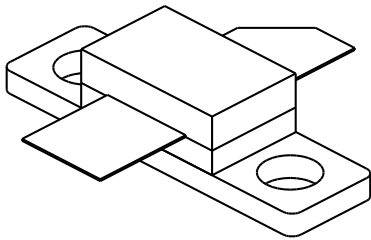


TPR 500

500 Watts, 50 Volts, Pulsed
Avionics 1030 - 1090 MHz

<p>GENERAL DESCRIPTION The TPR 500 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 1030-1090 MHz. The device has gold thin-film metallization for proven highest MTTF. The transistor includes input prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.</p>	<p>CASE OUTLINE 55CX, STYLE 1</p> 
<p>ABSOLUTE MAXIMUM RATINGS Maximum Power Dissipation @ 25°C² 1750 Watts</p> <p>Maximum Voltage and Current BVces Collector to Base Voltage 60 Volts BVebo Emitter to Base Voltage 4.0 Volts Ic Collector Current 40 Amps</p> <p>Maximum Temperatures Storage Temperature - 65 to + 150°C Operating Junction Temperature + 200°C</p>	

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 1090 MHz	500			Watts
Pin	Power Input	Vcc = 50 Volts			150	Watts
Pg	Power Gain	PW = 10 μsec	5.2	6.0		dB
η_c	Collector Efficiency	DF = 1%		35		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			10:1	

BVebo	Emitter to Base Breakdown	Ie = 30 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ic = 30 mA	55			Volts
hFE	DC - Current Gain	Ic = 500mA, Vce = 5 V	10			
θ_{jc}^2	Thermal Resistance				0.1	°C/W

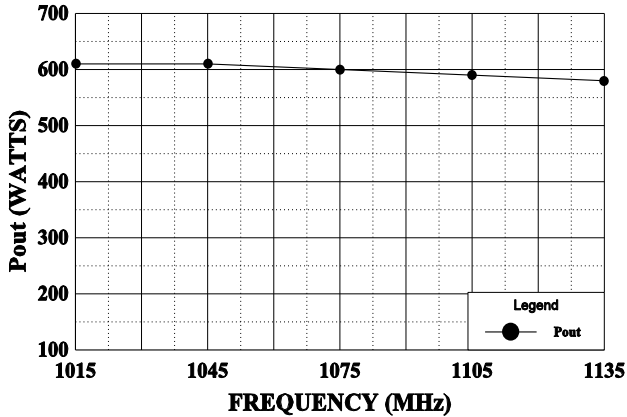
Note 1: At rated output power and pulse conditions
2: At rated pulse conditions

Initial Issue June 1, 1994

GHZ TECHNOLOGY INC. RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE. GHZ RECOMMENDS THAT BEFORE THE PRODUCT(S) DESCRIBED HEREIN ARE WRITTEN INTO SPECIFICATIONS, OR USED IN CRITICAL APPLICATIONS, THAT THE PERFORMANCE CHARACTERISTICS BE VERIFIED BY CONTACTING THE FACTORY.

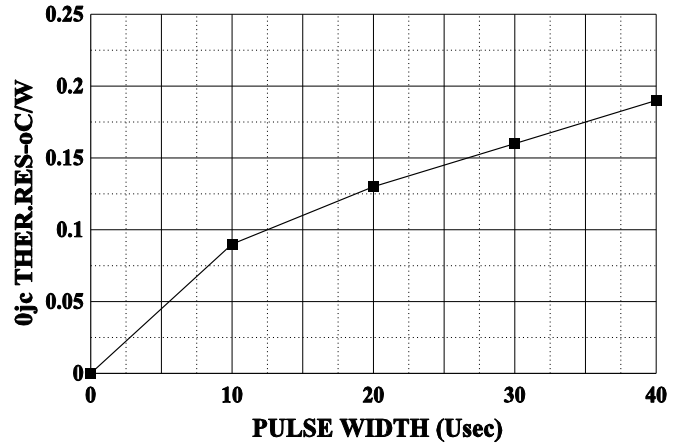
POWER OUTPUT vs FREQUENCY

Vcc = 50 V, Pin = 150 W



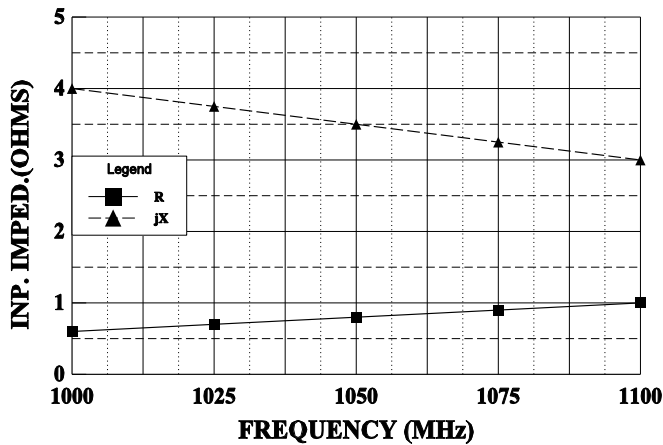
THERMAL RESISTANCE vs PULSE WIDTH

Vcc = 50V, Tf=30 C



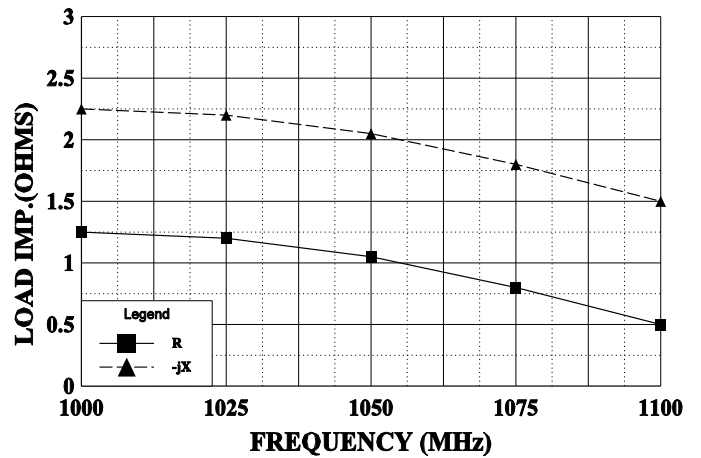
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 50 V, Pout= 500W



SERIES LOAD IMPEDANCE vs FREQUENCY

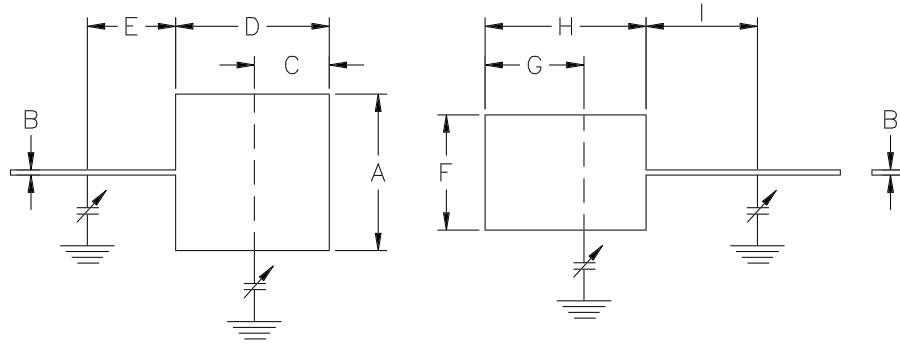
Vcc = 50 V, Pin = 75 W



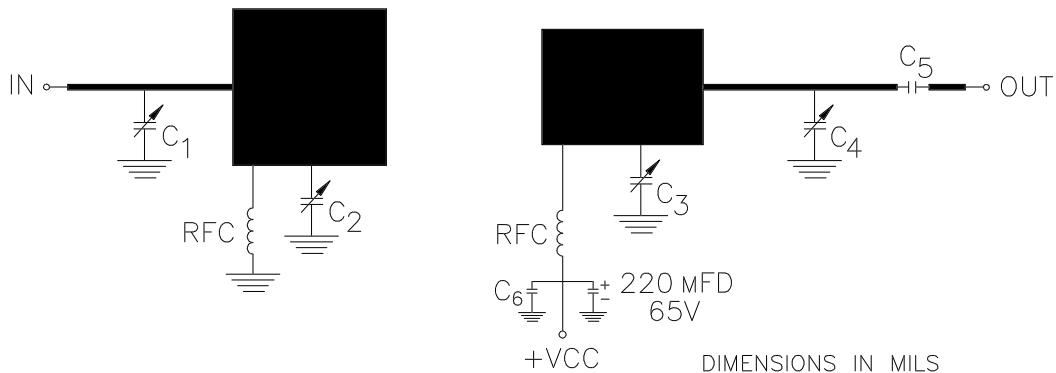
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
------	-----	-------------	------	----------

DIM	INCHES
A	.815
B	.027
C	.390
D	.800
E	.460
F	.600
G	.515
H	.839
I	.580



TPR 500 TEST CIRCUIT



DIMENSIONS IN MILS
 DIELECTRIC = 10MIL TFE Er=2.55
 C₁, C₂, C₄ = 0.3-3.5Pf JOHANSON
 C₃ = .6-6.5 Pf JOHANSON
 C₅, C₆ = 82Pf ATC "A"



CAGE OPJR2	DWG NO.	TPR 500	REV	A
	SCALE	1/1	SHEET	