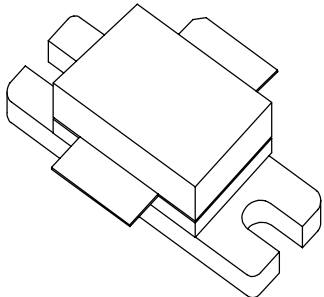


ITC1000

1000 WATT, 50V, Pulsed Avionics 1030 MHz

| | |
|--|---|
| <p>GENERAL DESCRIPTION</p> <p>The ITC1000 is a common base bipolar transistor. It is designed for pulsed interrogator systems in the frequency band of 1030 MHz. The device has gold thin-film metallization for proven high MTF. The transistor includes input returns for improved output rise time. Low thermal resistance package reduces junction temperature which extends the life time of the product.</p> | <p>CASE OUTLINE 55SW, Style 1 Common Base</p>  |
| <p>ABSOLUTE MAXIMUM RATINGS</p> <p>Power Dissipation</p> <p>Device Dissipation¹ @25°C (P_d) 3400 W Thermal Resistance¹ (θ_{JC}) .08°C/W</p> <p>Voltage and Current</p> <p>Collector-Base Voltage 65V Emitter-Base Voltage 3.5V Collector Current¹ 80A</p> <p>Temperatures</p> <p>Storage Temperature -40 to +150°C Operating Junction Temperature¹ +200°C</p> | |

ELECTRICAL CHARACTERISTICS @ 25°C

| SYMBOL | CHARACTERISTICS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|------------------------------|--------------------------------------|---|-----|-----|-----|-------|
| BVebo ² | Emitter-Base Breakdown(open) | I _e =50mA | 3.5 | | | V |
| BVces | Collector-Emitter Breakdown(shorted) | I _c =30mA | 65 | | | V |
| BVceo ² | Collector-Emitter Breakdown (open) | I _c =30mA | 30 | | | V |
| h _{FE} ² | DC Current Gain | I _c =5A, V _{ce} =5V | 20 | 45 | 80 | β |

FUNCTIONAL CHARACTERISTICS @ 25°C

| | | | | | | |
|------------------|--|---|----------|-----|-----|----|
| G _{PB} | Common Base Power Gain | V _{cc} = 50V, F = 1030MHz, P _{out} =1000W, PW=1μS, DF=1% | 8.0 | 8.5 | | dB |
| η _c | Collector Efficiency | V _{cc} = 50V, F = 1030MHz, P _{out} =1000W, PW=1μS, DF=1% | 35 | 45 | | % |
| t _r | Rise Time | V _{cc} = 50V, F = 1030MHz, P _{out} =1000W, PW=1μS, DF=1% | | 50 | 80 | nS |
| VSWR | Output Load Mismatch | V _{cc} = 50V, F = 1030MHz, P _{out} =1000W, PW=1μS, DF=1% | | | 4:1 | Ψ |
| Z _{in} | Series Input Impedance (Circuit source impedance @ test cond.) | V _{cc} = 50V, F = 1030MHz, P _{out} =1000W, PW=1μS, DF=1% | 1.0-j2.0 | | | Ω |
| Z _{out} | Series Output Impedance (Circuit load impedance @ test cond.) | V _{cc} = 50V, F = 1030MHz, P _{out} =1000W, PW=1μS, DF=1% | 0.6-j2.1 | | | Ω |

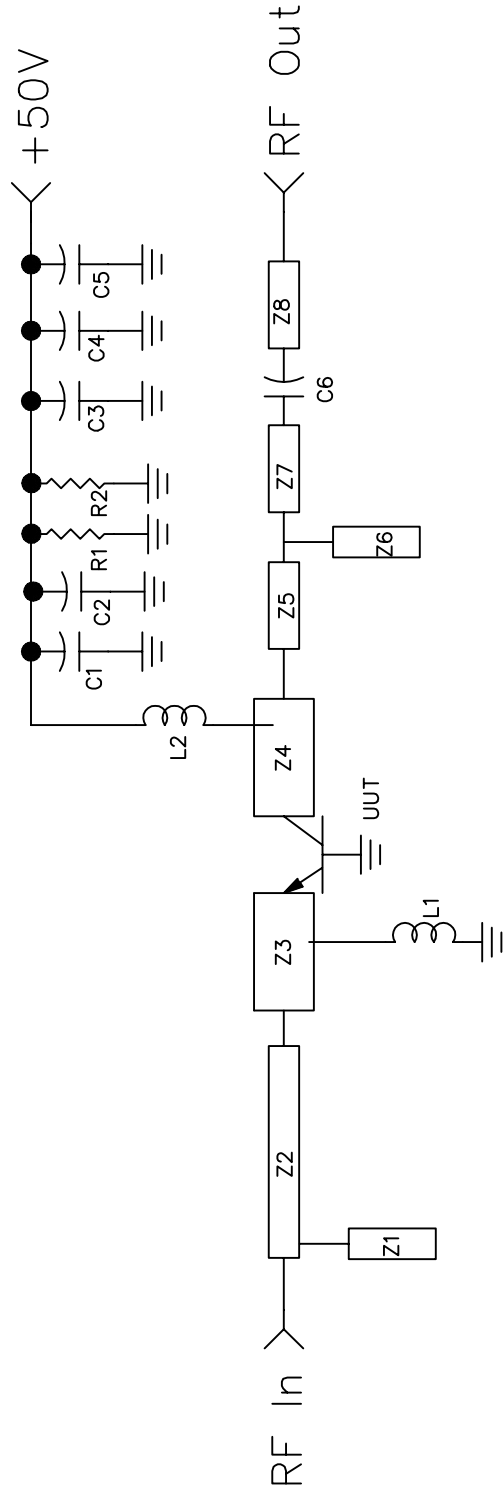
¹ At rated output power and pulse conditions

² Contains input returns and cannot be measured

Initial Issue May 1999

| ZONE | REV | DESCRIPTION | DATE | APPROVED |
|------|-----|-------------|------|----------|
|------|-----|-------------|------|----------|

Test Fixture Schematic For The ITC1000



Z1- Z8 See PCB Autocad Drawing ITC1000pcb_rev4.dwg

- L1 1/2 Turn 18 Awg, .335 ID, 1.4" long
- L1 0.100" x 0.150" x 0.005" copper strip
- C1 30pF ATC 100B
- C2 62pF ATC 100B
- C3 1000 uF, 63V
- C4 470 uF, 63V
- C5 330 uF, 63V
- C6 56 pF, ATC100B
- R1, R2 10K, 1/4W, 1206

MECHANICAL DWG OF FIXTURE LAYOUT AVAILABLE UPON REQUEST



| | | |
|---------------|---|----------|
| CAGE 0PJR2 | DWG NO. ITC1000 Test Fixture Schematic | REV 1 |
| SCALE n/a | SHEET | |