

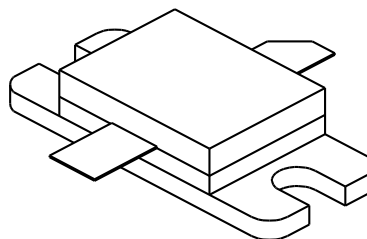
DME 500

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

GENERAL DESCRIPTION

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 MTTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.

CASE OUTLINE 55KT, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C² 1700 Watts

Maximum Voltage and Current

BVces Collector to Base Voltage 55 Volts

BVebo Emitter to Base Voltage 3.5 Volts

Ic Collector Current 40 Amps

Maximum Temperatures

Storage Temperature - 65 to + 200°C

Operating Junction Temperature + 200°C

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 1025-1150 MHz	500			Watts
P_{in}	Power Input	V _{cc} = 50 Volts			125	Watts
P_g	Power Gain	PW = 10 μsec	6.0	6.5		dB
η_c	Collector Efficiency	DF = 1%		35		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			10:1	

BVebo	Emitter to Base Breakdown	I _e = 30 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	I _c = 40 mA	55			Volts
h_{FE}	DC - Current Gain	I _c = 500 mA, V _{ce} = 5 V	10		100	
θ_{jc}²	Thermal Resistance				0.1	°C/W

Note 1: At rated output power and pulse conditions

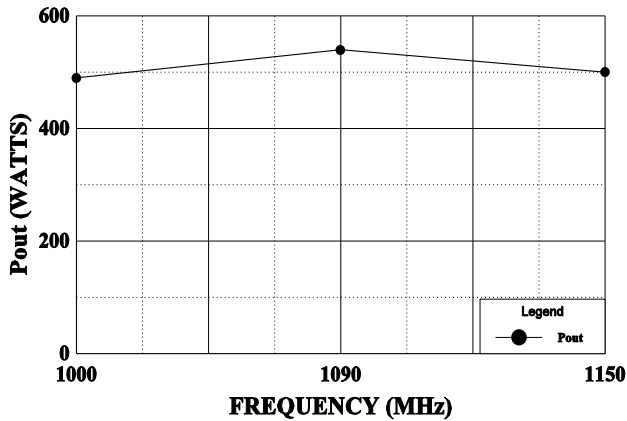
2: At rated pulse conditions

Initial Issue June, 1994

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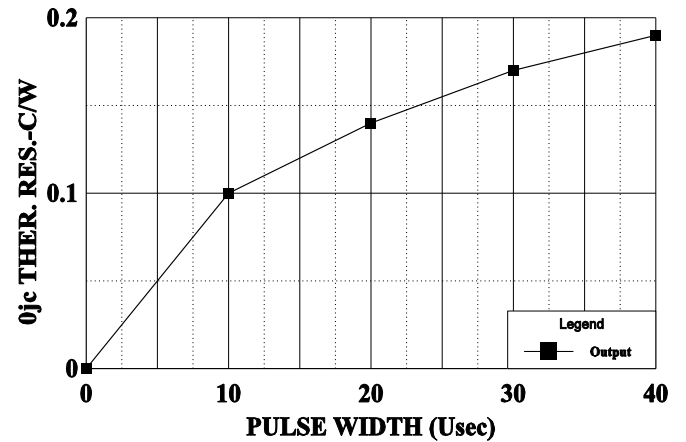
Vcc = 50 V, Pin = 125 W Peak



DME 500

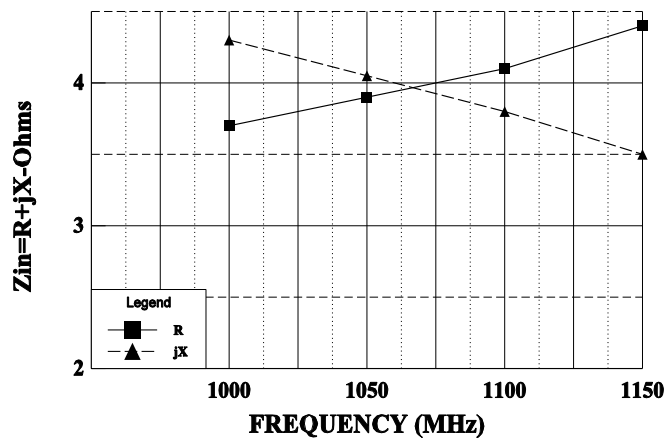
THERMAL RESISTANCE vs PULSE WIDTH

Vcc = 50 V, Tf = 30 C



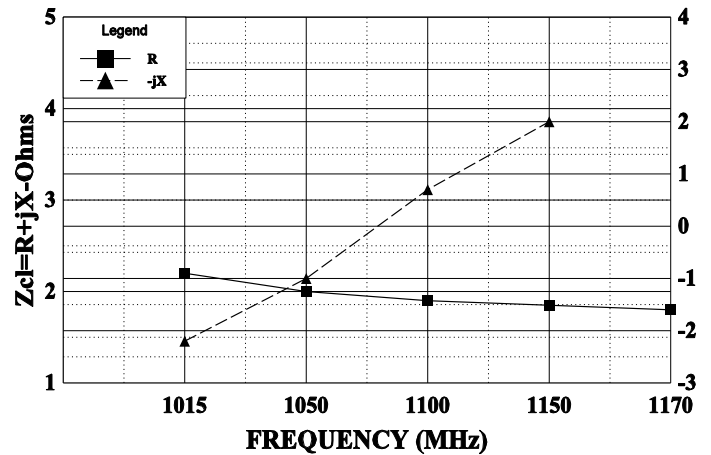
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 50 V, Po = 250 W



SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 50 V, Po = 500 W



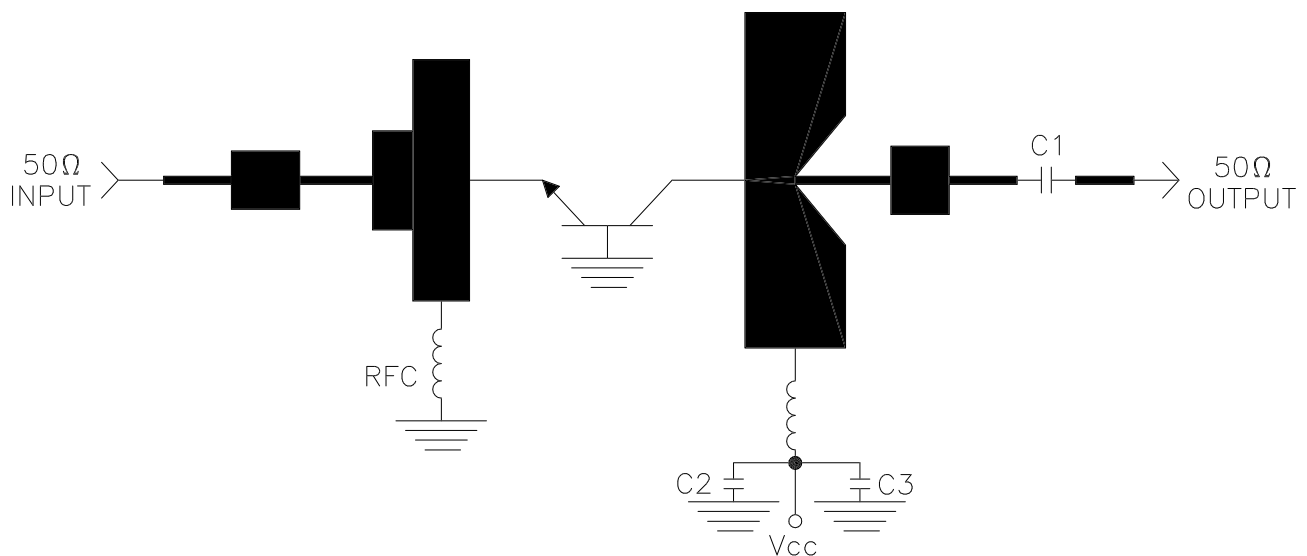
REVISIONS		ZONE	REV	DESCRIPTION	DATE	APPROVED
DIM	INCHES					
A	.745					
B	1.035					
C	.175					
D	.125					
E	.225					
F	.305					
G	.210					
H	.180					
I	.025					
J	.310					
K	.155					
L	.140					
M	.400					
N	.180					
O	.210					
P	.025					

1025/1150 MHz TEST AMPLIFIER

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

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A	.745
B	1.035
C	.175
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CH₂ TECHNOLOGY

CAGE
0PJR2

DWG NO.

DME 500

REV **A**

SCALE

1 / 1

SHEET