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GHz TECHNOLOGY
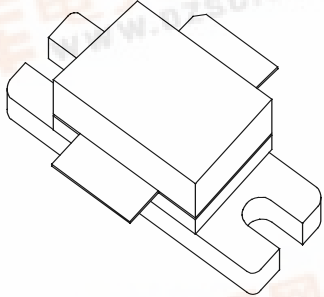RF·MICROWAVE SILICON POWER TRANSISTORS

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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NOTES, UNLESS OTHERWISE SPECIFIED:

1. ONLY THE ITEM DESCRIBED ON THIS DRAWING IS 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.

IN

RFC2

CH₂ TECHNOLOGY

ITC1100

C1

IN

OUT

C2

RFC1

C4

C7

C3

C5 C6

C8

Vcc

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

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

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

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

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

NEXT ASSY	USED ON
APPLICATION	

CH₂ TECHNOLOGY
3000 OAKMEAD VILLAGE DRIVE
SANTA CLARA, CA 95051-0808

CAGE CODE	OPJR2
DOC/PART NO.	ITC1100
SIZE	A
SCALE: N/A	FILE: ITC1100

ITC1100

SHEET: 6 OF 6

LTR	DESCRIPTION	DATE	APPROVE

REVISIONS