

#### EIMAC

## A Division of Varian Associates SAN CARLOS, CALIFORNIA

### EM1320

MAGNETICALLY SHIELDED VOLTAGE TUNABLE MAGNETRON

1000 - 2000 Mc

100 mw

#### DESCRIPTION

The EM1320 Voltage Tunable Magnetron Oscillator delivers at least 100 mw over the frequency range of 1000-2000 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
- Rugged



#### TYPICAL PERFORMANCE

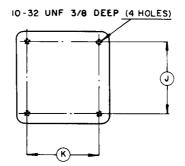
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FFF	CTRICAL															
	Frequency Range -					-	-	-	-	-	-	-	-	100	0-2000	Mc
	Anode Voltage -	-	-	-	-	-	-	-	-	-	-	-	-	92	0-1840	V
	Cathode Current -	-	-	-	-	-	-	-	-	-	-	-	-		1-6	mA
	Typical Power Output	-	-	-	-	-	-	-	-	-	-	-	-		200	mw
	Anode FM Sensitivity	-	-	-	-	-	-	-	-	-	-	-	-		1	Mc/Volt
	Injection Anode Voltag	e	-	-	-	-	-	-	-	-	-	-	-		200	Volts
	Injection Anode Curren	nt	-	-	-	-	-	-	-	-	-	-	-		0.0	mA
	Heater Voltage (AC or	DC	)	-	-	-	-	-	-	-	-	-	-		6.3	Volts
	Heater Current (AC or	DC	!)	-	-	-	-	-	-	-	-	-	-		0.9	Amp
	Load Impedance -	-	-	-	-	-	-	-	-	-	-	-	-		50	Ohm
	Load VSWR	-	-	-	-	-	-	-	-	-	-	-	-		1.1:1	
	Power Variation -	-	-	-	-	-	-	-	-	-	-	-	-		±1	db
MEC	CHANICAL															
	Operating Position -		-	-		-		-			-	-	-	-		- Any
	Cooling	-	-	-	-	-	-	-	-	-	-	-	-	-	- Co	onduction
	<b>Electrical Connection</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	- Fly	ing Leads
	RF Output Coupling				-			-	-	-						C Female
	Weight	-	-	-	-	-	-	-	-	-	-	-	-	-		1.5 lbs.
MA	XIMUM RATINGS*															
	Anode Voltage -	-	-	-	-	-	-	-	-	-	-	-	-	-	- 22	00 Volts
	Cathode Current -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12 mA
	Injection Anode Voltag	e	-	-	-	-	-	-	-	-	-	-	-	-	- 5	00 Volts
	Injection Anode Curre	nt	-	-	-	-	-	-	-	_	-	-	-	-	-	1 mA
	Load VSWR	-	-	-	-	-	-	-	-	-	-	-	-	-	- 3	3:1

<sup>\*</sup>Damage to the tube may occur if maximum ratings are exceeded.

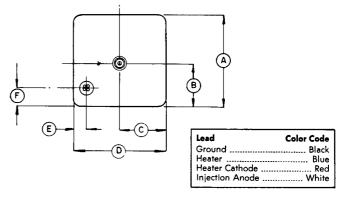


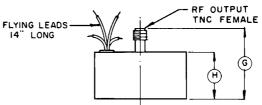
#### **NOTES:**

- 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.						
Α		3.050							
æ	1,200	1.800							
С	1.300	1.700							
D		3.050							
Ε	.300	.500							
F	.700	.900							
G		2.300							
Н		1.525							
J	2.320	2.380							
К	2.320	2.380							





# CHARACTERISTIC CURVES Typical Performance Values

