



JTDB 75

75 Watts, 36 Volts, Pulsed
Avionics 960 - 1215 MHz

GENERAL DESCRIPTION

The JTDB 75 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 960-1215 MHz. The device has gold thin-film metallization and diffused ballasting for proven highest MTTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C² 220 Watts

Maximum Voltage and Current

BVces Collector to Base Voltage 55 Volts

BVebo Emitter to Base Voltage 3.5 Volts

Ic Collector Current 8.0 Amps

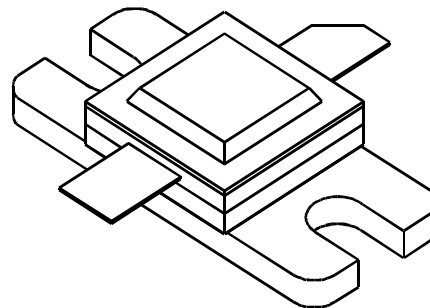
Maximum Temperatures

Storage Temperature - 65 to + 200°C

Operating Junction Temperature + 200°C

CASE OUTLINE

55AW, STYLE 1



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Out	F = 960-1215 MHz	75			Watts
P _{in}	Power Input	V _{cc} = 36 Volts			15	Watts
P _g	Power Gain	PW = 10 μsec	7.0	7.5		dB
η _c	Collector Efficiency	DF = 40%		40		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			3:1	

BVebo	Emitter to Base Breakdown	I _e = 30mA	3.5			Volts
BVces	Collector to Emitter Breakdown	I _c = 30 mA	55			Volts
h _{FE}	DC - Current Gain	I _c = 25 mA, V _{ce} = 5 V	10			
θ _{jc} ²	Thermal Resistance				0.8	°C/W

Note 1: At rated output power and pulse conditions

2: At rated pulse conditions

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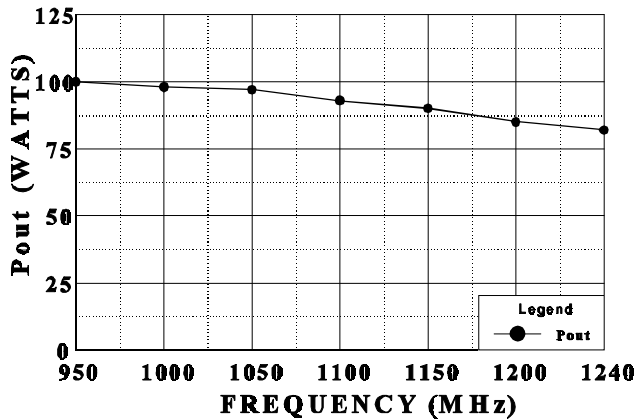
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GHZ Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

All Data shown is for operation under the rated pulse conditions.

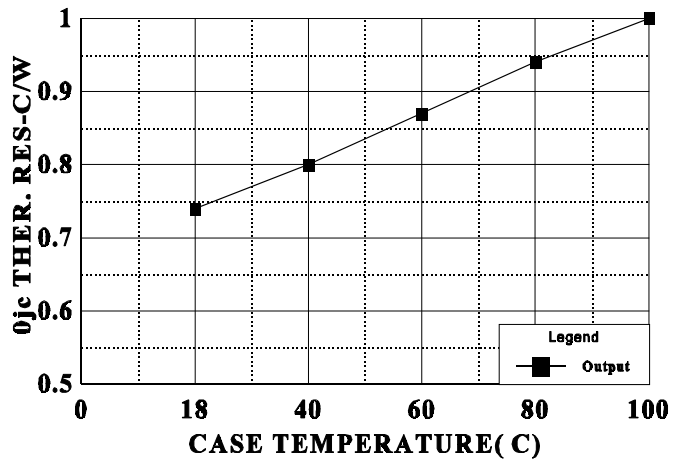
POWER OUTPUT vs FREQUENCY

Vcc = 36 V, Pin = 15 W



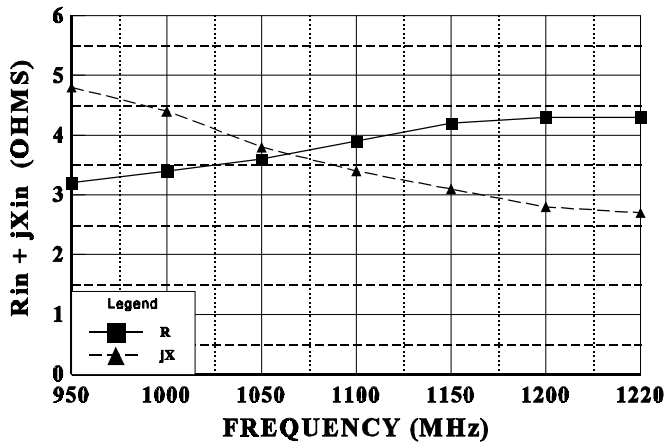
THERMAL RESISTANCE vs CASE TEMP.

Vcc = 36V, Po = 75 W



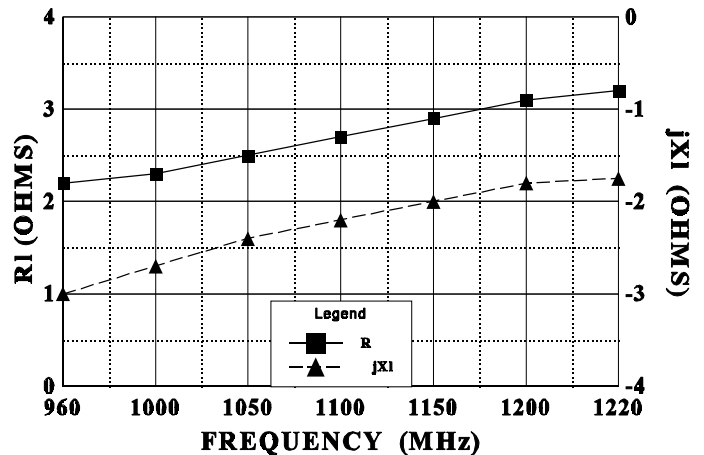
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 36 V, Pin = 13W Peak



SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 36 V, Pin = 13 W Peak



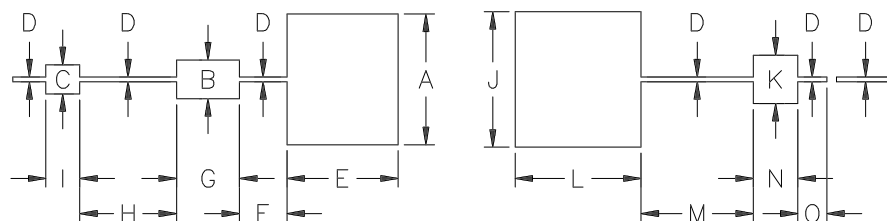
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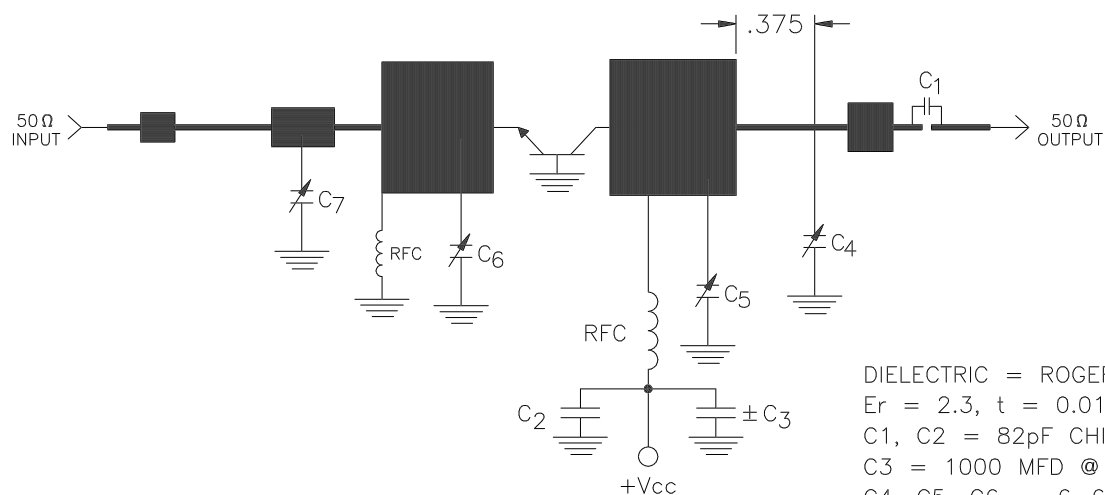
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.675
B	.200
C	.150
D	.028
E	.575
F	.245
G	.325
H	.500
I	.175
J	.700
K	.250
L	.650
M	.580
N	.230
O	.150

JTDB 75 TEST CIRCUIT



DIELECTRIC = ROGERS DUROID
 $E_r = 2.3$, $t = 0.010"$
 $C_1, C_2 = 82\text{pF}$ CHIP ATC "A"
 $C_3 = 1000\text{ MFD @ }50\text{V}$
 $C_4, C_5, C_6 = .6\text{--}6.5\text{Pf}$ Johanson
 $C_7 = 0.3\text{--}3.5\text{Pf}$ Johanson
 $\text{RFC} = 5\text{ turns \#22 wire }1/16"$ I.D.



CHz TECHNOLOGY

CAGE
OPJR2

DWG NO.

JTDB 75

REV
A

SCALE

1/1

SHEET