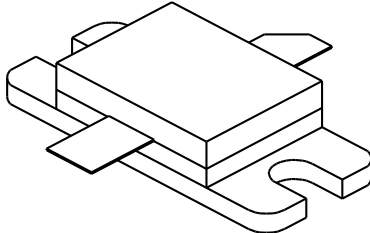


# DME 500

500 Watts, 50 Volts, Pulsed  
Avionics 1025 - 1150 MHz

<p><b>GENERAL DESCRIPTION</b></p> <p>The DME 500 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 1025-1150 MHz. The device has gold thin-film metallization for proven highest MTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.</p>	<p><b>CASE OUTLINE</b> <b>55KT, STYLE 1</b></p> 
<p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p>Maximum Power Dissipation @ 25°C<sup>2</sup> 1700 Watts</p> <p><b>Maximum Voltage and Current</b></p> <p>BVces Collector to Base Voltage 55 Volts          BVebo Emitter to Base Voltage 3.5 Volts          Ic Collector Current 40 Amps</p> <p><b>Maximum Temperatures</b></p> <p>Storage Temperature - 65 to + 200°C          Operating Junction Temperature + 200°C</p>	

## ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>P<sub>out</sub></b>	Power Out	F = 1025-1150 MHz	500			Watts
<b>P<sub>in</sub></b>	Power Input	V <sub>cc</sub> = 50 Volts			125	Watts
<b>P<sub>g</sub></b>	Power Gain	PW = 10 μsec	6.0	6.5		dB
<b>η<sub>c</sub></b>	Collector Efficiency	DF = 1%		35		%
<b>VSWR</b>	Load Mismatch Tolerance	F = 1090 MHz			10:1	

<b>BVebo</b>	Emitter to Base Breakdown	I <sub>e</sub> = 30 mA	3.5			Volts
<b>BVces</b>	Collector to Emitter Breakdown	I <sub>c</sub> = 40 mA	55			Volts
<b>h<sub>FE</sub></b>	DC - Current Gain	I <sub>c</sub> = 500 mA, V <sub>ce</sub> = 5 V	10		100	
<b>θ<sub>jc</sub><sup>2</sup></b>	Thermal Resistance				0.1	°C/W

Note 1: At rated output power and pulse conditions  
 2: At rated pulse conditions

Initial Issue June, 1994

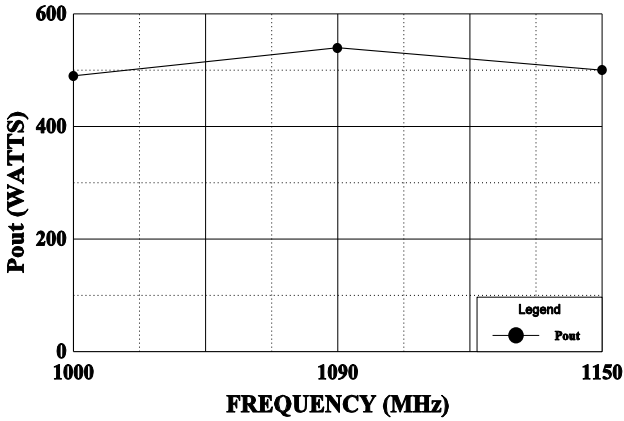
GHz TECHNOLOGY INC. RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE. GHz RECOMMENDS THAT BEFORE THE PRODUCT(S) DESCRIBED HEREIN ARE WRITTEN INTO SPECIFICATIONS, OR USED IN CRITICAL APPLICATIONS, THAT THE PERFORMANCE CHARACTERISTICS BE VERIFIED BY CONTACTING THE FACTORY.



**GHZ TECHNOLOGY**  
RF-MICROWAVE SILICON POWER TRANSISTORS

**POWER OUTPUT**

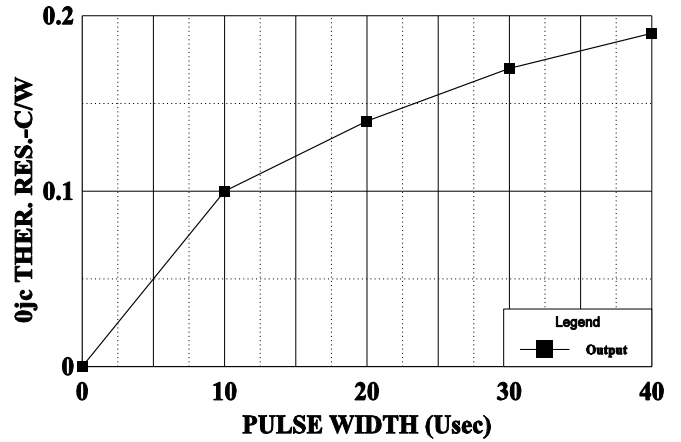
Vcc = 50 V, Pin = 125 W Peak



**DME 500**

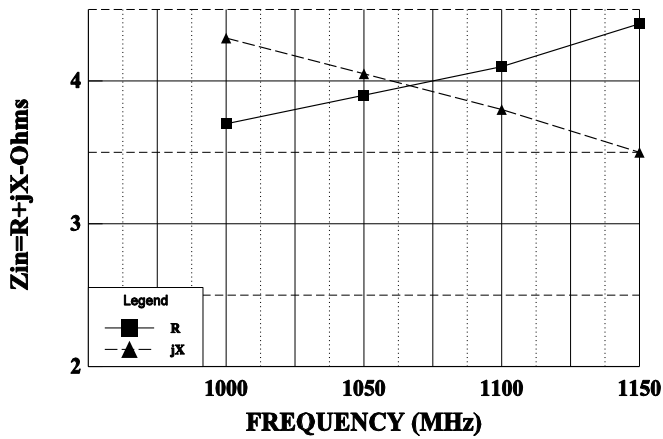
**THERMAL RESISTANCE vs PULSE WIDTH**

Vcc = 50 V, Tf = 30 C



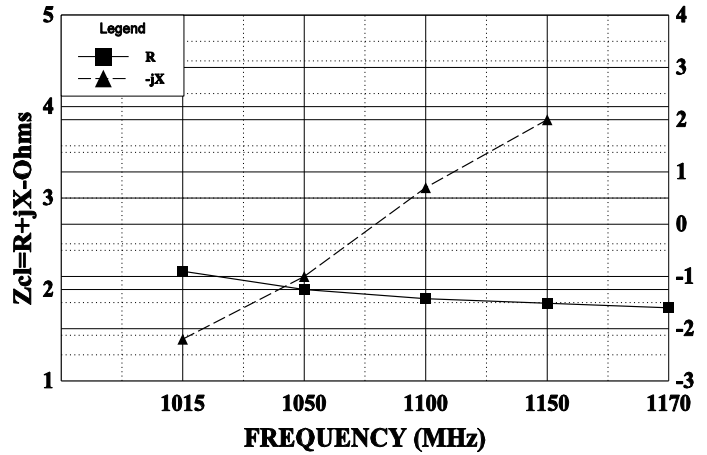
**SERIES INPUT IMPEDANCE vs FREQUENCY**

Vcc = 50 V, Po = 250 W



**SERIES LOAD IMPEDANCE vs FREQUENCY**

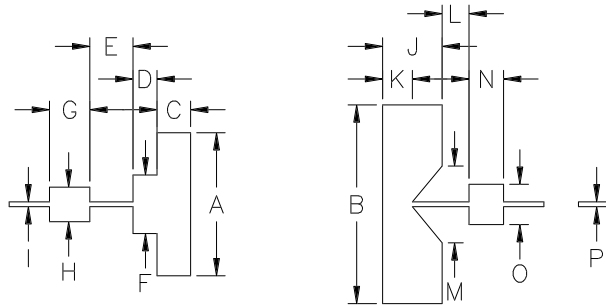
Vcc = 50 V, Po = 500 W



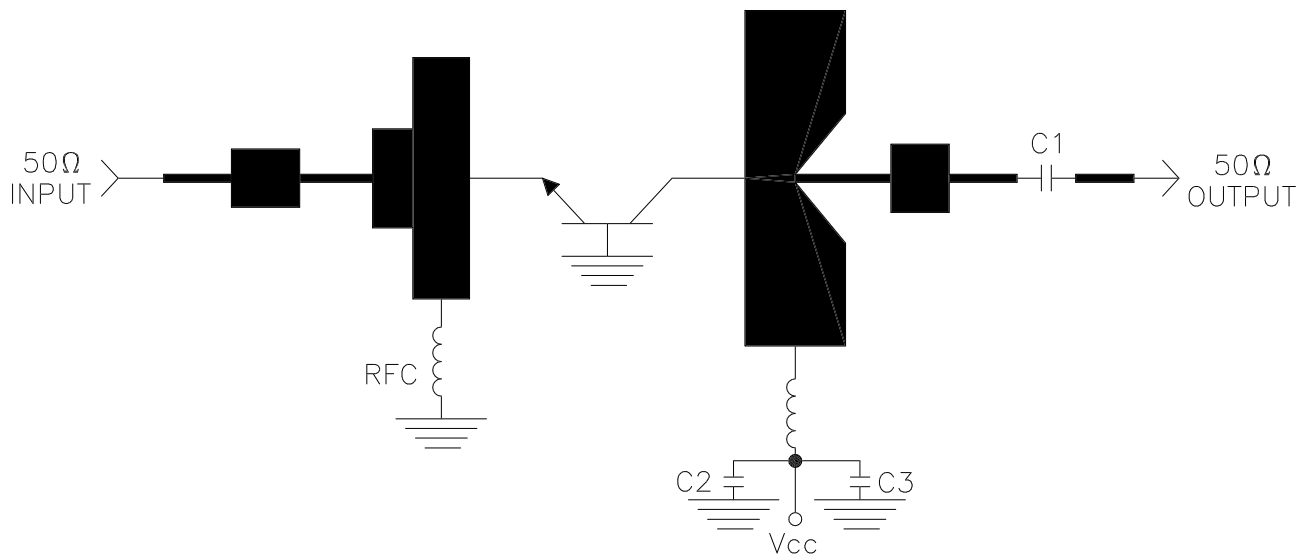
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.745
B	1.035
C	.175
D	.125
E	.225
F	.305
G	.210
H	.180
I	.025
J	.310
K	.155
L	.140
M	.400
N	.180
O	.210
P	.025



1025/1150 MHz TEST AMPLIFIER



— = Microstrip line on E10, t=0.025"  
 C1, C2 = 82PF chip capacitor  
 C3 = 500μ Fdc @ 75V capacitor