GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

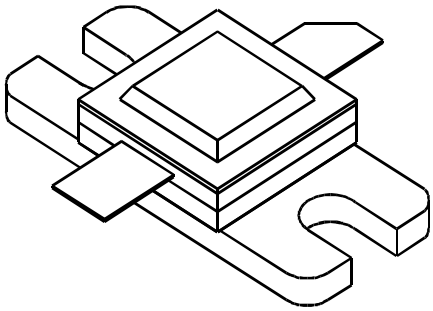
JTDB 75

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.

CASE OUTLINE
55AW, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C[2]	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

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 960-1215 MHz	75			Watts
Pin	Power Input	Vcc = 36 Volts			15	Watts
Pg	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	Ie = 30mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ic = 30 mA	55			Volts
$\mathbf{h_{FE}}$	DC - Current Gain	Ic = 25 mA, Vce = 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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GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

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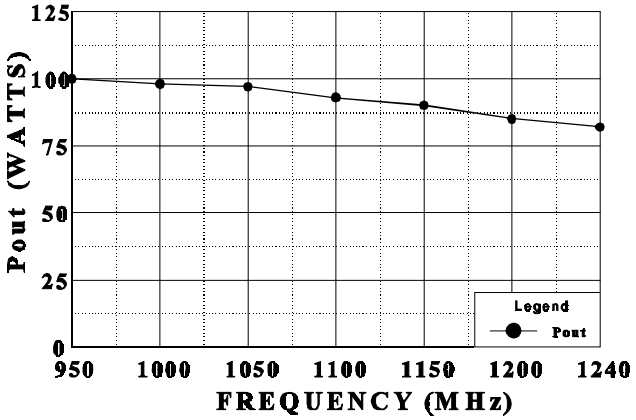
All Data shown is for operation under the rated pulse conditions.

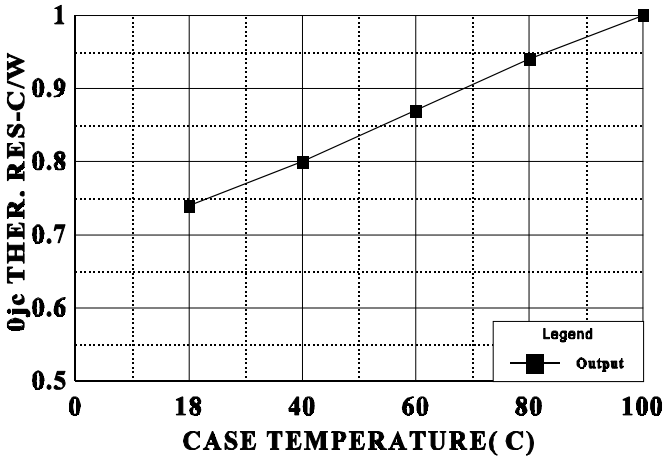
POWER OUTPUT vs FREQUENCY

Vcc = 36 V, Pin = 15 W



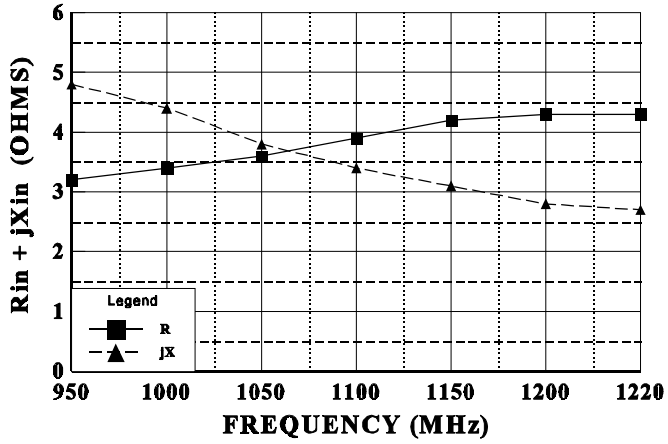
THERMAL RESISTANCE vs CASE TEMP.

Vcc - 36V, Po = 75 W



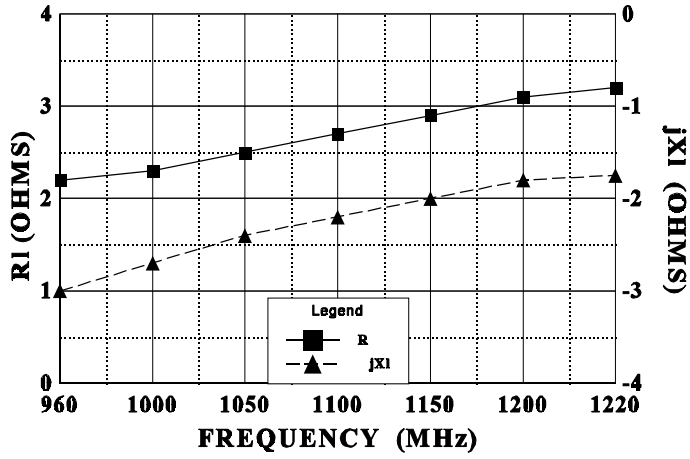
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 36 V, Pin = 13W Peak



SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 36 V, Pin = 13 W Peak



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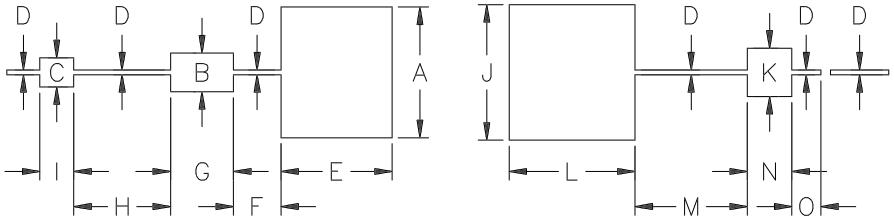
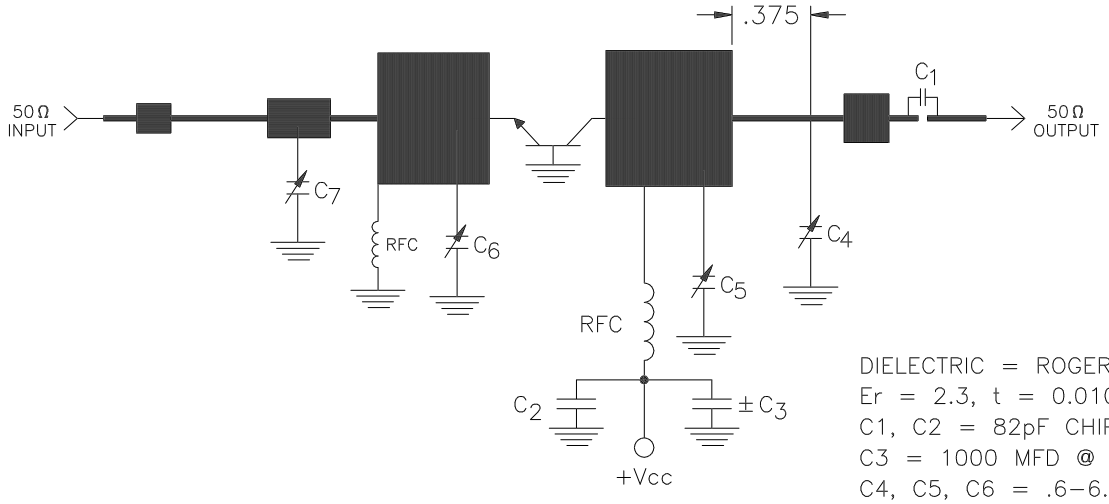
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



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
Er = 2.3, t = 0.010"
C1, C2 = 82pF CHIP ATC "A"
C3 = 1000 MFD @ 50V
C4, C5, C6 = .6–6.5Pf Johanson
C7 = 0.3–3.5Pf Johanson
RFC = 5 turns #22 wire 1/16" I.D.

GHz TECHNOLOGY	CAGE 0PJR2	DWG NO. JTDB 75	REV A
		SCALE 1/1	SHEET