

## **TPR 700**

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

### **GENERAL DESCRIPTION**

The TPR 700 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 returns for **fast rise time**. Low thermal resistance package reduces junction temperature, extends life.

# The Common Base

## ABSOLUTE MAXIMUM RATINGS

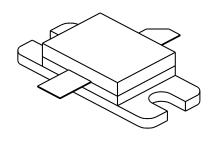
Maximum Power Dissipation @ 25°C<sup>2</sup> 2050 Watts

**Maximum Voltage and Current** 

BVces Collector to Base Voltage 65 Volts
BVebo Emitter to Base Voltage 3.5 Volts
Ic Collector Current 55 Amps

**Maximum Temperatures** 

 $\begin{array}{ll} \mbox{Storage Temperature} & -65 \mbox{ to} + 200 \mbox{°C} \\ \mbox{Operating Junction Temperature} & +200 \mbox{°C} \end{array}$ 



**CASE OUTLINE** 

## ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout Pin Pg η <sub>c</sub> t <sub>r</sub> VSWR	Power Out Power Input Power Gain Collector Efficiency Rise Time Load Mismatch Tolerance	F = 1090 MHz Vcc = 50 Volts PW = 10 μsec DF = 1% F = 1090 MHz	700 6.7	43	150 70 30:1	Watts Watts dB % ns

BVebo <sup>3</sup>	Emitter to Base Breakdown	Ie = 50mA	3.5		Volts
BVces	Collector to Emitter Breakdown	Ic = 100mA	65		Volts
$\mathbf{h}_{\mathbf{FE}}$	DC - Current Gain	Ic = 1000 mA, Vce = 5  V	10		
$\theta$ <b>j</b> c <sup>2</sup>	Thermal Resistance			0.08	°C/W

Note 1: At rated output power and pulse conditions

2: At rated pulse conditions

3: Cannot measure due to input return

Issue February 1996

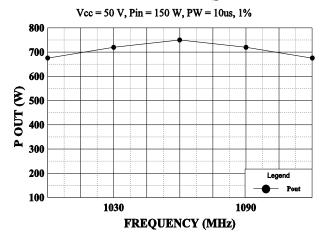
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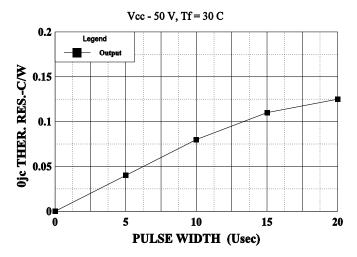
# Typical Performance

## **TPR 700**

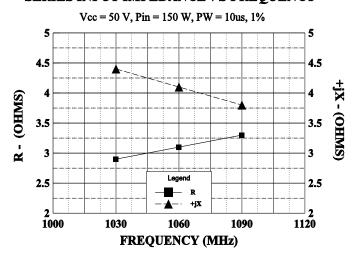
## **POWER OUPUT VS FREQUENCY**



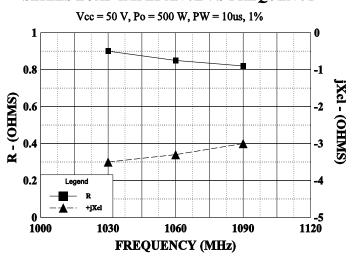
#### THERMAL RESISTANCE VS PULSE WIDTH



### SERIES INPUT IMPEDANCE VS FREQUENCY

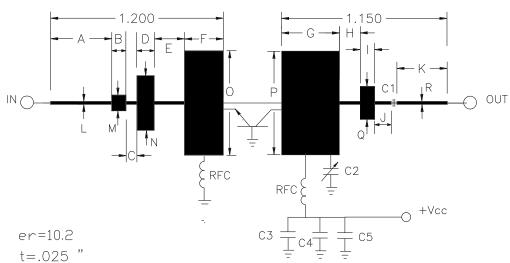


## SERIES LOAD IMPEDANCE VS FREQUENCY





REVISIONS					
ZONE	ZONE REV DESCRIPTION		DATE	APPROVED	



DIM	INCHES		
Α	.425		
В	.100		
С	.075		
D	.120		
Ε	.210		
F	.270		
G	.400		
Н	.145		
1	.100		
J	.115		
K	.350		
L	.021		
М	.110		
N	.380		
0	.725		
Р	.720		
Q	.230		
R	.021		

t=.025 "
C1, C3=100 pf Chip
C2=.3 -3.5 pf
C4=1 uf
C5=220 uf

GHZ TPR 700 1030/1090 MHz

DATE: 5 OCT 95



CAGE	DWG NO.	TPR '	700	REV 1
0PJR2	SCALE	1.5/1	SHEET	