;</td>
<td>Power Out</td>
<td>F = 960-1215 MHz</td>
<td>150</td>
<td></td>
<td></td>
<td>W</td>
</tr>
<tr>
<td>P&lt;sub&gt;i&lt;/sub&gt;</td>
<td>Power Input</td>
<td>V&lt;sub&gt;cc&lt;/sub&gt; = 50 Volts</td>
<td></td>
<td>30</td>
<td></td>
<td>W</td>
</tr>
<tr>
<td>P&lt;sub&gt;g&lt;/sub&gt;</td>
<td>Power Gain</td>
<td>PW = 20 µsec</td>
<td>7.0</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>η&lt;sub&gt;c&lt;/sub&gt;</td>
<td>Collector Efficiency</td>
<td>DF = 5%</td>
<td>38</td>
<td></td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>V&lt;sub&gt;SWR&lt;/sub&gt;</td>
<td>Load Mismatch Tolerance</td>
<td>F = 1090 MHz</td>
<td>10:1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ELECTRICAL CHARACTERISTICS @ 25°C**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Characteristics</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BV&lt;sub&gt;ebo&lt;/sub&gt;</td>
<td>Emitter to Base Breakdown</td>
<td>Ie = 10 mA</td>
<td>3.5</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>BV&lt;sub&gt;ces&lt;/sub&gt;</td>
<td>Collector to Emitter Breakdown</td>
<td>Ic = 50 mA</td>
<td>55</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>h&lt;sub&gt;FE&lt;/sub&gt;</td>
<td>DC – Current Gain</td>
<td>V&lt;sub&gt;ce&lt;/sub&gt; = 5V, Ic = 1 A</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>θ&lt;sub&gt;jc&lt;/sub&gt;</td>
<td>Thermal Resistance</td>
<td></td>
<td>0.3</td>
<td></td>
<td></td>
<td>°C/W</td>
</tr>
</tbody>
</table>

**NOTE 1:** At rated output power and pulse conditions

Rev A: Updated June 2009
TAN150 TEST CIRCUIT:

---

**DIMENSIONS**

- **A** = 0.185
- **B** = 0.175
- **C** = 0.205
- **D** = 0.253
- **E** = 0.250
- **F** = 0.275
- **G** = 0.300
- **H** = 0.190
- **I** = 0.260
- **J** = 0.275
- **K** = 0.290
- **L** = 0.550
- **M** = 0.750
- **N** = 0.255
- **O** = 0.138
- **P** = 0.400
- **Q** = 0.180
- **R** = 0.535
- **S** = 0.750
- **T** = 0.330
- **U** = 0.000
- **V** = 0.000

**DESCRIPTION**

- **C1, C2** = 0.3–3.5μH VARIABLE JOHNSON
- **C3, C4** = 0.5–6.0μH VARIABLE JOHNSON
- **C5** = 47μF
- **C6** = 1000μF @ 75V
- **C7** = 100μF
- **R1** = 27K
- **L1** = 21 AWG, Length = 1.0”
- **L2** = 21 AWG, 5 Turn, LG. = 0.100”

---

**SCALE** 1/1

---

**DATE**

**APPROVED**

---

MICROSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE. MICROSEMI RECOMMENDS THAT BEFORE THE PRODUCT(S) DESCRIBED HEREIN ARE WRITTEN INTO SPECIFICATIONS, OR USED IN CRITICAL APPLICATIONS, THAT THE PERFORMANCE CHARACTERISTICS BE VERIFIED BY CONTACTING THE FACTORY.

Microsemi: 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120