

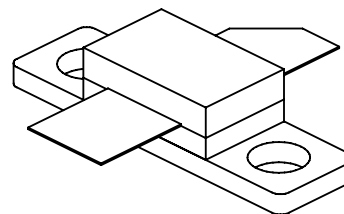
TPR400A

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

GENERAL DESCRIPTION

The TPR400A 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. Low thermal resistance packaging reduces the junction temperature and extends device lifetime.

CASE OUTLINE 55CX, STYLE 1



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

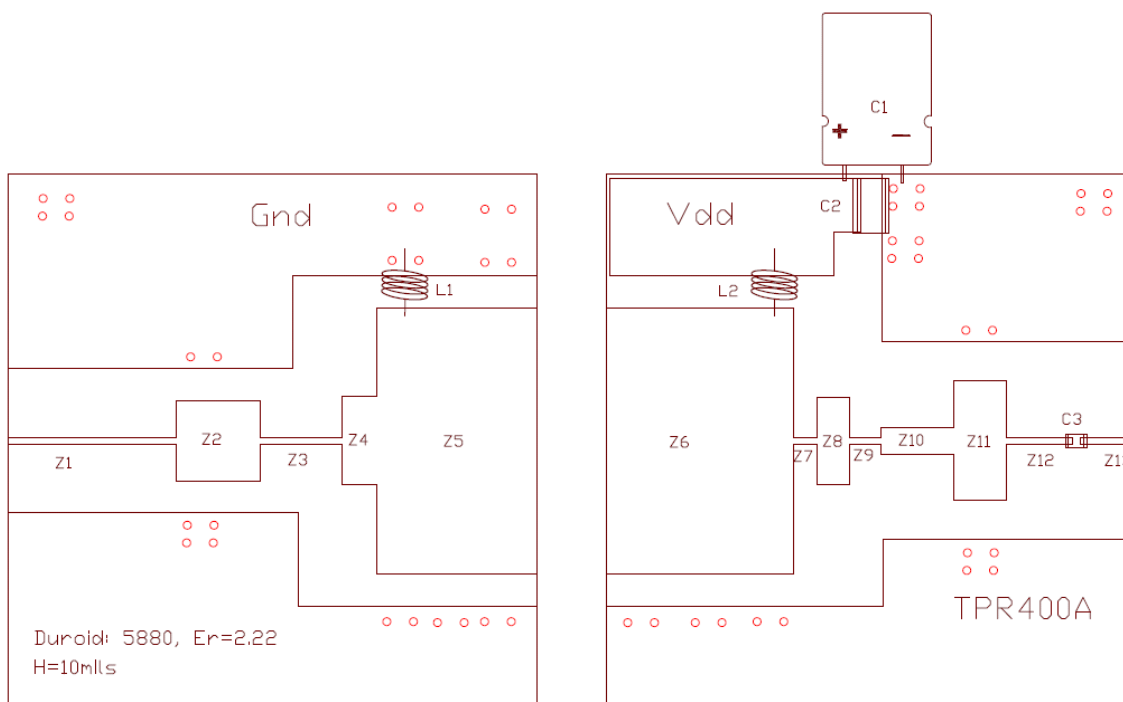
ELECTRICAL CHARACTERISTICS @ 25 °C

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			45	Watts
P _g	Power Gain	PW = 10 μsec	9.5			dB
η _c	Collector Efficiency	DF = 1%		50		%
V _{SWR}	Load Mismatch Tolerance				5:1	

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} ¹	Thermal Resistance				.2	°C/W

Note 1: At rated output power and pulse conditions

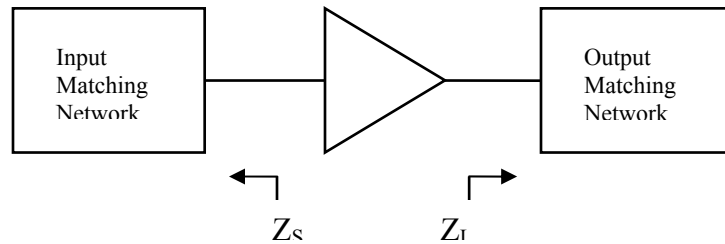
Circuit Information



TPR400A Test Circuit Component Designations and Values

Part	Description	Part	Description
C1	1000 uF Electrolytic Capacitor	Z6	1000 x 700 mils (W x L)
C2	1 uF Chip Capacitor	Z7	25 x 90 mils (W x L)
C3	33pF Chip Capacitor (ATC 100A)	Z8	325 x 120 mils (W x L)
L1, L2	4 Turns, 20AWG, IDIA 0.1"	Z9	25 x 120 mils (W x L)
Z1	25 x 630 mils (W x L)	Z10	100 x 270 mils (W x L)
Z2	300 x 315 mils (W x L)	Z11	450 x 200 mils (W x L)
Z3	25 x 305 mils (W x L)	Z12	25 x 245 mils (W x L)
Z4	330 x 130 mils (W x L)	Z13	25 x 205 mils (W x L)
Z5	1000 x 600 mils (W x L)	PCB	Duroid 5880; Er2.22, H=10mils

Device Impedance Information



Typical Impedance Values

Frequency (MHz)	$Z_s(\Omega)$	$Z_L(\Omega)$
1030	$0.96 - j3.29$	$1.02 - j2.51$
1090	$1.00 - j3.02$	$1.12 - j2.24$

* $V_{cc} = 50V$, $P_{in} = 45W$

* Pulse Format: $10\mu s$, 1% Long Term Duty Factor

