

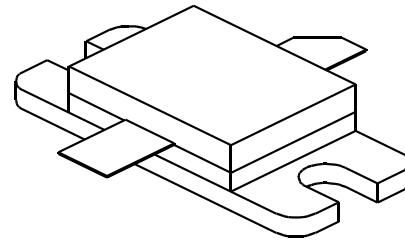
TCS450

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
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
V_{SWR}	Load Mismatch Tolerance				6:1	

BVebo¹	Emitter to Base Breakdown	I _e = 30 mA	3.5			Volts
BVces	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 measurable due to internal DC Return.

Note 2: At rated pulse conditions

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