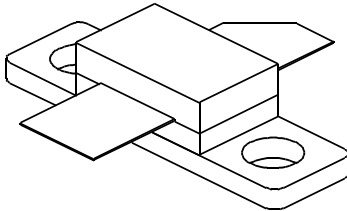


# TPR 400

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

<p><b>GENERAL DESCRIPTION</b></p> <p>The TPR 400 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 MTF. The transistor includes input prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.</p>	<p><b>CASE OUTLINE 55CX, STYLE 1</b></p> 
<p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p>Maximum Power Dissipation @ 25°C<sup>2</sup> 875 Watts</p> <p><b>Maximum Voltage and Current</b></p> <p>BVces Collector to Base Voltage 55 Volts          BVebo Emitter to Base Voltage 4.0 Volts          Ic Collector Current 30 Amps</p> <p><b>Maximum Temperatures</b></p> <p>Storage Temperature - 65 to + 150°C          Operating Junction Temperature + 200°C</p>	

## ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>Pout</b>	Power Out	F = 1030-1090 MHz	400			Watts
<b>Pin</b>	Power Input	Vcc = 50 Volts			75	Watts
<b>Pg</b>	Power Gain	PW = 10 μsec	7.27			dB
$\eta_c$	Collector Efficiency	DF = 1%		40		%
<b>VSWR</b>	Load Mismatch Tolerance	F = 1090 MHz			20:1	

<b>BVebo</b>	Emitter to Base Breakdown	Ie = 20 mA	4.0			Volts
<b>BVces</b>	Collector to Emitter Breakdown	Ic = 25 mA	55			Volts
<b>h<sub>FE</sub></b>	DC - Current Gain	Ic = 2.5 A, Vce = 5 V	10		100	
<b>θ<sub>jc</sub><sup>2</sup></b>	Thermal Resistance				0.2	°C/W

Note 1: At rated output power and pulse conditions

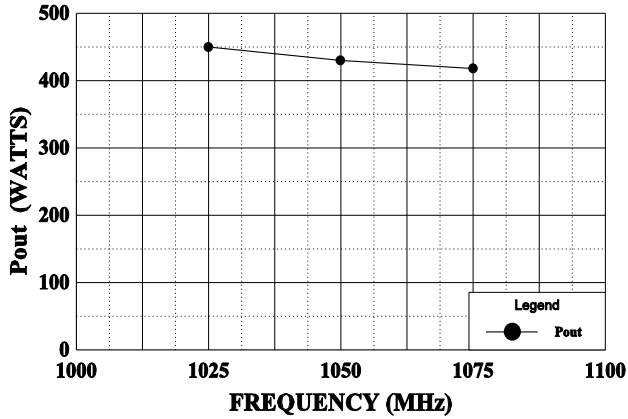
2: At rated pulse conditions

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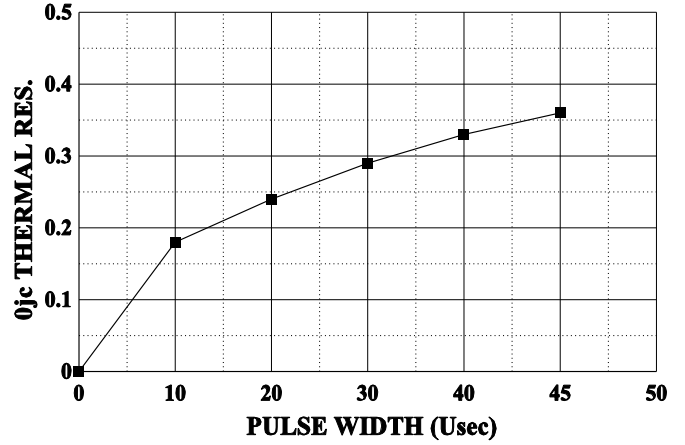
**POWER OUTPUT vs FREQUENCY**

Vcc = 50 V, Pin = 75 W



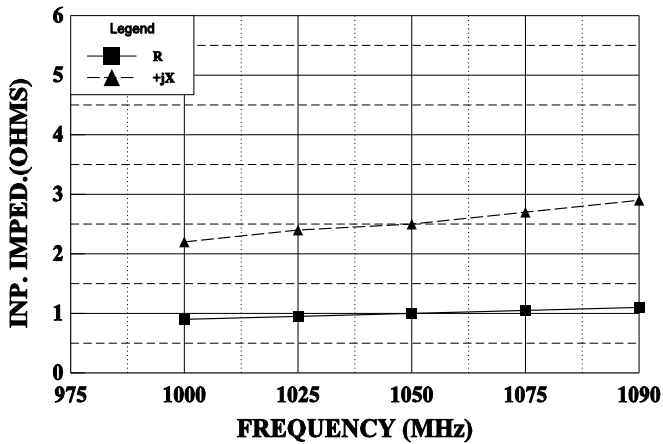
**THERMAL RESISTANCE vs PULSE WIDTH**

Vcc = 50 V, F = 1090 MHz



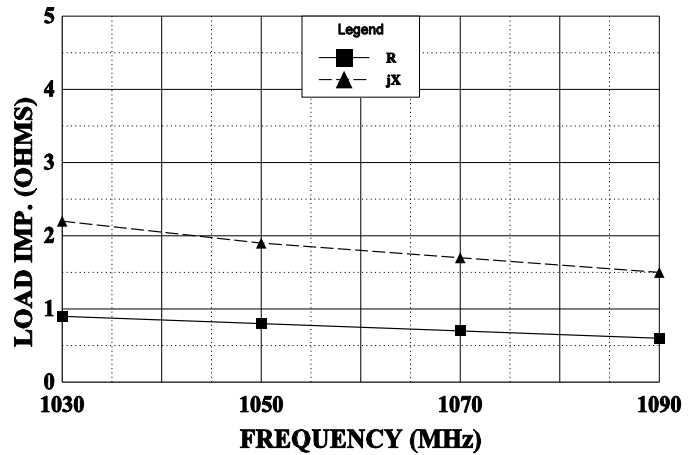
**SERIES INPUT IMPEDANCE vs FREQUENCY**

Vcc = 50 V, Pin = 75 W



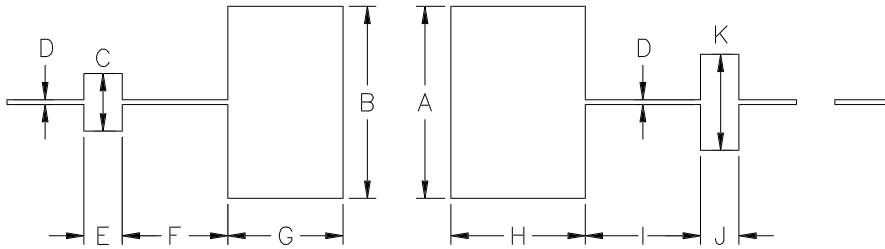
**SERIES LOAD IMPEDANCE vs FREQUENCY**

Vcc = 50 V, Pin = 75 W



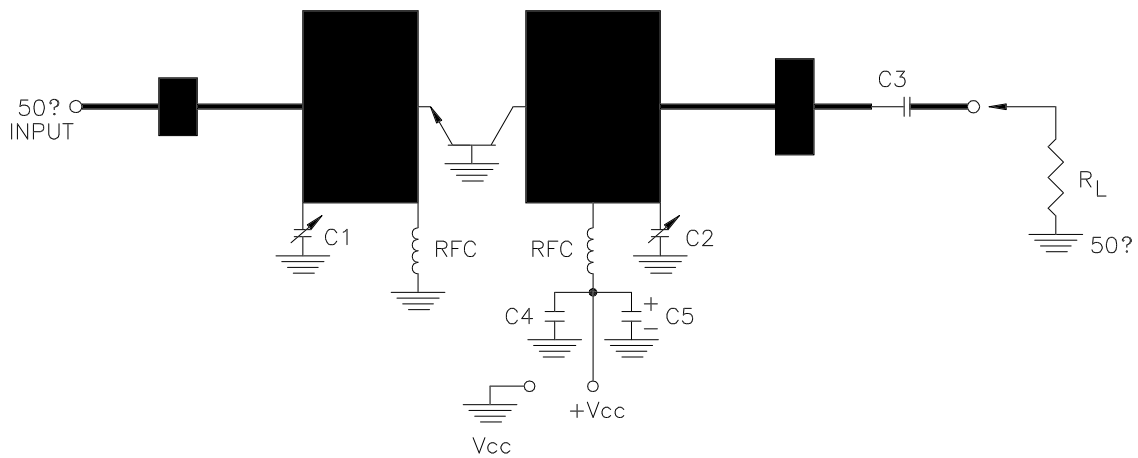
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	1.000
B	1.000
C	.300
D	.025
E	.200
F	.550
G	.600
H	.700
I	.600
J	.200
K	.500

DME 375 / TPR 400 TEST FIXTURE  
1030/1090 MHz – TEST AMPLIFIER (FIG1)



- MICROSTRIP LINE: DUROID, 10 MIL DIELECTRIC D 5880
- C1, C2 – 0.6–6pf VAR. CAP.
- C3, C4 – 82 pf CHIP
- C5 – 200 MFD CAP.