



EIMAC

A Division of Varian Associates
SAN CARLOS, CALIFORNIA

Tentative Data

X3054

2.5 KW

POWER AMPLIFIER
C-BAND KLYSTRON

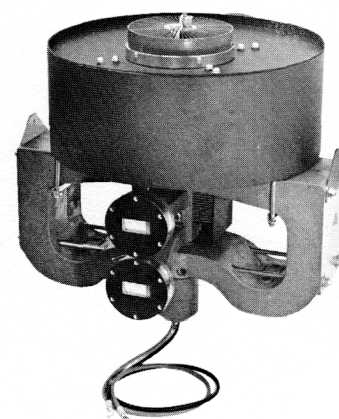
The Eimac X3054 is a five-cavity, air-cooled power amplifier klystron tunable over the frequency range of 5.925 to 6.425 gigacycles. It will deliver a minimum CW output power of 2.5 kilowatts with a minimum power gain of 50 decibels and a minimum 1 db bandwidth of 20 megacycles.

The very high gain and efficiency of this klystron make it particularly attractive for transportable equipment.

A common air inlet is used for collector and body cooling. Improved collector cooling is achieved through use of an integral plenum chamber which encloses the collector.

This klystron is focused with a permanent magnet and an auxiliary low voltage collector coil.

Both input and output rf couplings of the X3054 are fixed. The only adjustments required are the tuning of the cavities.

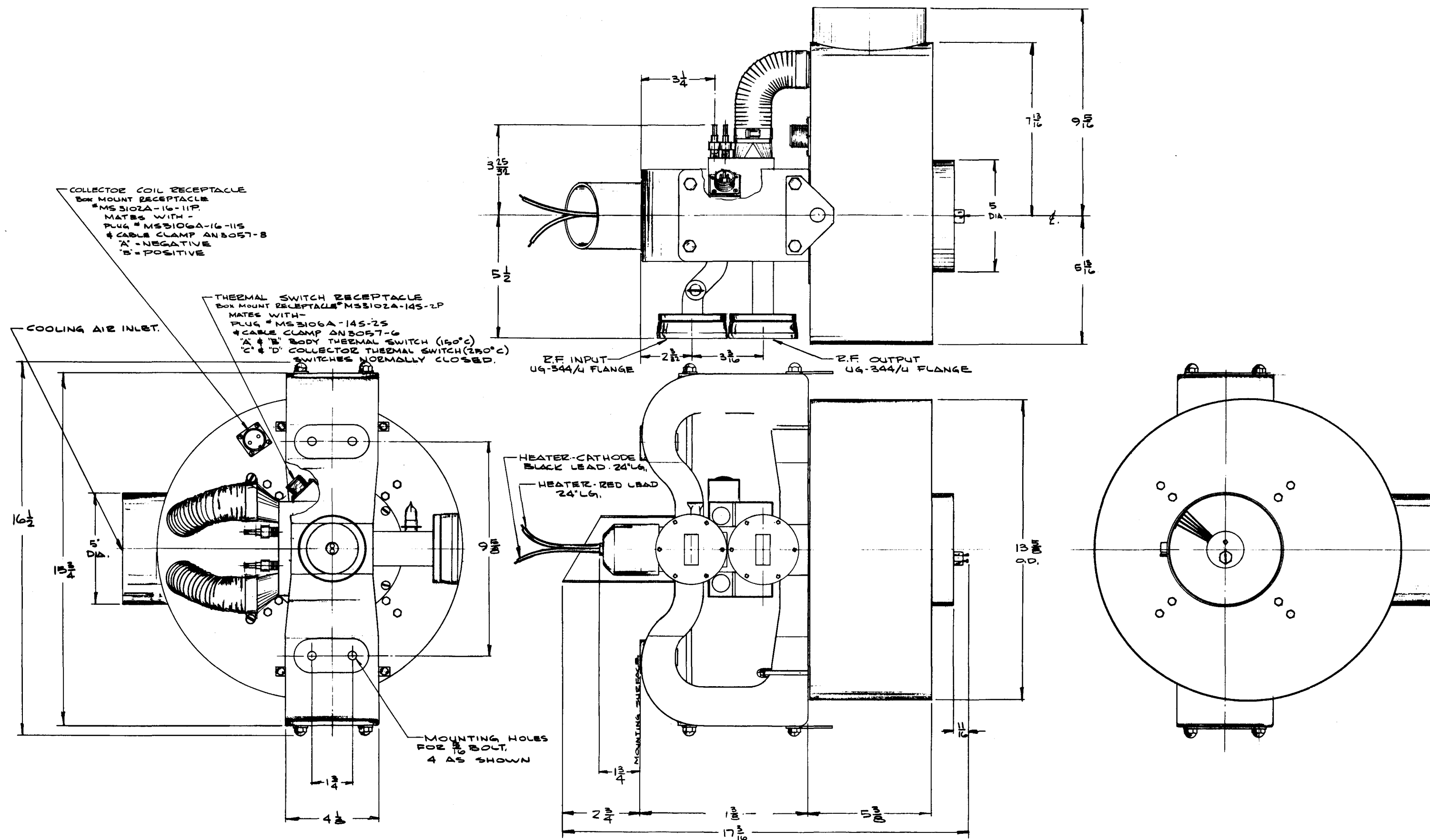


CHARACTERISTICS

ELECTRICAL

Cathode: Impregnated, Unipotential

Heating Time	-	-	-	-	-	-	-	-	-	-	-	-	-	5	minutes
Heater:															
Voltage ($\pm 5\%$)	-	-	-	-	-	-	-	-	-	-	-	-	-	5.75	volts
Current (nominal)	-	-	-	-	-	-	-	-	-	-	-	-	-	3.7	amperes
Power Gain	-	-	-	-	-	-	-	-	-	-	-	-	-	50	decibels
Output Power	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	kilowatts
Frequency Range	-	-	-	-	-	-	-	-	-	-	-	-	-	5.925-6.425	gigacycles



X3054 KLYSTRON

**MECHANICAL****Maximum Dimensions**

Length	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17½	inches
Width	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16½	inches
Depth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15½	inches
Weight	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	pounds
Input Coupling (rf)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	UG-344/U	flange
Output Coupling (rf)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	UG-344/U	flange
Maximum Tuner Start Torque	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	in-oz
Maximum Tuner Stop Torque	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	in-oz
Mounting Position	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		any

Cooling: Forced Air (25°C at sea level)

																<i>Flow Rate</i>	<i>Pressure Drop</i>
Body and Collector	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175 cfm	1.2 in. H ₂ O
Collector Coil Power Supply Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40 volts at 9 amperes	

MAXIMUM RATINGS

BEAM VOLTAGE (dc)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.5	kilovolts
BEAM CURRENT (dc)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.85	ampere
BEAM INPUT POWER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.5	kilowatts
BODY CURRENT WITH RF DRIVE (dc)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	milliamperes
COLLECTOR DISSIPATION	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.5	kilowatts
LOAD VSWR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5:1	
TEMPERATURE OF BODY AND TUNER FINS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150°C	
TEMPERATURE OF COLLECTOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250°C	

TYPICAL OPERATION — TUNED FOR BROADBAND OPERATION

Frequency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6175	megacycles
Output Power	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	kilowatts
Driving Power	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	milliwatts
Gain	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	decibels
Beam Voltage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.2	kilovolts dc
Beam Current	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.74	ampere dc
Beam Power Efficiency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	percent
1 db Bandwidth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	megacycles
Body Current	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	milliamperes dc
Collector Coil Current	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	amperes dc

For additional information or information regarding a specific application, write to
Eimac, a Division of Varian Associates, 301 Industrial Way, San Carlos, California