

## ITC1000

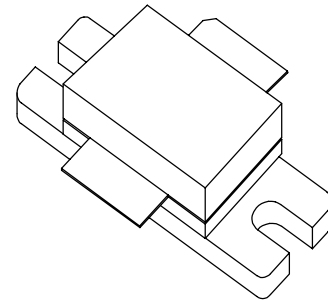
### 1000 WATT, 50V, Pulsed Avionics 1030 MHz

#### GENERAL DESCRIPTION

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.

#### CASE OUTLINE

##### 55SW, Style 1 Common Base



#### ABSOLUTE MAXIMUM RATINGS

##### Power Dissipation

Device Dissipation<sup>1</sup> @25°C (P<sub>d</sub>)                      3400 W  
Thermal Resistance<sup>1</sup> (θ<sub>JC</sub>)                                .08°C/W

##### Voltage and Current

Collector-Base Voltage                                      65V  
Emitter-Base Voltage                                        3.5V  
Collector Current<sup>1</sup>    80A

##### Temperatures

Storage Temperature                                        -40 to +150°C  
Operating Junction Temperature<sup>1</sup>                        +200°C

#### ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV <sub>ebo</sub> <sup>2</sup>	Emitter-Base Breakdown(open)	I <sub>e</sub> =50mA	3.5			V
BV <sub>ces</sub>	Collector-Emitter Breakdown(shorted)	I <sub>c</sub> =30mA	65			V
BV <sub>ceo</sub> <sup>2</sup>	Collector-Emitter Breakdown (open)	I <sub>c</sub> =30mA	30			V
h <sub>FE</sub> <sup>2</sup>	DC Current Gain	I <sub>c</sub> =5A, V <sub>ce</sub> =5V	20	45	80	β

#### FUNCTIONAL CHARACTERISTICS @ 25°C

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

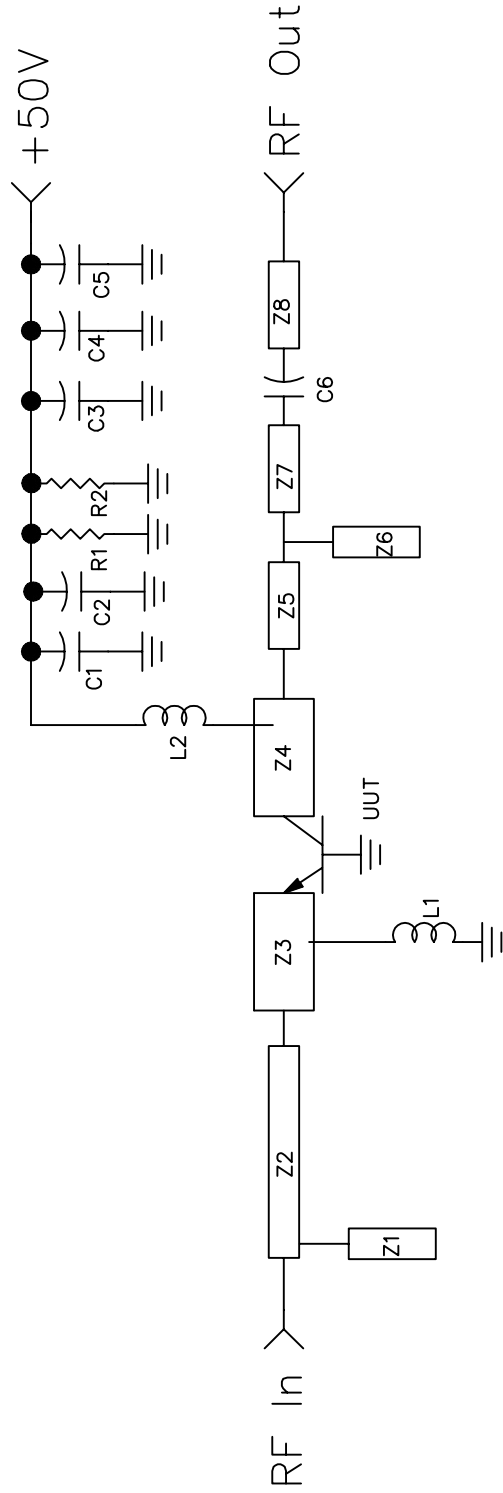
<sup>1</sup> At rated output power and pulse conditions

<sup>2</sup> Contains input returns and cannot be measured

Initial Issue May 1999

ZONE	REV	DESCRIPTION	DATE	APPROVED
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# 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	