

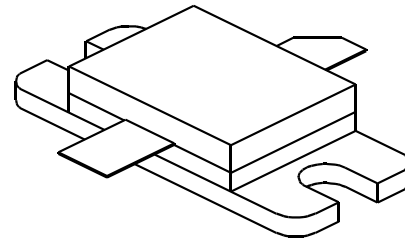
TCS450

450 Watts, 45 Volts, Pulsed
Avionics 1030 MHz

GENERAL DESCRIPTION

The TCS450 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 1030-1090 MHz, with the pulse width and duty required for TCAS applications. The device has gold thin-film metallization and diffused ballasting for proven highest MTTF. The transistor includes input prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.

CASE OUTLINE 55KT Style 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C ²	1166 Watts
Maximum Voltage and Current	
BVces Collector to Base Voltage	55 Volts
BVebo Emitter to Base Voltage	3.5 Volts
Ic Collector Current	40 Amps
Maximum Temperatures	
Storage Temperature	- 65 to + 200°C
Operating Junction Temperature	+ 200°C

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 1030 MHz	450			Watts
Pin	Power Input	Vcc = 45 Volts			100	Watts
Pg	Power Gain	PW = 32 μsec	6.2			dB
η_c	Collector Efficiency	DF = 1%		45		%
Pd	Pulse Droop	F = 1030MHz		0.25		dB
VSWR	Load Mismatch Tolerance				6:1	

BVebo¹	Emitter to Base Breakdown	Ie = 30 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ic = 30 mA	55			Volts
Cob	Capacitance Collector to Base	Vcb = 50 Volts				pF
h_{FE}¹	DC - Current Gain	Ic = 500 mA, Vce = 5 V	10			
θjc²	Thermal Resistance				0.15	°C/W

Note 1: Not measurable due to internal DC Return.

Note 2: At rated pulse conditions

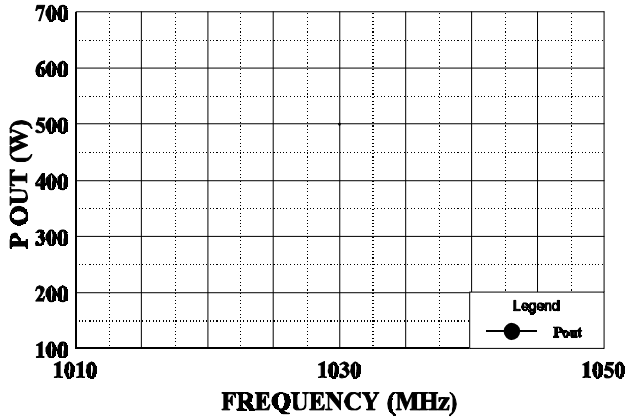
Revision 2, July 7, 1997

GHz TECHNOLOGY INC. RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE. GHz RECOMMENDS THAT BEFORE THE PRODUCT(S) DESCRIBED HEREIN ARE WRITTEN INTO SPECIFICATIONS, OR USED IN CRITICAL APPLICATIONS, THAT THE PERFORMANCE CHARACTERISTICS BE VERIFIED BY CONTACTING THE FACTORY.

GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

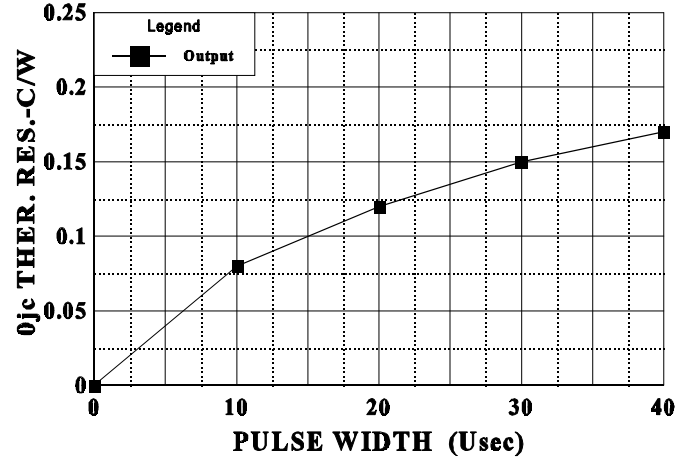
POWER OUTPUT VS FREQUENCY

Vcc = 45 V, Pin = 100 W



THERMAL RESISTANCE VS PULSE WIDTH

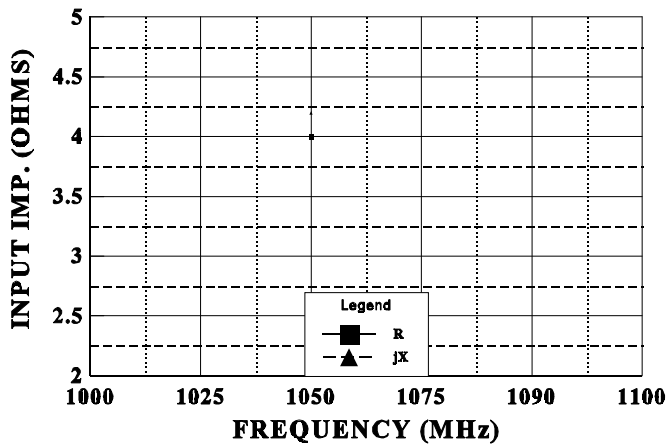
Vcc - 45 V, Tf = 30 C



Following Data is to be provided in the near future.

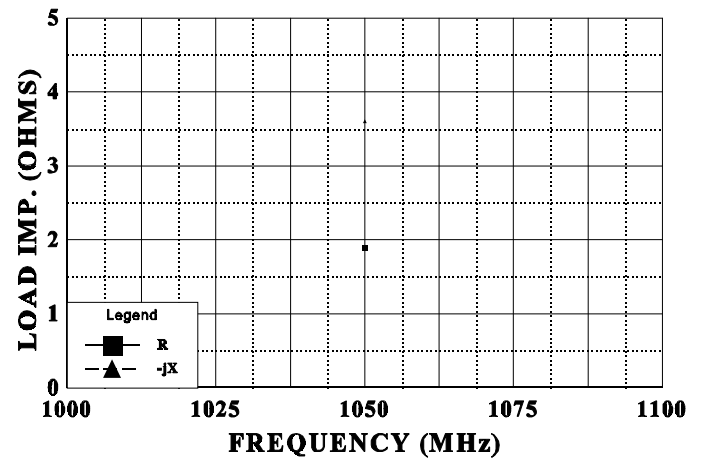
SERIES INPUT IMPEDANCE VS FREQUENCY

Vcc = 45 V, Po = 450 W



SERIES LOAD IMPEDANCE VS FREQUENCY

Vcc = 45 V, Po = 450 W



July 7, 1997

GHz TECHNOLOGY INC. RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE. GHz RECOMMENDS THAT BEFORE THE PRODUCT(S) DESCRIBED HEREIN ARE WRITTEN INTO SPECIFICATIONS, OR USED IN CRITICAL APPLICATIONS, THAT THE PERFORMANCE CHARACTERISTICS BE VERIFIED BY CONTACTING THE FACTORY.

GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120