GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

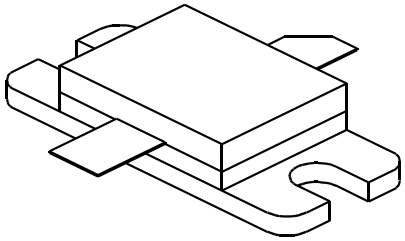
TCS450

450 Watts, 45 Volts, Pulsed
Avionics 1030 MHz

GENERAL DESCRIPTION

The TCS450 s 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 capaility. 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	

BVebo[1]	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
$\mathbf{h_{FE}}$[1]	DC - Current Gain	Ic = 500 mA, Vce = 5 V	10			
θ**jc**[2]	Thermal Resistance				0.15	°C/W

Note 1: Not measureable due to internal DC Return.
2: At rated pulse conditions

Revision 2, July 7, 1997

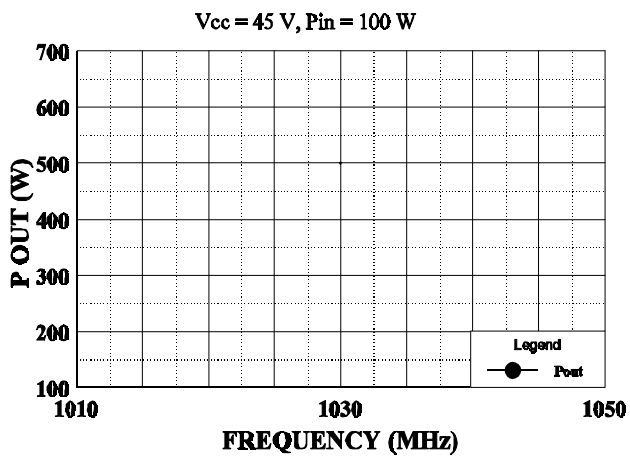
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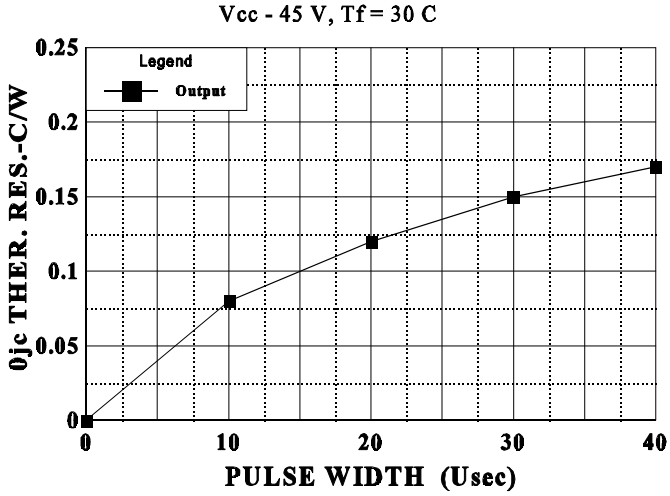
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TCS450

POWER OUPUT VS FREQUENCY

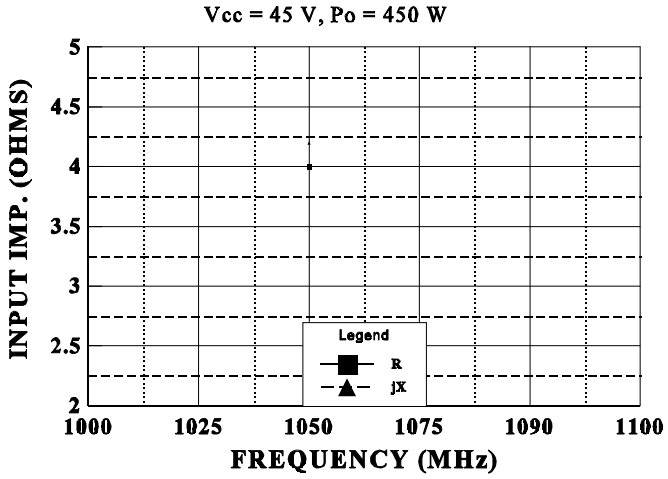


THERMAL RESISTANCE VS PULSE WIDTH

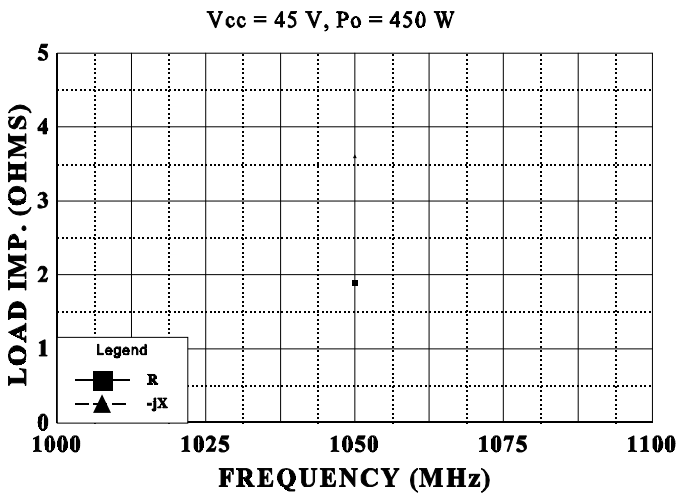


Following Data is to be provided in the near future.

SERIES INPUT IMPEDANCE VS FREQUENCY



SERIES LOAD IMPEDANCE VS FREQUENCY



July 7, 1997

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