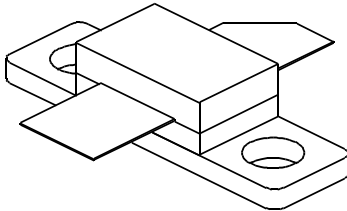


TPR 400

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

<p>GENERAL DESCRIPTION</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>CASE OUTLINE 55CX, STYLE 1</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation @ 25°C² 875 Watts</p> <p>Maximum Voltage and Current</p> <p>BVces Collector to Base Voltage 55 Volts BVebo Emitter to Base Voltage 4.0 Volts Ic Collector Current 30 Amps</p> <p>Maximum Temperatures</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
Pout	Power Out	F = 1030-1090 MHz	400			Watts
Pin	Power Input	Vcc = 50 Volts			75	Watts
Pg	Power Gain	PW = 10 μsec	7.27			dB
η_c	Collector Efficiency	DF = 1%		40		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			20:1	

BVebo	Emitter to Base Breakdown	Ie = 20 mA	4.0			Volts
BVces	Collector to Emitter Breakdown	Ic = 25 mA	55			Volts
h_{FE}	DC - Current Gain	Ic = 2.5 A, Vce = 5 V	10		100	
θjc²	Thermal Resistance				0.2	°C/W

Note 1: At rated output power and pulse conditions

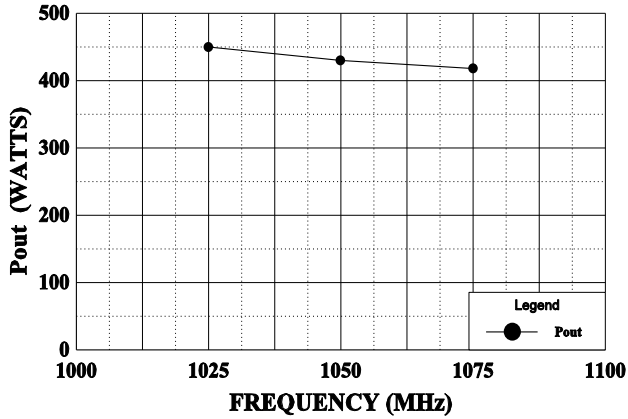
2: At rated pulse conditions

Issue B, February 1998

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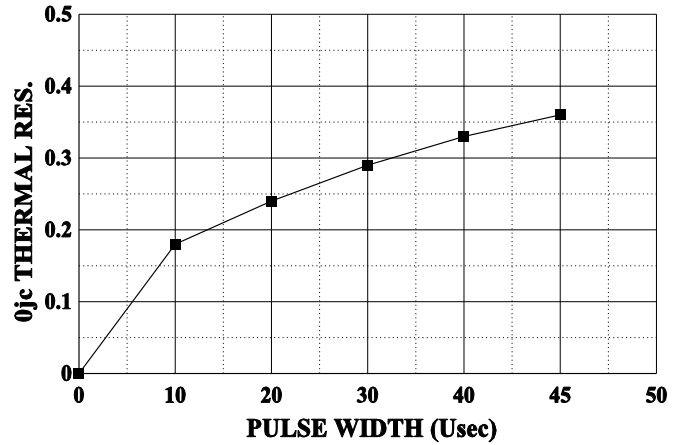
POWER OUTPUT vs FREQUENCY

V_{cc} = 50 V, P_{in} = 75 W



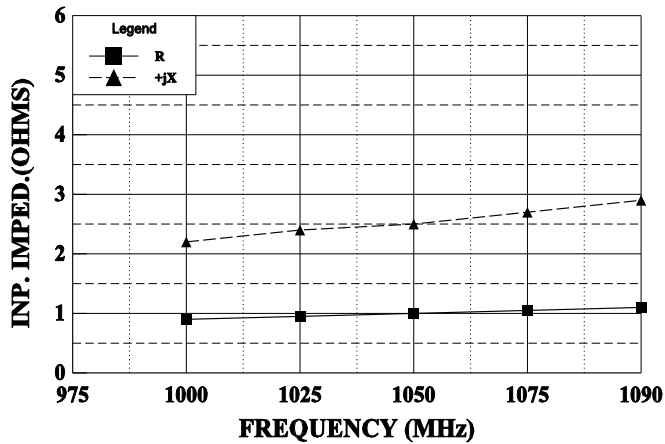
THERMAL RESISTANCE vs PULSE WIDTH

V_{cc} = 50 V, F = 1090 MHz



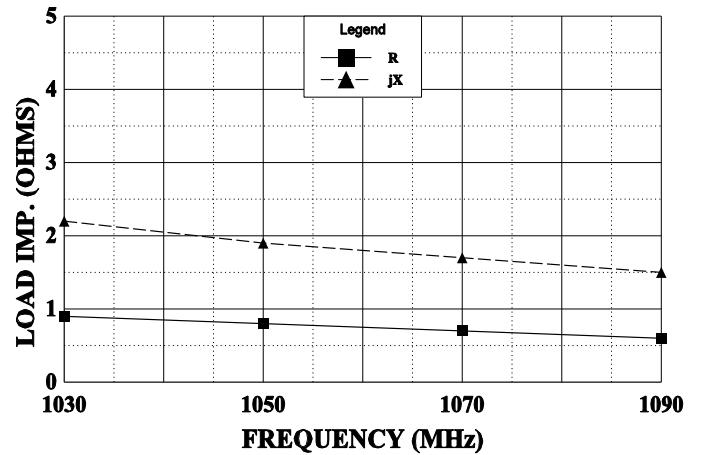
SERIES INPUT IMPEDANCE vs FREQUENCY

V_{cc} = 50 V, P_{in} = 75 W



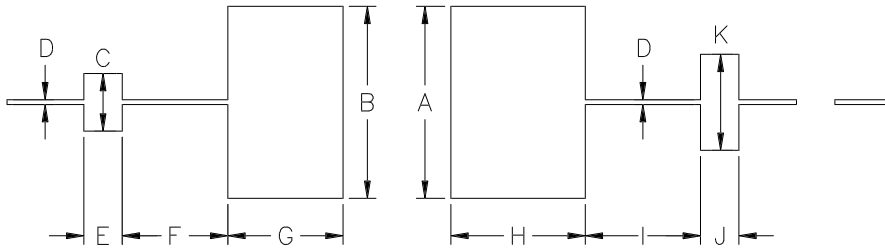
SERIES LOAD IMPEDANCE vs FREQUENCY

V_{cc} = 50 V, P_{in} = 75 W



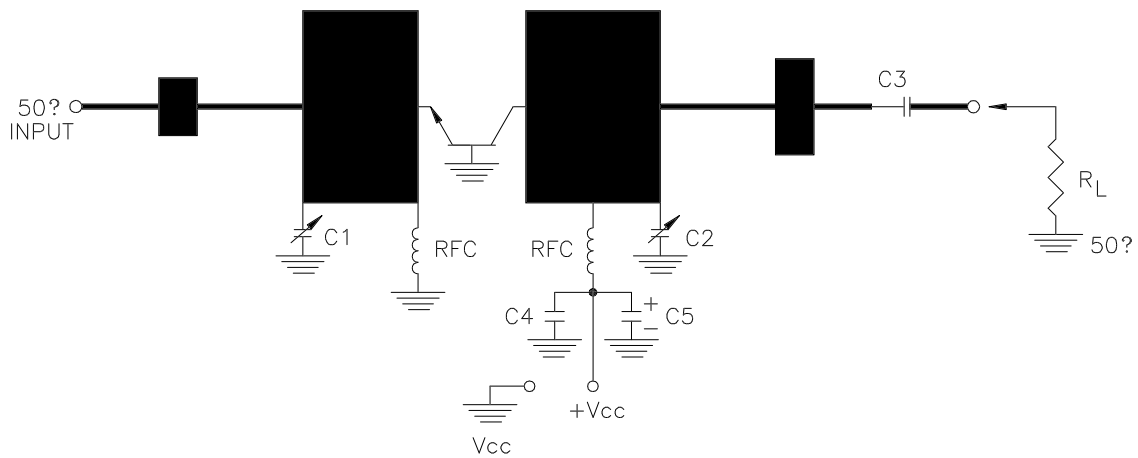
REVISIONS

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.