

EIMAC

A Division of Varian Associates
SAN CARLOS, CALIFORNIA

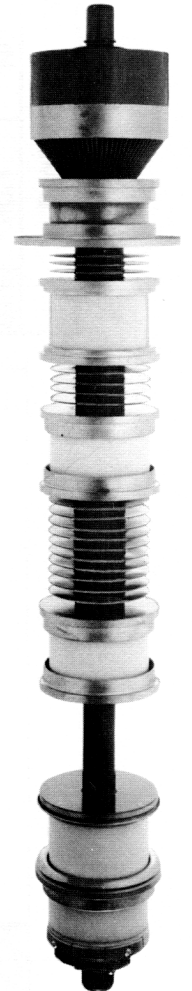
X3002

**PULSE AMPLIFIER
L-BAND KLYSTRON**

The Eimac X3002 is a three-cavity, magnetically focused, pulse amplifier klystron. Designed for use at frequencies between 1235 and 1365 megacycles, this klystron will deliver a minimum peak output power of 4 kilowatts with a power gain of at least 23 decibels during long-pulse service.

Tuning for the X3002 is accomplished by means of external resonant cavities which enclose the cylindrical ceramic windows of the klystron. This design permits an unlimited number of tuning cycles without risk of damage to the vacuum seals.

Eimac Klystron Amplifier Circuit Assembly H-147 is provided for use with the X3002 to cover the frequency range of 1235 to 1365 megacycles. This assembly includes a klystron supporting structure, focusing coils, external cavities, and adjustable load couplers for the input and output cavities.



CHARACTERISTICS

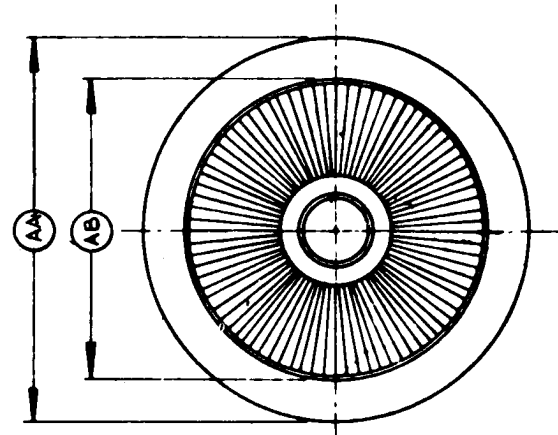
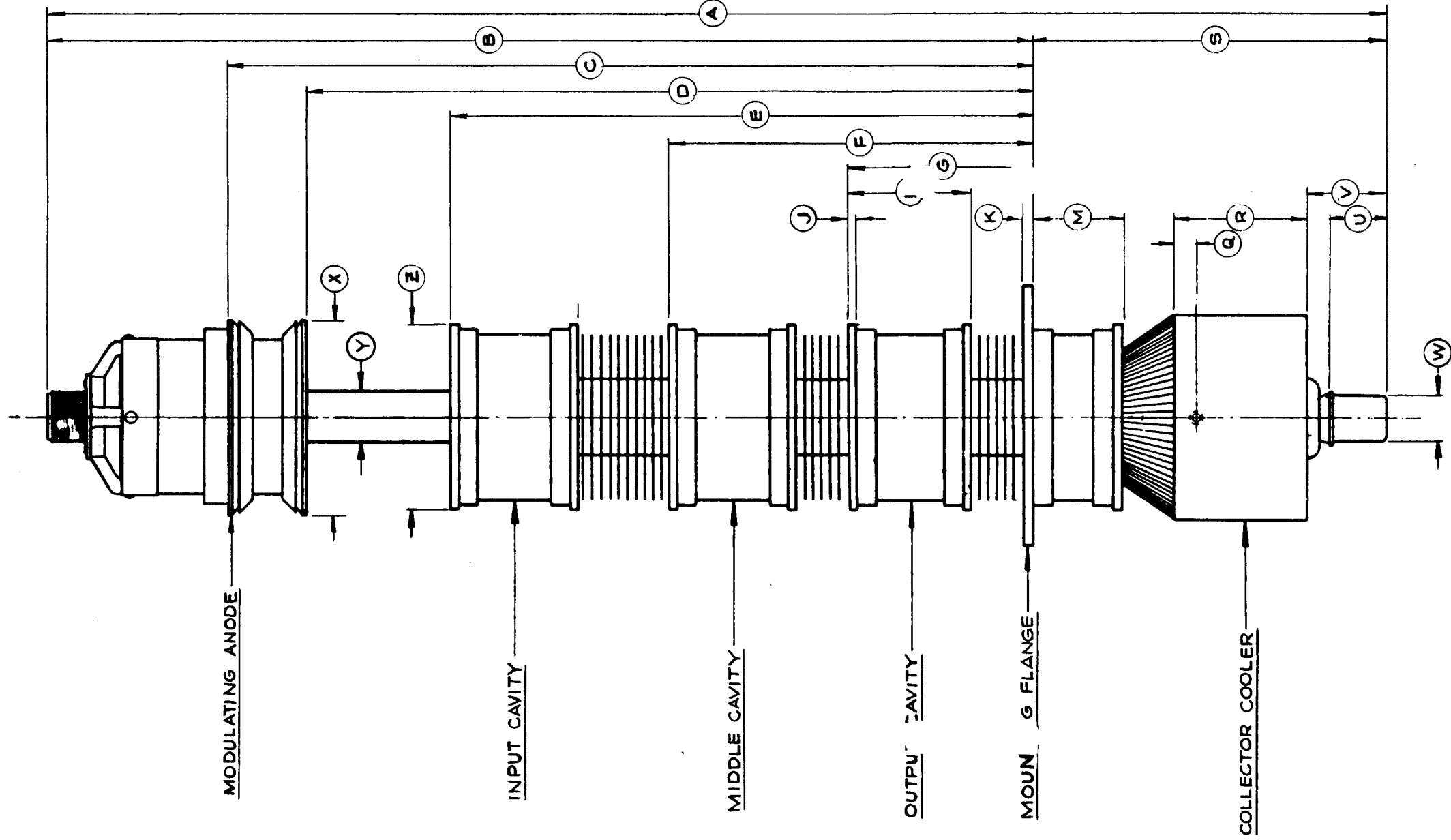
ELECTRICAL

Cathode: Unipotential									
Minimum Heating Time	-	-	-	-	-	-	-	-	5 minutes
Heater: Voltage ($\pm 5\%$)	-	-	-	-	-	-	-	-	7.5 volts
Current	-	-	-	-	-	-	-	-	5.5 amperes
Minimum Power Gain	-	-	-	-	-	-	-	-	23 decibels
Minimum Output Power	-	-	-	-	-	-	-	-	4 kilowatts
Frequency Range	-	-	-	-	-	-	-	1235 to 1365	megacycles
Phase Shift as a Function of Beam Voltage	-	-	-	-	-	-	-	0.0005	degrees/volt

MECHANICAL

Operating Position	-	-	-	-	-	-	-	-	-	Vertical, cathode end up
Coupling (rf): Input	-	-	-	-	-	-	-	-	-	Type "N", Coaxial Fitting
Output	-	-	-	-	-	-	-	-	-	7/8 inch, 50-ohm coaxial
Cooling: (20 degrees C inlet air at sea level)										
Body	-	-	-	-	-	-	-	-	-	Flow Rate 100 cfm Pressure Drop 1.5" H ₂ O
Collector	-	-	-	-	-	-	-	-	-	150 cfm 1.6" H ₂ O
X3002 Length	-	-	-	-	-	-	-	-	-	27 inches
X3002 Diameter	-	-	-	-	-	-	-	-	-	5.3 inches
X3002 Weight	-	-	-	-	-	-	-	-	-	23 pounds
H-147 Height	-	-	-	-	-	-	-	-	-	15 inches
H-147 Diameter	-	-	-	-	-	-	-	-	-	18 inches
H-147 Weight	-	-	-	-	-	-	-	-	-	155 pounds

DIMENSION DATA			
REF.	NOM.	MIN.	MAX.
A	26.718		
B	19.750		
C	15.812		
D	14.312		
E	11.500		
F	7.250		
G	3.750		
H	2.500		
J	.750		
K	.250		
M	1.687		
Q	.437		
R	2.625		
S	6.968		
U	1.125		
V	1.812		
W	.875		
X	3.812		
Y	1.500		
Z	3.625		
AA	5.125		
AB	4.125		



X3002 OUTLINE DRAWING



FOCUS COIL POWER SUPPLY REQUIREMENTS

Body Coil - - - - -	Variable to 200 volts, 3 amperes maximum
Prefocus Coil - - - - -	Variable to 25 volts, 1.5 amperes maximum

**TYPICAL OPERATION
Pulse Amplifier**

Frequency - - - - -	1300	1300	megacycles
Peak Output Power - - - - -	5	3.2	kilowatts
Power Gain - - - - -	23	23	decibels
Beam Voltage - - - - -	13	10	kilovolts dc
Peak Beam Current - - - - -	1.12	0.91	amperes
Peak Modulating Anode Voltage - - - - -	5.0	4.0	kilovolts
Focus Electrode Voltage - - - - -	—50	—50	volts
Pulse Length - - - - -	2000	2000	microseconds
Duty - - - - -	3	3	percent
Efficiency - - - - -	35	40	percent

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