

MDS800

800 Watts, 50 Volts

Pulsed Avionics at 1090 MHz

GENERAL DESCRIPTION

The MDS800 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems at 1090 MHz, with the pulse width and duty required for MODE-S 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.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C¹ 1458 W

Maximum Voltage and Current

Collector to Base Voltage (BV_{ces}) 60 V

Emitter to Base Voltage (BV_{ebo}) 3.5 V

Collector Current (I_c) 60 A

Maximum Temperatures

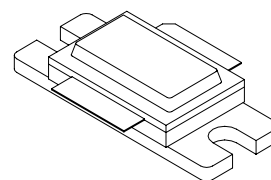
Storage Temperature -65 to +200 °C

Operating Junction Temperature +200 °C

CASE OUTLINE

55ST-1

(Common Base)



ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Output	F = 1090 MHz	800			W
P _{in}	Power Input	V _{cc} = 50 Volts			110	
P _g	Power Gain	Burst width = 128µs	8.6			dB
η _c	Collector Efficiency	LTDF = 2%	40			%
R _L	Return Loss				-12	dB
P _d	Power Droop			0.5		dB
VSWR	Load Mismatch Tolerance ¹	F = 1090 MHz			4.0:1	

FUNCTIONAL CHARACTERISTICS @ 25°C

BV _{ebo}	Emitter to Base Breakdown	I _e = 30 mA	3.5			V
BV _{ces}	Collector to Emitter Breakdown	I _c = 50 mA	65			V
h _{FE}	DC – Current Gain	V _{ce} = 5V, I _c = 5A	20			
θ _{jc} ¹	Thermal Resistance				0.12	°C/W

NOTES: 1. At rated output power and pulse conditions
2. 128 µs burst, 0.5 µs on/0.5 µs off, 6.4 ms period

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