GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

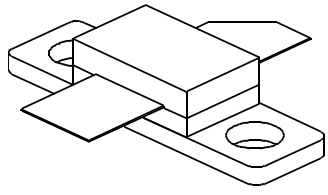
TPR 175

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

GENERAL DESCRIPTION

The TPR 175 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.

CASE OUTLINE
55CX, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C[2]	388 Watts
Maximum Voltage and Current	
BVces Collector to Base Voltage	55 Volts
BVebo Emitter to Base Voltage	3.5 Volts
Ic Collector Current	12.5 Amps
Maximum Temperatures	
Storage Temperature	- 65 to + 150°C
Operating Junction Temperature	+ 200°C

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 1090 MHz	175			Watts
Pin	Power Input	Vcc = 50 Volts			25	Watts
Pg	Power Gain	PW = 10 μsec	8.0	9.0		dB
η_c	Collector Efficiency	DF = 1%		40		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			00:1	

BVebo	Emitter to Base Breakdown	Ie = 5 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ic = 20 mA	55			Volts
$\mathbf{h_{FE}}$	DC - Current Gain	Ic = 20 mA, Vce = 5V	10			
θ**jc**[2]	Thermal Resistance				0.45	°C/W

Note 1: At rated output power and pulse conditions
2: At rated pulse conditions

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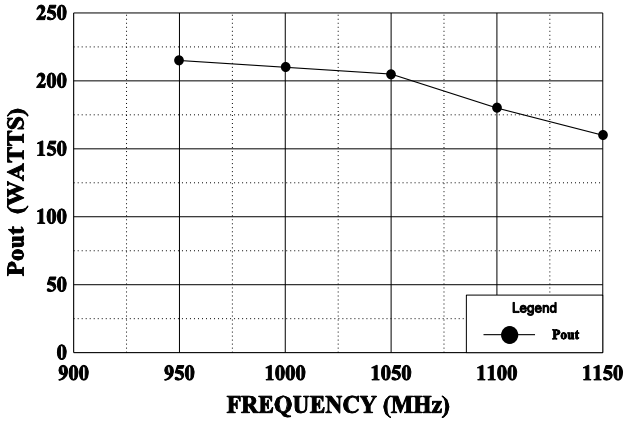
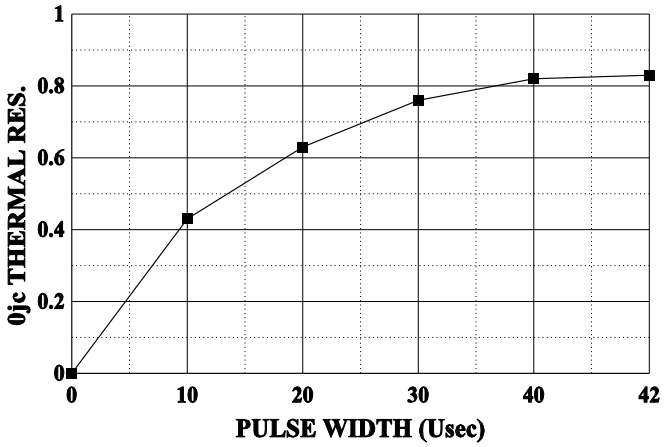
POWER OUTPUT vs FREQUENCY

Vcc = 50 V, Pin = 25 W



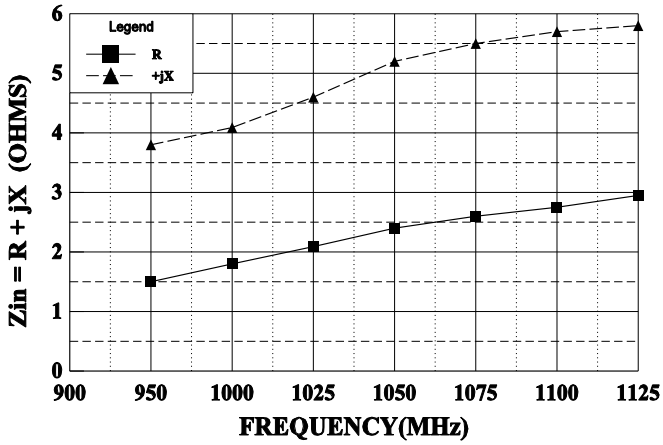
THERMAL RESISTANCE vs PULSE WIDTH

Vcc - 50 V, Tf = 30o C



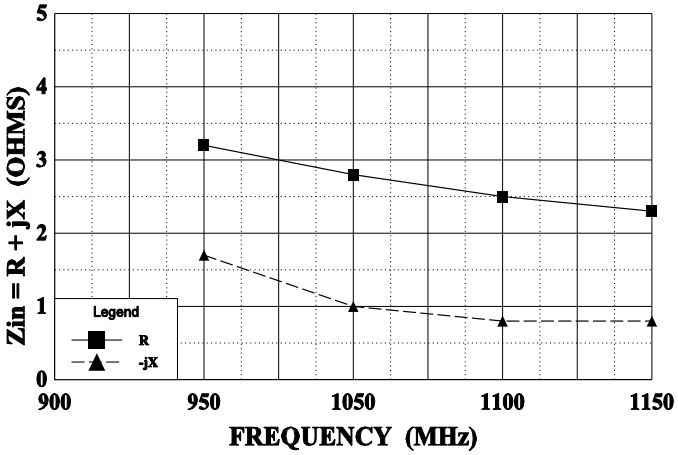
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 50 V, Po = 175 W



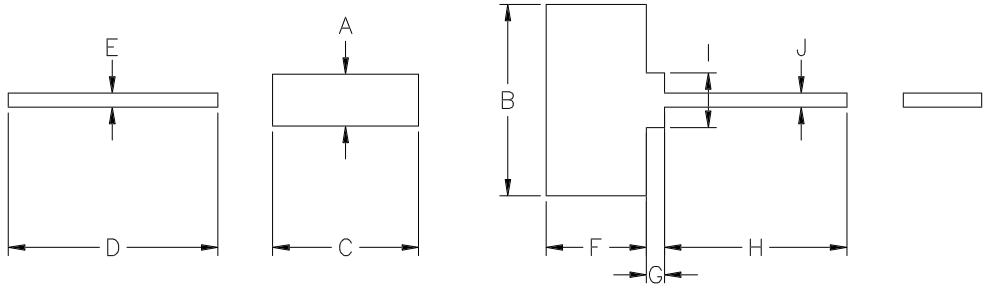
SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 50 V, Po = 175 W

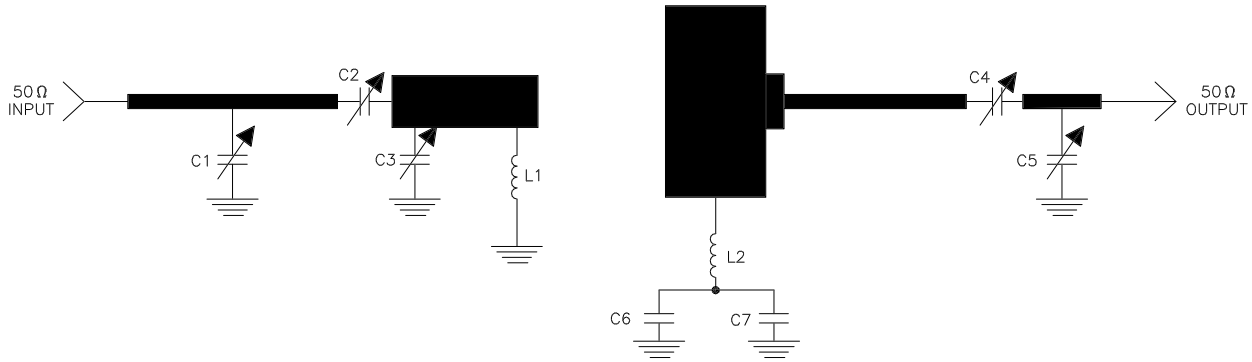


REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

DIM	INCHES
A	.285
B	1.050
C	.800
D	1.150
E	.078
F	.550
G	.100
H	1.000
I	.300
J	.078



1030/1090 TEST AMPLIFIER



Material 1/32" Teflon Fiberglass
C1,C3,C5 = .3–3.5 Johanson
C2,C4 = .6–6 Johanson
C6 = 82pf A.T.C.
C7 = 200μf Electrolytic
L1 = #18 AWG 0.6" LONG
L2 = #18 AWG 1.0" LONG

	CAGE	DWG NO.	REV
GHz TECHNOLOGY	0PJR2	TPR 175	A
		SCALE 1/1	SHEET