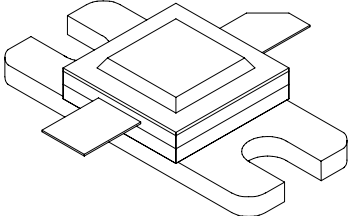


<p><b>GENERAL DESCRIPTION</b></p> <p>The MDS150 is a high power COMMON BASE bipolar transistor. It is designed for MODE-S systems in the 1030 - 1090 MHz frequency band. The transistor includes input prematch for broadband performance. The device has gold thin-film metallization and diffused ballasting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

**FUNCTIONAL CHARACTERISTICS @ 25°C**

BV <sub>ebo</sub>	Emitter to Base Breakdown	I <sub>e</sub> = 5 mA	3.5			V
BV <sub>ces</sub>	Collector to Emitter Breakdown	I <sub>c</sub> = 25 mA	60			V
BV <sub>cbo</sub>	Collector to Base Breakdown	I <sub>c</sub> = 25 mA	60			V
h <sub>FE</sub>	DC – Current Gain	V <sub>ce</sub> = 5V, I <sub>c</sub> = 500 mA	20			
θ <sub>jc</sub> <sup>1</sup>	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

