

ITC1000 1000 WATT, 50V, Pulsed Avionics 1030 MHz

GENERAL DESCRIPTION CASE OUTLINE 55SW, Style 1 The ITC1000 is a common base bipolar transistor. It is designed for pulsed **Common Base** interrogator systems in the frequency band of 1030 MHz. The device has gold thin-film metallization for proven high MTTF. 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. **ABSOLUTE MAXIMUM RATINGS Power Dissipation** Device Dissipation¹ @25°C (P_d) 3400 W Thermal Resistance¹ (θ_{IC}) .08°C/W Voltage and Current Collector-Base Voltage 65V Emitter-Base Voltage 3.5V Collector Current¹ 80A **Temperatures** Storage Temperature -40 to +150°C Operating Junction Temperature¹ +200°C

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	ТҮР	MAX	UNITS
BVebo ²	Emitter-Base Breakdown(open)	Ie=50mA	3.5			V
BVces	Collector-Emitter Breakdown(shorted)	Ic=30mA	65			V
BVceo ²	Collector-Emitter Breakdown (open)	Ic=30mA	30			V
${\rm h_{FE}}^2$	DC Current Gain	Ic=5A, Vce=5V	20	45	80	β

FUNCTIONAL CHARACTERISTICS @ 25°C

G_{PB}	Common Base Power Gain	$V_{cc} = 50V, F = 1030MHz, P_{out}=1000W,$ $PW=1\mu S, DF=1\%$	8.0	8.5		dB		
$\eta_{\rm c}$	Collector Efficiency	$\label{eq:Vcc} \begin{split} V_{cc} = 50V, F = 1030MHz, P_{out} = 1000W, \\ PW = 1\mu S, DF = 1\% \end{split}$	35	45		%		
t _r	Rise Time	$\label{eq:Vcc} \begin{split} V_{cc} = 50V, \ F = 1030MHz, \ P_{out} = 1000W, \\ PW = 1\mu S, \ DF = 1\% \end{split}$		50	80	nS		
VSWR	Output Load Mismatch	ttput Load Mismatch $V_{cc} = 50V, F = 1030MHz, P_{out}=1000W, PW=1\mu S, DF=1\%$						
Z _{in}	Series Input Impedance (Circuit source impedance @ test cond.)	$\label{eq:Vcc} \begin{split} V_{cc} = 50V, \ F = 1030MHz, \ P_{out} = 1000W, \\ PW = 1\mu S, \ DF = 1\% \end{split}$		1.0-j2.0)	Ω		
Z _{out}	Series Output Impedance (Circuit load impedance @ test cond.)	$\label{eq:Vcc} \begin{split} V_{cc} = 50V, \ F = 1030MHz, \ P_{out} = 1000W, \\ PW = 1\mu S, \ DF = 1\% \end{split}$	0.6-j2.1			Ω		

¹ At rated output power and pulse conditions

² Contains input returns and cannot be measured

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Test Fixture Schematic For The ITC1000 Test Fixture Schematic For The ITC1000 RF In RF In 21-28 See PGB Autocod Browing ICt000bcb-rev4.dwg 21-28 See PGB Autocod Browing ICt000bcb-rev4.dwg 22-28 See PGB Autocod Browing ICt000bcb-rev4.dwg 23-28 See PGB Autocod Browing ICt000bcb-rev4.dwg	ZONE	REV (DESC	CRIPTIC		ONS						DA	TE		AP	PRO'	VED		-
			$- T_{0,1} + E_{1,1} + C_{1,1} + C_$	I EST FIXIULE SCHEMATIC FOR THE FILLIUU			$c_1 c_2 r_1 r_2 c_3 c_4 c_5$			$RF \ln \rightarrow \frac{z^2}{z^2} \sqrt{z^4} \sqrt{z^4} \sqrt{z^5} \sqrt{z^2} \sqrt{z^2} \sqrt{z^6} $				71- 78 See PCB Autocad Drawing ITC1000ncb rev4.dwa		L1 1/2 lurn 18 Awg, .335 lD, 1.4" long L1 0100" × 0150" × 0.005" conner strip	C1 30pF ATC 100B	C2 62pF ATC 100B	C3 1000 uF, 63V	C4 4/0 uF, 63V C5 330 uF, 63V	26 56 pF, ATC100B	R1, R2 10K, 1/4W, 1206	MECHANICAL DWG DF FIXTURE LAYDUT AVAILABLE UPDN REQUEST	
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