

TPR 400

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

GENERAL DESCRIPTION

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 MTTF. The transistor includes input prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C² 875 Watts

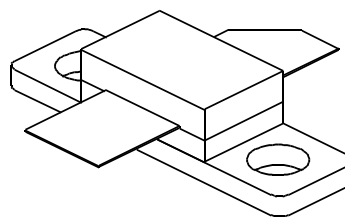
Maximum Voltage and Current

BVces Collector to Base Voltage 55 Volts
BVebo Emitter to Base Voltage 4.0 Volts
Ic Collector Current 30 Amps

Maximum Temperatures

Storage Temperature - 65 to + 150°C
Operating Junction Temperature + 200°C

CASE OUTLINE 55CX, STYLE 1



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 1030-1090 MHz	400			Watts
P_{in}	Power Input	V _{cc} = 50 Volts			75	Watts
P_g	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	I _e = 20 mA	4.0			Volts
BVces	Collector to Emitter Breakdown	I _c = 25 mA	55			Volts
h_{FE}	DC - Current Gain	I _c = 2.5 A, V _{ce} = 5 V	10		100	
θ_{jc}²	Thermal Resistance				0.2	°C/W

Note 1: At rated output power and pulse conditions

2: At rated pulse conditions

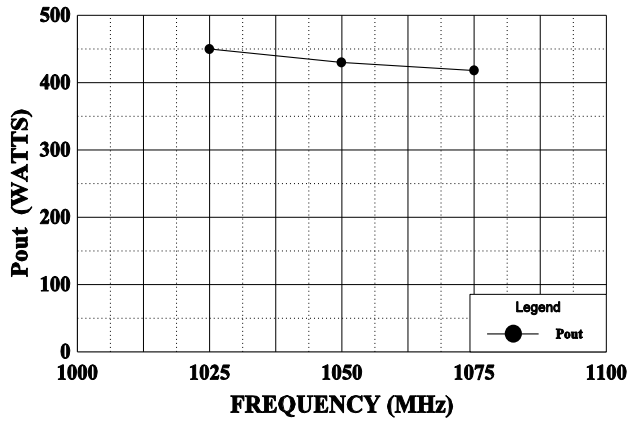
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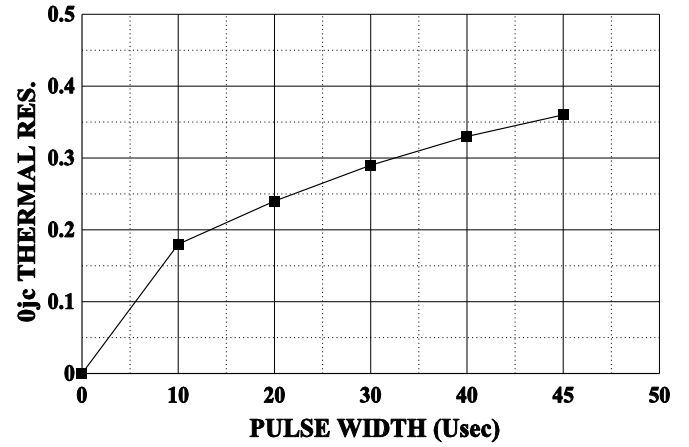
POWER OUTPUT vs FREQUENCY

Vcc = 50 V, Pin = 75 W



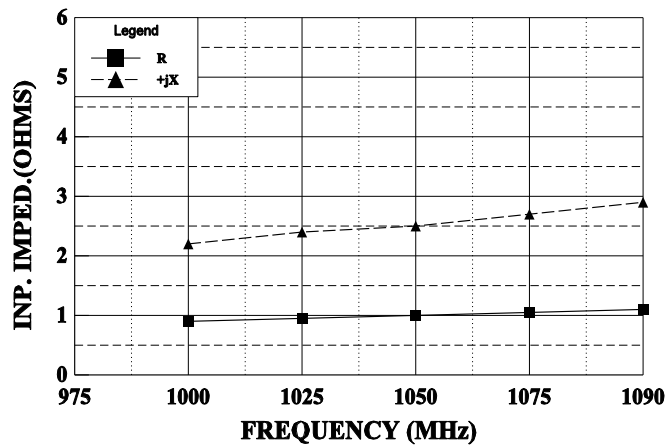
THERMAL RESISTANCE vs PULSE WIDTH

Vcc = 50 V, F = 1090 MHz



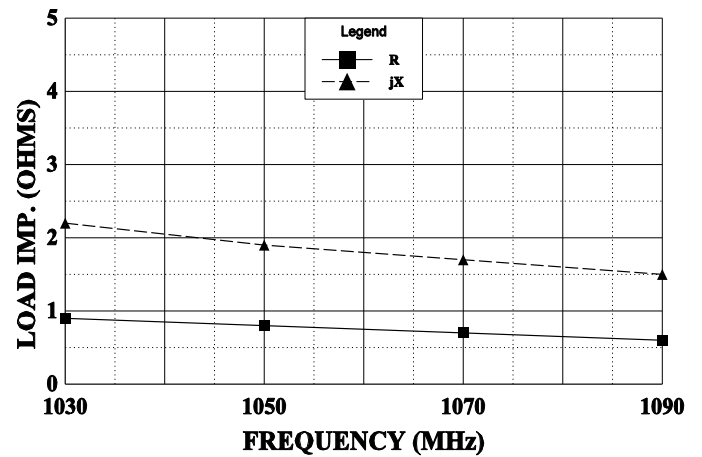
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 50 V, Pin = 75 W



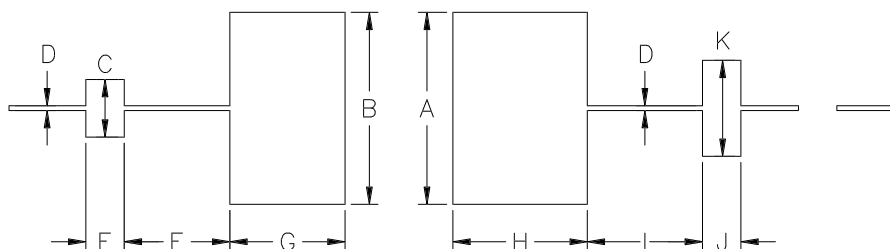
SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 50 V, Pin = 75 W



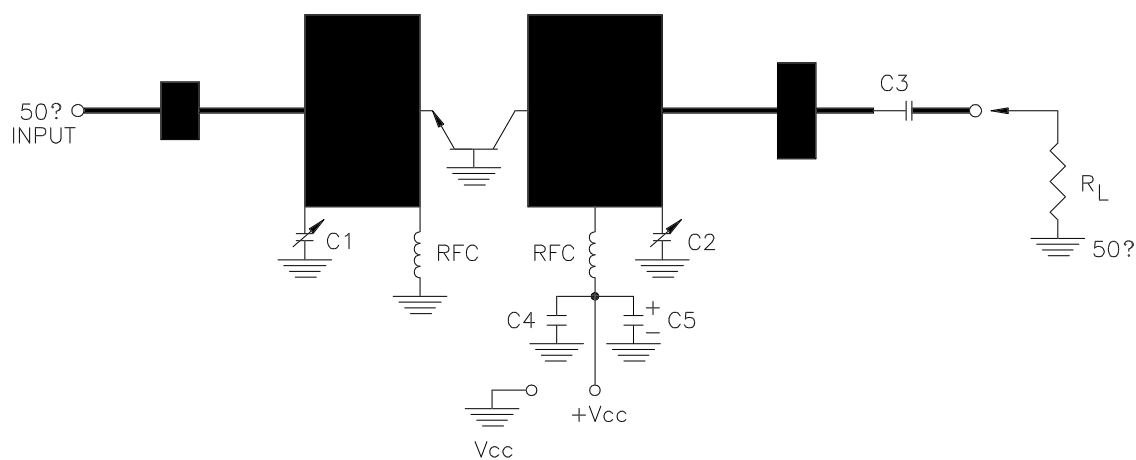
REVISIONS

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.



CHz TECHNOLOGY

CAGE
OPJR2

DWG NO.

DME 375 / TPR 400

REV

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SCALE

1/1

SHEET