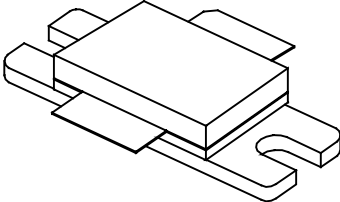




MDS550L

550 Watts, 45 Volts, Pulsed
Avionics 1090 MHz

PRELIMINARY

<p>GENERAL DESCRIPTION</p> <p>The MDS550L is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 1090 MHz. The transistor includes input and output prematch for broadband performance. The device has gold thin-film metallization and diffused ballasting for proven highest MTTF. Low thermal resistance. Package reduces junction temperature, extends life, high strength lead braze.</p>	<p style="text-align: center;">CASE OUTLINE 55SW Style 1</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation Device Dissipation @25°C 1166 W</p> <p>Maximum Voltage and Current Collector to Base Voltage (BV_{ces}) 55 V Emitter to Base Voltage (BV_{ebo}) 3.5 V Collector Current (I_c) 40 mA</p> <p>Maximum Temperatures Storage Temperature -65 to +150 °C Operating Junction Temperature +200 °C</p>	

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	$f = 1090 \text{ MHz}$ (Note 2)	550			W
P_{in}	Power Input	$V_{cc} = 45 \text{ Volts}$			90	W
P_g	Power Gain	$PW = \text{NOTE 1}$	7.8			dB
η_c	Collector Efficiency	$DF = \text{NOTE 1}$		45		%
VSWR	Load Mismatch Tolerance	$f = 1090 \text{ MHz}$			4:1	
P_d	Pulse Droop	$f = 1090 \text{ MHz}$ (NOTE 2)			0.5	

FUNCTIONAL CHARACTERISTICS @ 25°C

BV_{ebo}^*	Emitter to Base Breakdown	$I_e = 50 \text{ mA}$	3.5			V
BV_{ces}	Collector to Emitter Breakdown	$I_c = 30 \text{ mA}$	55			V
h_{FE}^*	DC – Current Gain	$V_{ce} = 5V, I_c = 5.0 \text{ A}$	20			
θ_{jc}^2	Thermal Resistance				0.15	°C/W

NOTE 1: MODE-S PULSE BURST 2160 μs @ 50% DUTY CYCLE, LONG TERM $DF = 1\%$.

NOTE 2: AT RATED PULSE CONDITIONS

*: Not measurable due to internal EB returns

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