EIMAC

A Division of Varian Associates

SAN CARLOS, CALIFORNIA

EM1331

MAGNETICALLY SHIELDED VOLTAGE TUNABLE MAGNETRON

2200 - 2300 Mc

35 Watts

DESCRIPTION

The EM1331 Voltage Tunable Magnetron Oscillator delivers at least 35 watts over the frequency range of 2200-2300 Mc. This miniature magnetically shielded oscillator is ideally suited for applications requiring compact lightweight packaging. Its unique magnetic circuit results in negligible external magnetic field and permits the tube to contact other ferromagnetic materials with no degradation in performance.

FEATURES

- Magnetically Shielded
- Light Weight
- Linear Voltage Tuning
- Small Size
- Flat Power Output

TYPICAL PERFORMANCE

ELECTRICAL

Frequency Range	2200-2300 Mc
Anode Voltage	2060-2160 V
Cathode Current	41-44 mA
Typical Power Output	40-42 W
Anode FM Sensitivity	1 Mc/Volt
Injection Anode Voltage	500 Volts
Injection Anode Current	0.0 mA
Heater Voltage (AC or DC)	6.3 Volts
Heater Current (AC or DC)	1.0 Amp
Load Impedance	50 Ohm
Load VSWR	1.1:1
Power Variation	1 db

MECHANICAL

Operating Position	Any
Cooling	Forced Air
Electrical Connection	Flying Leads
RF Output Coupling	TNC Female
Weight	3.5 lbs. max.

MAXIMUM RATINGS*

Anode Voltage	2500 Volts
Cathode Current	60 mA
Injection Anode Voltage	750 Volts
Injection Anode Current	1 mA
Load VSWR	1.2:1

*Damage to the tube may occur if maximum ratings are exceeded.

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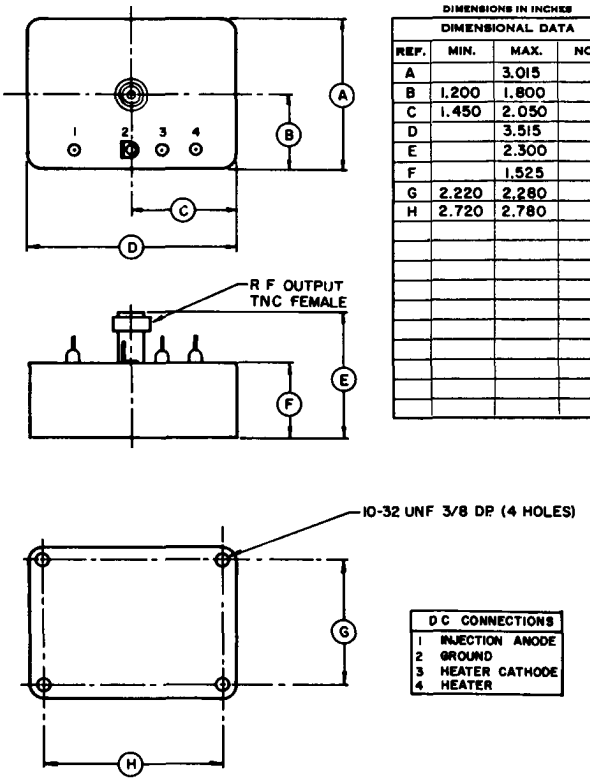
NOTES:

1. The operating frequency is a function of the anode voltage; therefore any voltage ripple on the anode supply appears as frequency modulation on the RF output.
2. The heater supply may be either alternating or direct current. If direct current is used, the heater connections *must* be connected to the negative terminal of the heater supply.
3. Cooling—To insure optimum tube performance, the magnet shell should be maintained below 70° C.
4. Temperature Stability — The permanent magnet of the shielded VTM has been temperature stabilized to minimize frequency changes caused by variations in the magnet temperature. The temperature/frequency coefficient for the shielded VTM is 0.008% of the operating frequency per degree centigrade. A positive change in temperature will always produce a positive change in frequency.

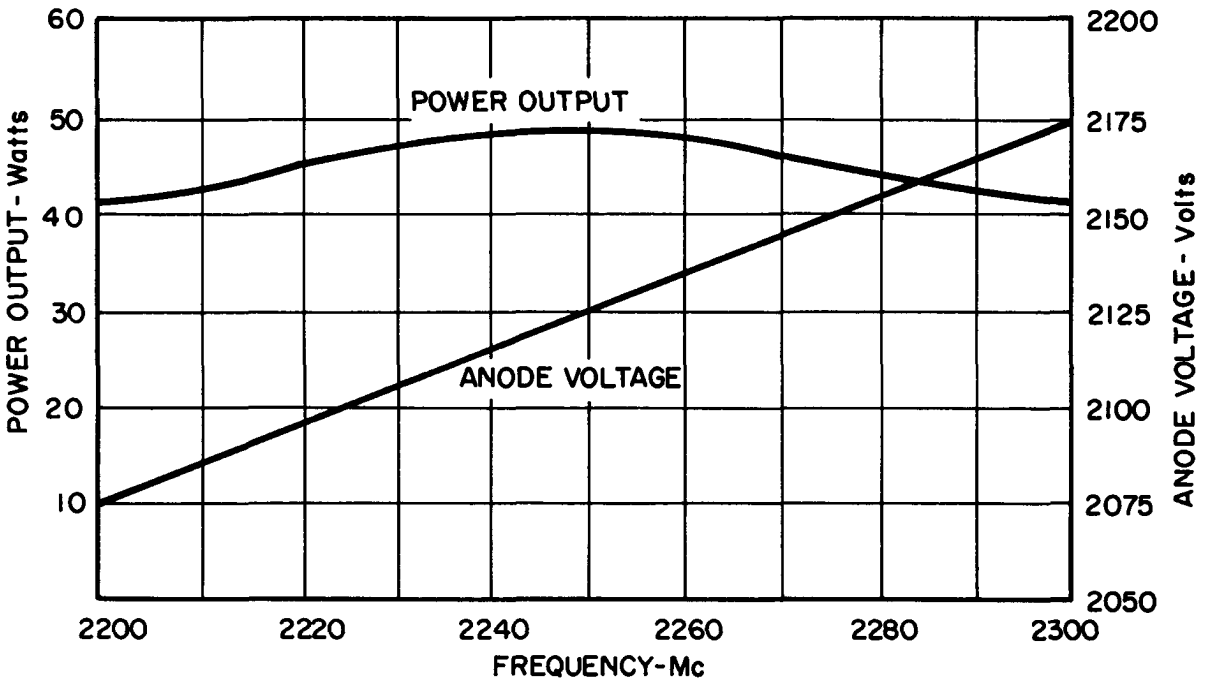


DIMENSIONS IN INCHES

DIMENSIONAL DATA

REF.	MIN.	MAX.	NOM.
A		3.015	
B	1.200	1.800	
C	1.450	2.050	
D		3.515	
E		2.300	
F		1.525	
G	2.220	2.280	
H	2.720	2.780	

DC CONNECTIONS

1	INJECTION ANODE
2	GROUND
3	HEATER CATHODE
4	HEATER

CHARACTERISTIC CURVES
Typical Performance Values