

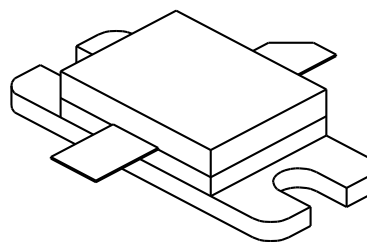
MDS170L

170 Watts, 36 Volts, Pulsed
Avionics 1030/1090 MHz

GENERAL DESCRIPTION

The MDS170L is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 1030 - 1090 MHz. The transistor includes input and output prematch for broadband performance. The device has gold thin-film metallization and diffused ballasting for proven highest MTTF. Low thermal resistance Solder Sealed Package reduces junction temperature, extends life.

CASE OUTLINE 55KT, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C² 350 Watts

Maximum Voltage and Current

BVces Collector to Base Voltage 50 Volts
BVebo Emitter to Base Voltage 3.5 Volts
Ic Collector Current 15 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 = 1030 - 1090 MHz	170			Watts
P _{in}	Power Input	V _{cc} = 36 Volts			34	Watts
P _g	Power Gain	PW = Note 1	7			dB
η _c	Collector Efficiency	DF = Note 1		40		%
VSWR	Load Mismatch Tolerance	F = 1030 MHz			10:1	

BVebo	Emitter to Base Breakdown	I _e = 20 mA				Volts
BVces	Collector to Emitter Breakdown	I _c = 20 mA				Volts
h _{FE}	DC - Current Gain	I _c = 20 mA, V _{ce} = 5 V	20			
θ _{jc} ²	Thermal Resistance				0.5	°C/W

Note 1: MODE- S Pulse Burst, 120 μs at 50% Duty, Long term duty = 5%.

2: At rated pulse conditions

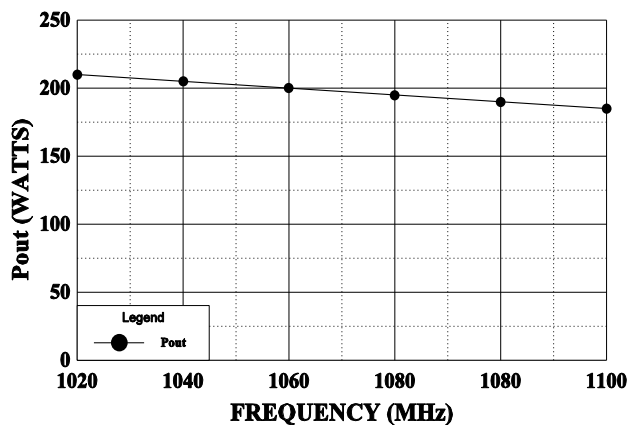
Initial Issue January, 1996

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 Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

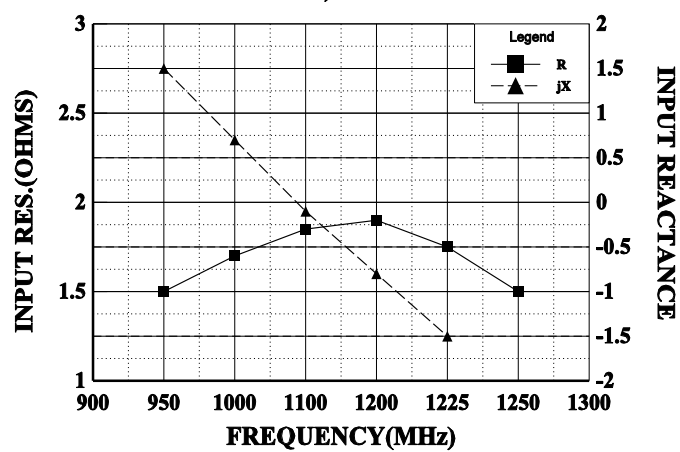
POWER OUTPUT vs FREQUENCY

$V_{cc} = 36\text{ V}$, $P_{in} = 34\text{ W}$



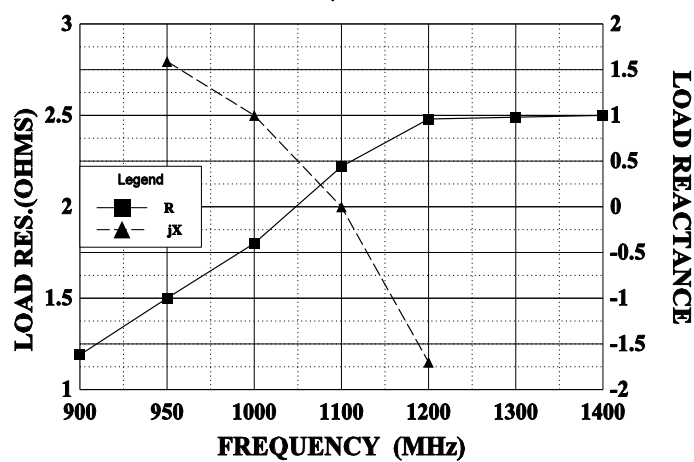
SERIES INPUT IMPEDANCE vs FREQUENCY

$V_{cc} = 36\text{ V}$, $P_o = 145\text{ W}$



SERIES LOAD IMPEDANCE vs FREQUENCY

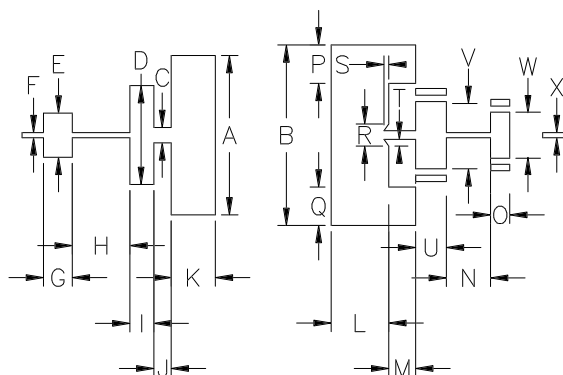
$V_{cc} = 36\text{ V}$, $P_o = 145\text{ W}$



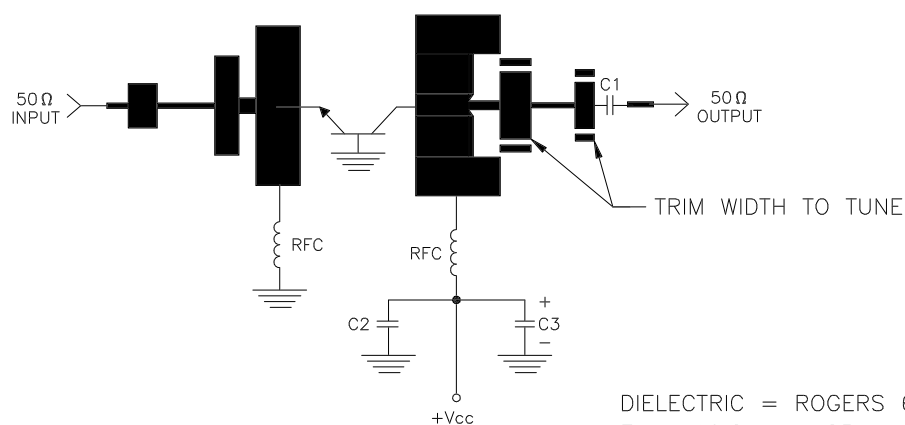
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
------	-----	-------------	------	----------

DIM	INCHES
A	.830
B	.940
C	.080
D	.515
E	.230
F	.026
G	.150
H	.300
I	.125
J	.090
K	.230
L	.300
M	.140
N	.230
O	.100
P	.200
Q	.200
R	.115
S	.025
T	.035
U	.160
V	.350
W	.240
X	.026



MDS170L TEST CIRCUIT



DIELECTRIC = ROGERS 6010
 $\epsilon_r = 10.2$, $t = 25$
 $C1, C2 = 82\text{pF}$ CHIP ATC "A"
 $C3 = 1000\text{ MFD @ }50\text{V}$
 $\text{RFC} = 5\text{ turns \#22 wire } 1/16''\text{ I.D.}$



CHz TECHNOLOGY

CAGE
OPJR2

DWG NO.

MDS 170L

REV
A

SCALE

1/1

SHEET