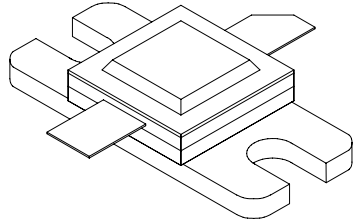


<p>GENERAL DESCRIPTION</p> <p>The MDS150 is a high power COMMON BASE bipolar transistor. It is designed for MODE-S systems in the 1030 - 1090 MHz frequency band. The transistor includes input prematch for broadband performance. The device has gold thin-film metallization and diffused ballasting in a hermetically sealed package for proven highest MTTF.</p>	<p style="text-align: center;">CASE OUTLINE 55AW Style 1</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation Device Dissipation @25°C¹ 350 W</p> <p>Maximum Voltage and Current Collector to Emitter Voltage (BV_{ces}) 60 V Emitter to Base Voltage (BV_{ebo}) 3.5 V Peak Collector Current (I_c) 4 A</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 = 1030, 1090 MHz	150			W
P _{in}	Power Input	V _{cc} = 50 Volts			20	W
P _g	Power Gain	PW = Note 2	10			dB
η _c	Collector Efficiency	DF = Note 2		34		%
VSWR ¹	Load Mismatch Tolerance				3:1	
Pd ¹	Pulse Droop				0.5	dB
Trise ¹	Rise Time				100	nSec

FUNCTIONAL CHARACTERISTICS @ 25°C

BV _{ebo}	Emitter to Base Breakdown	I _e = 5 mA	3.5			V
BV _{ces}	Collector to Emitter Breakdown	I _c = 25 mA	60			V
BV _{cbo}	Collector to Base Breakdown	I _c = 25 mA	60			V
h _{FE}	DC – Current Gain	V _{ce} = 5V, I _c = 500 mA	20			
θ _{jc} ¹	Thermal Resistance				0.5	°C/W

NOTE 1: AT RATED OUTPUT POWER AND PULSE CONDITIONS

NOTE 2: Burst: 0.5uS ON, 0.5uS OFF x 120, repeated every 6.4mS

Initial Release - August 2007 Rev. A

TEST FIXTURE LAYOUT AND SCHEMATIC

- COMPONENTS
 C1=220uF electrolytic cap, 63V
 C2=100pF ATC Chip
 C3=47pF ATC Chip
 C4=1.3pF ATC Chip
 C5=C7=C9=1pF ATC Chip
 C6=3.6pF ATC Chip
 C8=2.2pF ATC Chip
 C10=1.5pF ATC Chip
 L1=#21AWGj Length=1"
 L2=#21AWGj 6 turn; I.D.=0.1"
 R1=22kOhm

