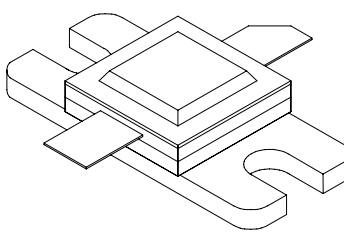




## MDS60L

60 Watts, 50 Volts, Pulsed  
Avionics 1030 - 1090 MHz

<p><b>GENERAL DESCRIPTION</b></p> <p>The MDS60L is a high power COMMON BASE bipolar transistor. It is designed for MODE-S ELM systems in the 1030 - 1090 MHz frequency band. The transistor includes a double 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><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>                      120 W</p> <p><b>Maximum Voltage and Current</b> Collector to Emitter Voltage (BV<sub>ces</sub>)        65 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	60			W
P <sub>in</sub>	Power Input	V <sub>cc</sub> = 50 Volts			6	W
P <sub>g</sub>	Power Gain	PW = Note 2	10			dB
η <sub>c</sub>	Collector Efficiency	DF = Note 2		34		%
VSWR	Load Mismatch Tolerance				2:1	
Pd <sup>1</sup>	Pulse Droop				0.8	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	65			V
BV <sub>cbo</sub>	Collector to Base Breakdown	I <sub>c</sub> = 25 mA	65			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

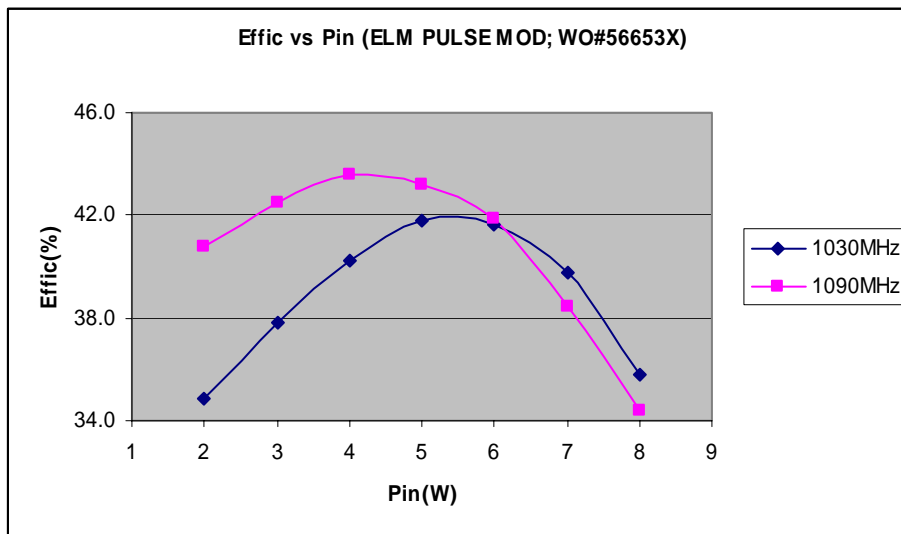
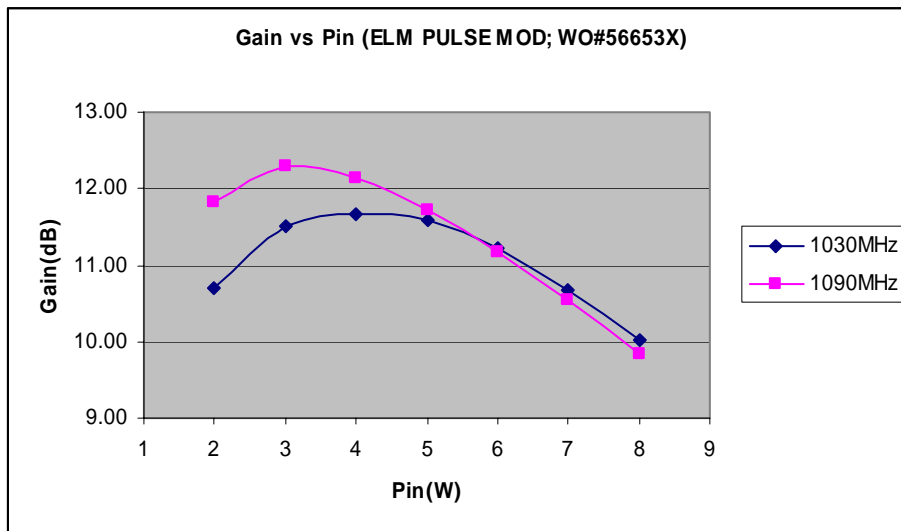
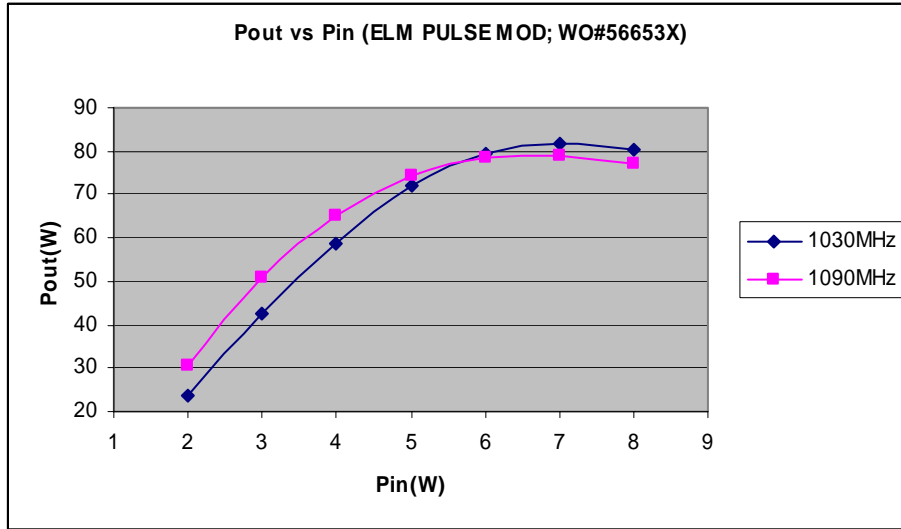
NOTE 1: AT RATED OUTPUT POWER AND PULSE CONDITIONS

NOTE 2: ELM Burst: 32μSec ON/ 18μSec OFF x 48, repeated at 23mSec

Rev B: Updated July 2009

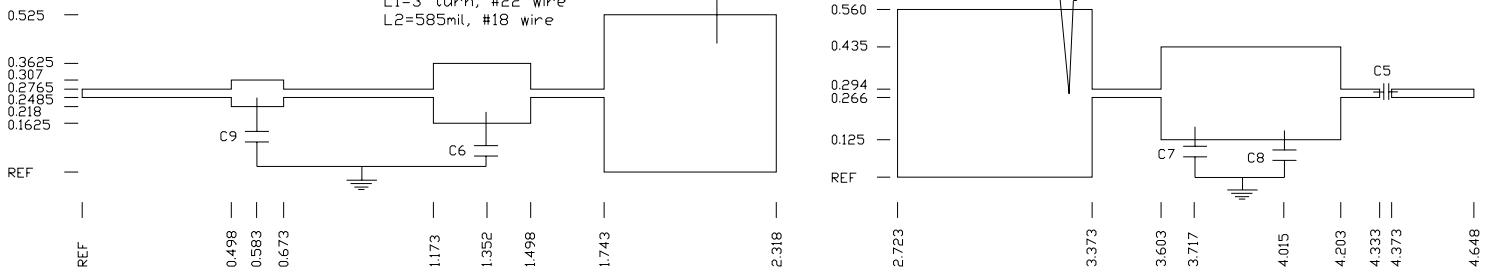
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MDS60L SAMPLE RF DATA (SN#2-8; WO#56653X)



# MDS60L TEST FIXTURE

- C1=1000uF electrolytic cap
- C2=100uF electrolytic cap
- C3=0.1uF chip cap
- C4=C5=82pF chip cap
- C6=1.5pF chip cap
- C7=C8=0.5pF chip cap
- C9=0.5pF chip cap
- R1=4.2 ohm resistor
- L1=3 turn, #22 wire
- L2=585mil, #18 wire



NOTE: Dimensions in Inches

MDS60L

