GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

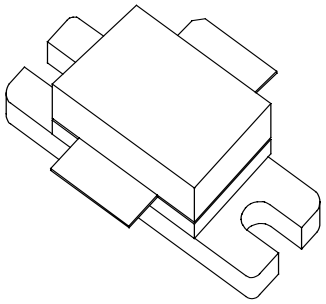
ITC1100

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.

CASE OUTLINE
55SW, Style 1
Common Base



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

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	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
h_{FE}[2]	DC Current Gain	Ic=5A, Vce=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=1μS, DF=1%	10	10.5		dB
η_c	Collector Efficiency	V_{cc} = 50V, F = 1030MHz, P_{out}=1000W Peak Min, PW=1μS, DF=1%	45	50		%
t_r	Rise Time	V_{cc} = 50V, F = 1030MHz, P_{out}=1000W Peak Min, PW=1μS, DF=1%		50	80	nS
VSWR	Output Load Mismatch	V_{cc} = 50V, F = 1030MHz, P_{out}=1000W Peak Min, 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 Peak Min, PW=1μS, 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=1μS, DF=1%	0.54 - j2.64			Ω

[1] At rated output power and pulse conditions
[2] Not measurable due to EB Returns

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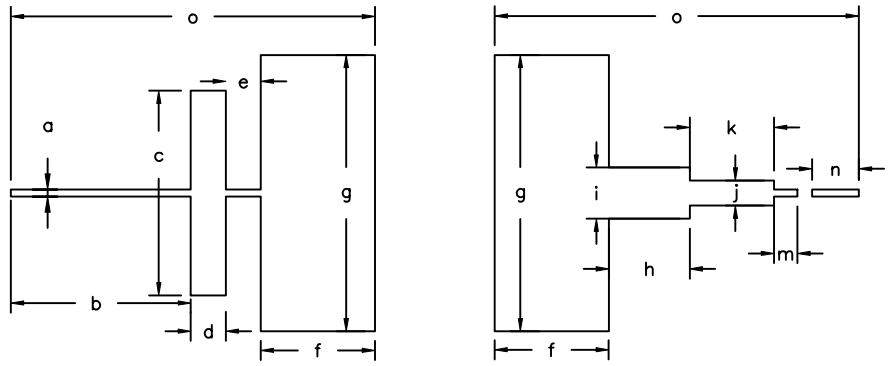
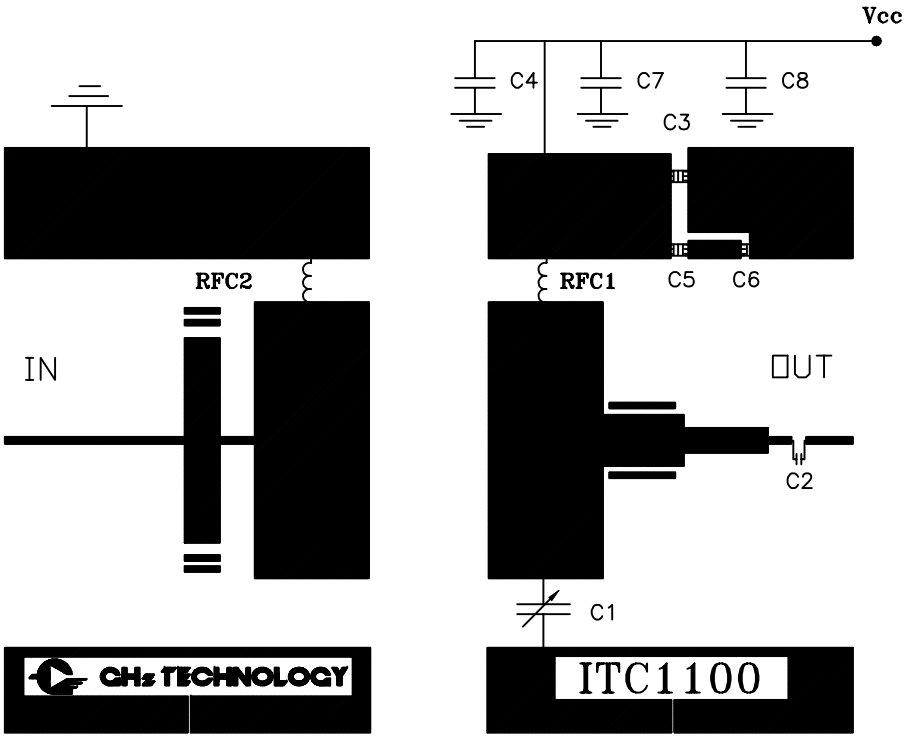
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

NOTES, UNLESS OTHERWISE SPECIFIED:

1. ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE "APPROVED SUPPLIER LIST", IS APPROVED FOR USE IN THE APPLICATION SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR TESTING AND APPROVAL BY GHz.





DIM	INCHES
a	.024
b	.615
c	.700
d	.120
e	.120
f	.390
g	.945
h	.277
i	.175
j	.086
k	.288
m	.080
n	.160
o	1.245

RFC1= 3T, 0.11" DIA, 16 AWG WIRE

RFC2= .075"HAIR PIN, 0.2" HEIGHT, 16 AWG WIRE

C1= 0– 3.5 pf JOHANSON TRIMING CAPACITOR

C2, C3= 68 pf ATC

C4= 1.0 Uf, 50 V

C5, C6= 4.7 uF, 50 V

C7,C8= 1000 uF, 63 V ELECTROLYTIC CAPACITOR

Vcc = 50 V

NEXT ASSY	USED ON
APPLICATION	

TOLERANCES
UNLESS OTHERWISE SPECIFIED
DECIMALS
.XX ±.01
.XXX ±.005
.XXXX ±.001
ANGLES ±5°

MATERIAL:
Duroild
Er = 10.2
H = 25 mils
T = 1.0 Oz

APPROVALS SIGNATURES	DATE
ORIGINATOR	
CHECKED	
APPROVED	
APPLICATION ENG.	
PRODUCT ENG.	
MANUFACTURING	
QA	
MARKETING	
SALES	

GHz TECHNOLOGY
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ITC1100

SIZE	CAGE CODE	DOC/PART NO.	REV
A	0PJR2	ITC1100	1

SCALE: N/A FILE: ITC1100 SHEET: 6 OF 6