

TPR 500A

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

GENERAL DESCRIPTION

The TPR 500A 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 and diffused ballasting for proven highest MTTF. The transistor includes input prematch for broadband capaility. Low thermal resistance package reduces junction temperature, extends life.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C² 1750 Watts

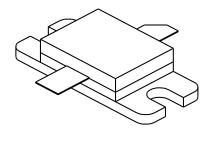
Maximum Voltage and Current

BVcesCollector to Base Voltage55 VoltsBVeboEmitter to Base Voltage3.5 VoltsIcCollector Current40 Amps

Maximum Temperatures

Storage Temperature $-65 \text{ to} + 200 ^{\circ}\text{C}$ Operating Junction Temperature $+200 ^{\circ}\text{C}$

CASE OUTLINE 55KT, STYLE 1



ELECTRICAL CHARACTERISTICS @ 25 °C

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

BVebo BVces	Emitter to Base Breakdown Collector to Emitter Breakdown	Ie = 30 mA Ic = 30 mA	3.5 55		Volts Volts
$egin{array}{l} \mathbf{h_{FE}} \\ \mathbf{ heta jc^2} \end{array}$	DC - Current Gain Thermal Resistance	Ic = 500 mA, Vce = 5 V	10	0.1	°C/W

Note 1: At rated output power and pulse conditions

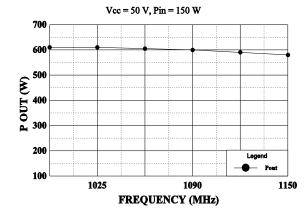
2: At rated pulse conditions

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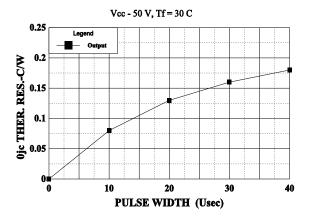


POWER OUPUT VS FREQUENCY

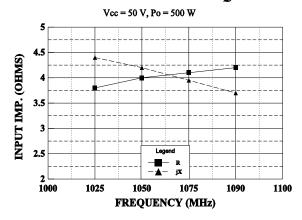


THERMAL RESISTANCE VS PULSE WIDTH

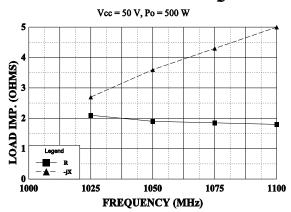
TPR 500A



SERIES INPUT IMPEDANCE VS FREQUENCY

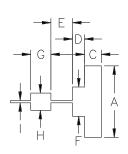


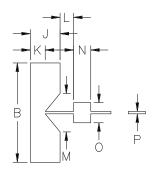
SERIES LOAD IMPEDANCE VS FREQUENCY





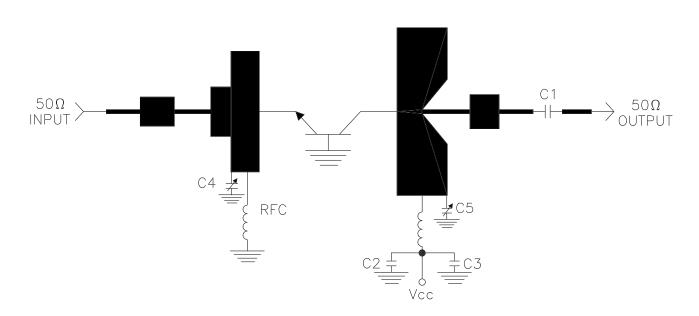
REVISIONS					
ZONE	REV	DESCRIPTION	DATE	APPROVED]





DIM	INCHES
А	.745
В	1.035
С	.175
D	.125
Е	.225
F	.305
G	.210
Н	.180
1	.025
J	.310
K	.155
L	.140
М	.400
N	.180
0	.210
Р	.025

1030/1090 MHz TEST AMPLIFIER



 $\begin{array}{c} \hline \\ \hline C1, C2 = 82 PF \text{ chip capacitor} \\ \hline C3 = 500 \text{ MFD @ 75V capacitor} \\ \hline C4,C5 = \text{Johanson,.6-6 pf} \\ \hline \end{array}$

REV

Α



cage OPJR2	DWG NO.	TPR 500A		
	SCALE	1 / 1	SHEET	

SCALE 1/1 SHEET