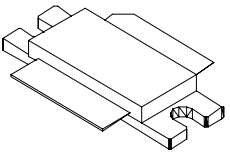




TCS1200

**1200 Watts, 53 Volts
Pulsed Avionics at 1030 MHz**

<p>GENERAL DESCRIPTION</p> <p>The TCS1200 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems at 1030 MHz, with the pulse width and duty required for TCAS applications. The device has gold thin-film metalization and emitter ballasting for proven highest MTTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.</p>	<p>CASE OUTLINE 55TU-1</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation Device Dissipation @ 25°C¹ 2095 W</p> <p>Maximum Voltage and Current Collector to Base Voltage (BV_{ces}) 65 V Emitter to Base Voltage (BV_{ebo}) 3.5 V Collector Current (I_c) 60 A</p> <p>Maximum Temperatures Storage Temperature -65 to +200 °C Operating Junction Temperature +200 °C</p>	

ELECTRICAL CHARACTERISTICS @ 25°C

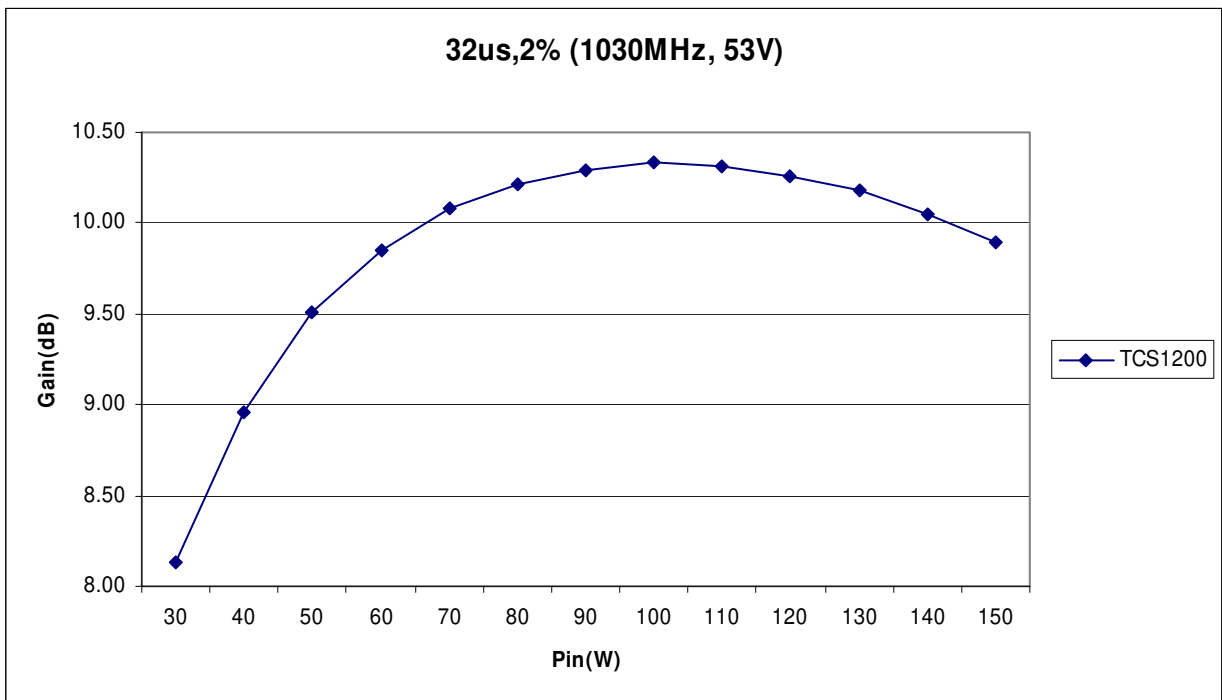
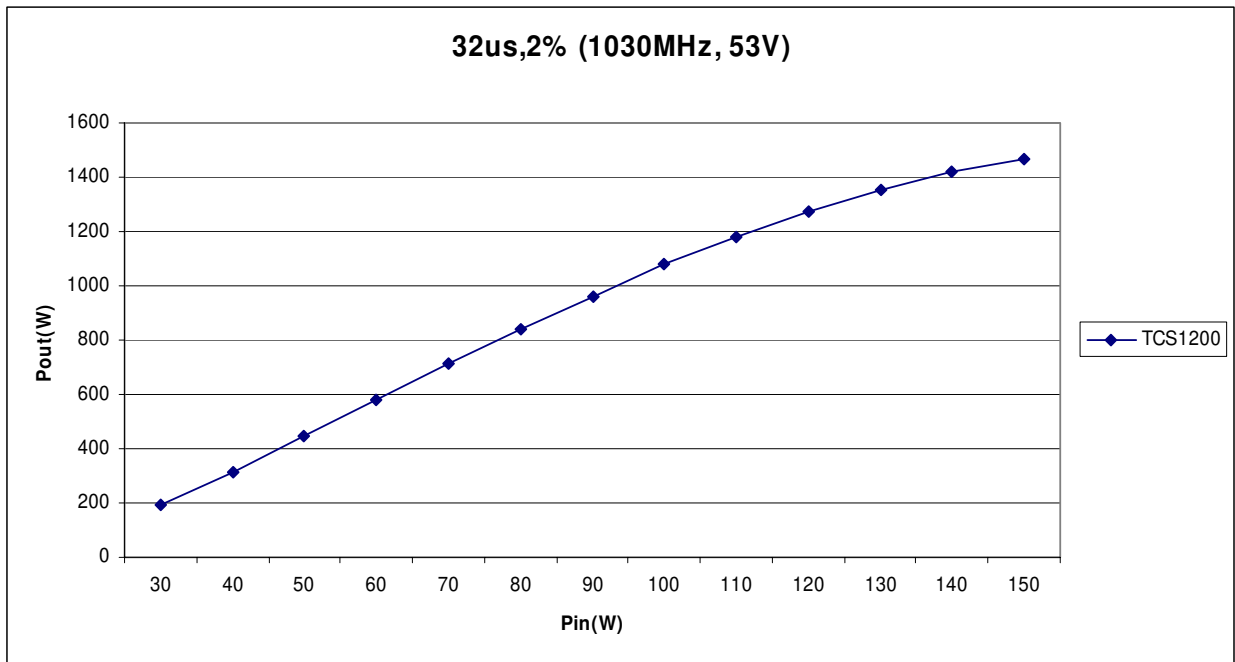
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Out	Pulse Width = 32μs Duty Factor = 2%	1200			W
P _g	Power Gain		10.2			dB
η _c	Collector Efficiency	F = 1030 MHz, V _{cc} = 53 Volts Pin = 115 Watts	45			%
R _L	Return Loss		-10			dB
Tr	Rise Time				100	ns
Pd	Pulse Droop				0.5	dB
VSWR	Load Mismatch Tolerance ¹			2.5:1		

FUNCTIONAL CHARACTERISTICS @ 25°C

BV _{ebo}	Emitter to Base Breakdown	I _e = 40 mA	3.5			V
BV _{ces}	Collector to Emitter Breakdown	I _c = 100 mA	65			V
h _{FE}	DC – Current Gain	V _{ce} = 5V, I _c = 1A	20			
θ _{jc} ¹	Thermal Resistance				0.012	°C/W

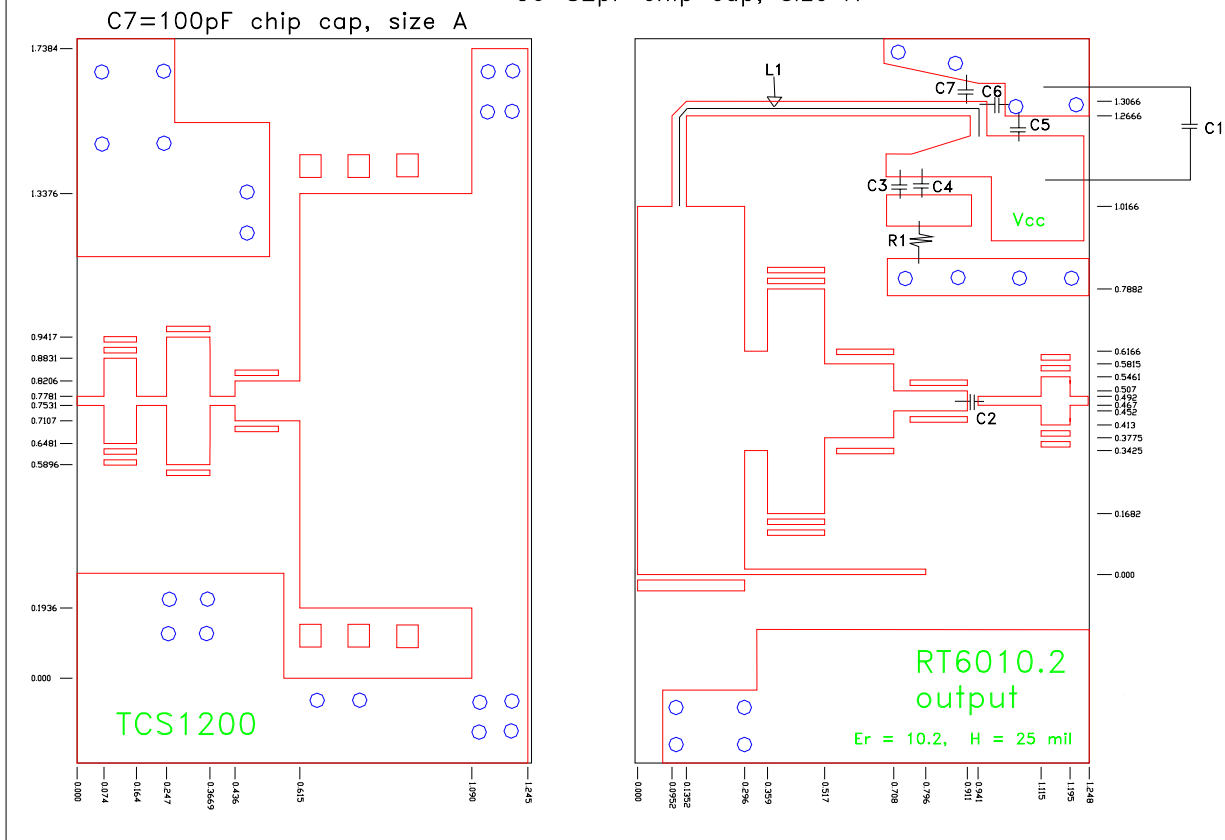
Rev B April, 2009

- NOTES: 1. At rated output power and pulse conditions
2. See plots below for Mode S data at 50V as well as the standard 32us,2% data at 53V



TCS1200 Test Fixture

- L1=wire inductor: length=1155mils; diameter=45mils
- R1=1.0ohm chip resistor
- C1=6800uF electrolytic cap; 63V
- C2=68pF chip cap, size A
- C3=C4=0.1uF chip cap, size B
- C5=75pF chip cap, size A
- C6=82pF chip cap, size A
- C7=100pF chip cap, size A



Dimensions in inches

TCS1200

