



ITC1100

1000 WATT, 50V, Pulsed

Avionics 1030 MHz

GENERAL DESCRIPTION

The **ITC1100** 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 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 Dissipation ¹ @25°C (P_d)	3400 W
Thermal Resistance ¹ (θ_{JC})	.08°C/W

Voltage and Current

Collector-Base Voltage	65V
Emitter-Base Voltage	3.5V
Collector Current ¹	80A

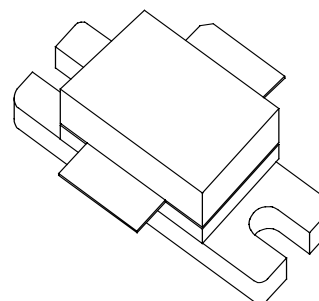
Temperatures

Storage Temperature	-40 to +150°C
Operating Junction Temperature ¹	+200°C

CASE OUTLINE

55SW, Style 1

Common Base



ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV_{EBO}^2	Emitter-Base Breakdown(open)	$I_e=50mA$	3.5			V
BV_{CES}	Collector-Emitter Breakdown(shorted)	$I_c=30mA$	65			V
BV_{CEO}^2	Collector-Emitter Breakdown (open)	$I_c=30mA$	30			V
h_{FE}^2	DC Current Gain	$I_c=5A, V_{ce}=5V$	20		100	β

FUNCTIONAL CHARACTERISTICS @ 25°C

G_{PB}	Common Base Power Gain	$V_{cc} = 50V, F = 1030MHz,$ $P_{out}=1000W$ Peak Min, $PW=1\mu S, DF=1\%$	10	10.5		dB
η_c	Collector Efficiency	$V_{cc} = 50V, F = 1030MHz,$ $P_{out}=1000W$ Peak Min, $PW=1\mu S, DF=1\%$	45	50		%
t_r	Rise Time	$V_{cc} = 50V, F = 1030MHz,$ $P_{out}=1000W$ Peak Min, $PW=1\mu S, DF=1\%$		50	80	nS
VSWR	Output Load Mismatch	$V_{cc} = 50V, F = 1030MHz,$ $P_{out}=1000W$ Peak Min, $PW=1\mu S, DF=1\%$			4:1	Ψ
Z_{in}	Series Input Impedance (Circuit source impedance @ test cond.)	$V_{cc} = 50V, F = 1030MHz,$ $P_{out}=1000W$ Peak Min, $PW=1\mu S, DF=1\%$	0.89 – j2.3			Ω
Z_{out}	Series Output Impedance (Circuit load impedance @ test cond.)	$V_{cc} = 50V, F = 1030MHz,$ $P_{out}=1000W$ Peak Min, $PW=1\mu S, DF=1\%$	0.54 - j2.64			Ω

¹ At rated output power and pulse conditions

² Not measurable due to EB Returns