

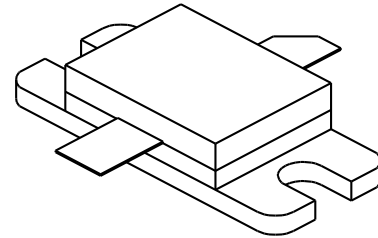
DME 500

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 MTF. 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°C ²	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
Pout	Power Out	F = 1025-1150 MHz	500			Watts
Pin	Power Input	Vcc = 50 Volts			125	Watts
Pg	Power Gain	PW = 10 μsec	6.0	6.5		dB
ηc	Collector Efficiency	DF = 1%		35		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			10:1	

BVebo	Emitter to Base Breakdown	Ie = 30 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ic = 40 mA	55			Volts
hFE	DC - Current Gain	Ic = 500 mA, Vce = 5 V	10		100	
θjc 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

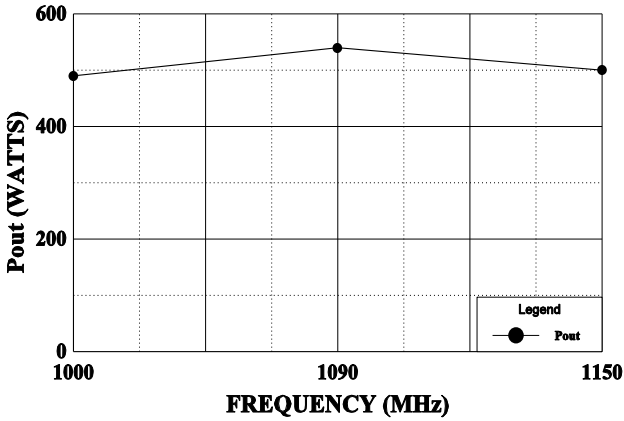
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GHZ TECHNOLOGY
RF-MICROWAVE SILICON POWER TRANSISTORS

POWER OUTPUT

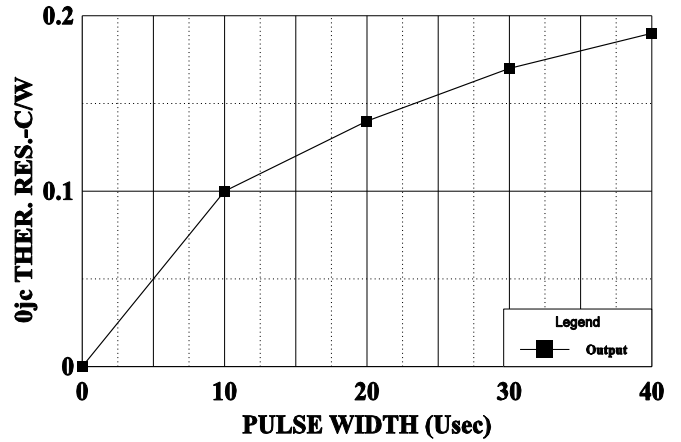
Vcc = 50 V, Pin = 125 W Peak



DME 500

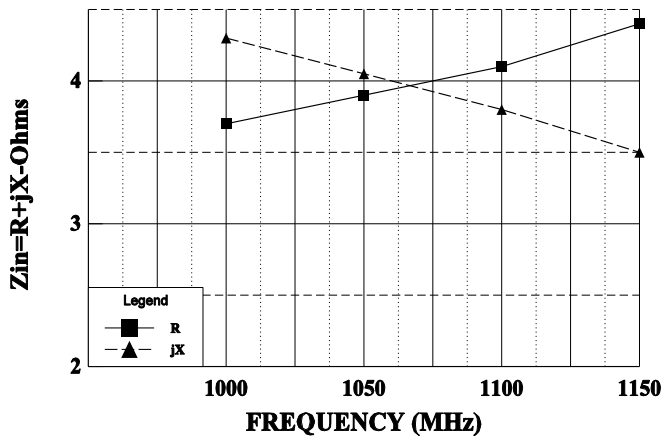
THERMAL RESISTANCE vs PULSE WIDTH

Vcc = 50 V, Tf = 30 C



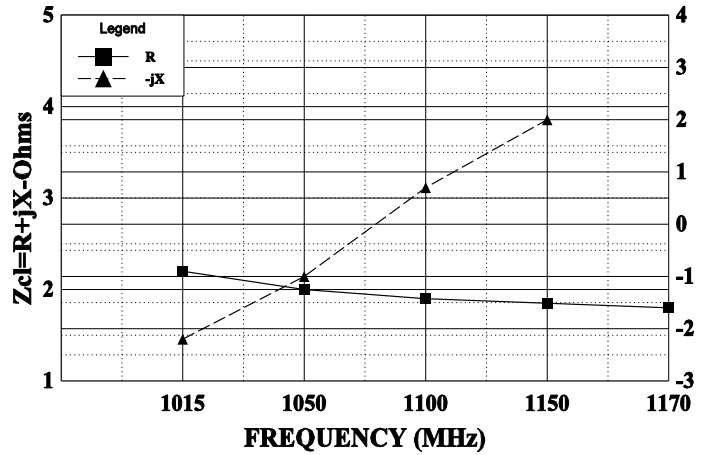
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 50 V, Po = 250 W



SERIES LOAD IMPEDANCE vs FREQUENCY

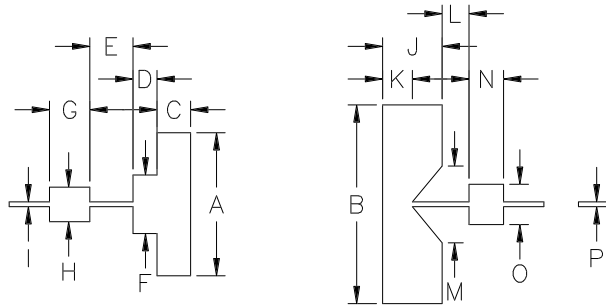
Vcc = 50 V, Po = 500 W



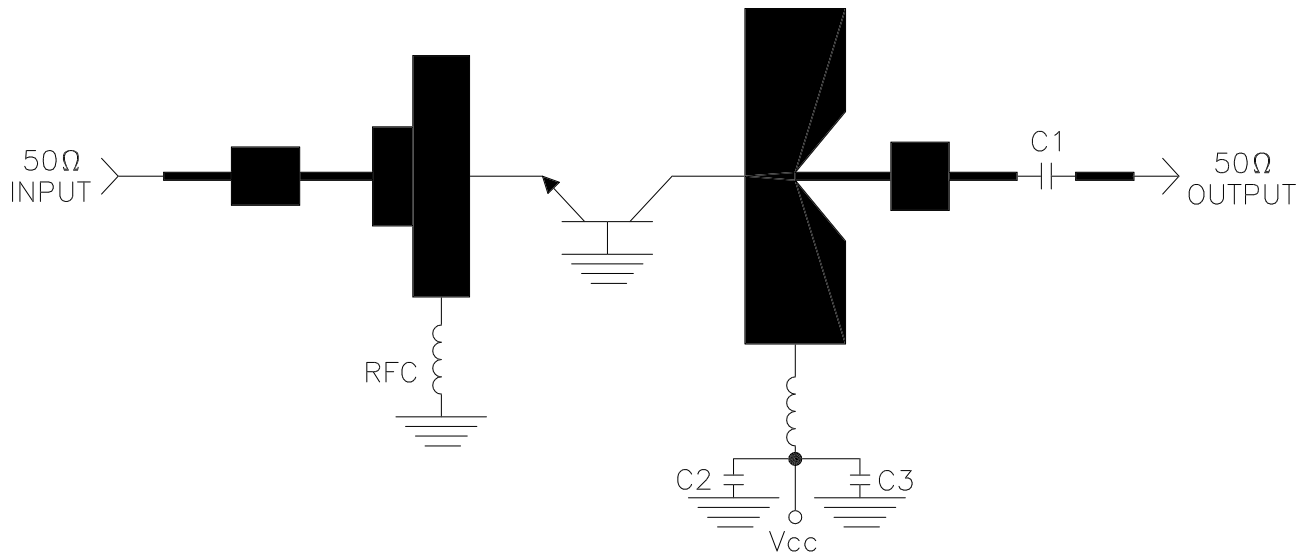
REVISIONS

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



CAGE OPJR2	DWG NO. DME 500	REV A
SCALE 1/1	SHEET	