

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.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C² 1166 Watts

Maximum Voltage and Current

BV_{ces} Collector to Base Voltage 55 Volts

BV_{ebo} Emitter to Base Voltage 3.5 Volts

I_c Collector Current 40 Amps

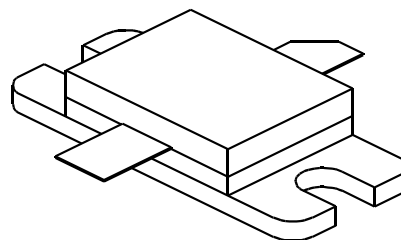
Maximum Temperatures

Storage Temperature - 65 to + 200°C

Operating Junction Temperature + 200°C

CASE OUTLINE

55KT Style 1



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Out	F = 1030 MHz	450			Watts
P _{in}	Power Input	V _{cc} = 45 Volts			100	Watts
P _g	Power Gain	PW = 32 μsec	6.2			dB
η _c	Collector Efficiency	DF = 1%		45		%
P _d	Pulse Droop	F = 1030MHz		0.25		dB
VSWR	Load Mismatch Tolerance				6:1	

BV _{ebo} ¹	Emitter to Base Breakdown	I _e = 30 mA	3.5			Volts
BV _{ces}	Collector to Emitter Breakdown	I _c = 30 mA	55			Volts
C _{ob}	Capacitance Collector to Base	V _{cb} = 50 Volts				pF
h _{FE} ¹	DC - Current Gain	I _c = 500 mA, V _{ce} = 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

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