



EITEL-McCULLOUGH, INC.
SAN CARLOS, CALIFORNIA

X-1099

**VOLTAGE TUNABLE
MAGNETRON**

**FREQUENCY
530 - 655 Mc**

**MINIMUM OUTPUT
POWER 8 mW**

TYPICAL PERFORMANCE

ELECTRICAL

Frequency Range	- - - - -	530-655 Mc
Anode Voltage	- - - - -	925-1150 V
Cathode Current	- - - - -	0.5 mA
Typical Output Power	- - - - -	20-25 mW
Anode FM Sensitivity	- - - - -	.55 Mc/V
Injection Anode Voltage	- - - - -	100 V
Injection Anode Current	- - - - -	0.0 mA
Heater Voltage (AC)	- - - - -	6.3 V
Heater Current (AC)	- - - - -	0.8 A
Load Impedance	- - - - -	50 ohms
Service	- - - - -	cw
AM Noise	- - - - - (See Note #5)	-75 db

*MAXIMUM RATINGS

Anode Voltage	- - - - -	1500 V
Cathode Current	- - - - -	10 mA
Injection Anode Voltage	- - - - -	500 V
Injection Anode Current	- - - - -	1 mA

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

MECHANICAL

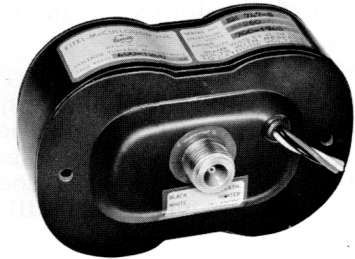
Operating Position	- - - - -	Any
Cooling	- - - - -	Conduction
Electrical Connection	- - - - -	Flexible Leads
RF Output Coupling	- - - - -	Type N Jack
Weight	- - - - -	3.5 Pounds

ENVIRONMENTAL

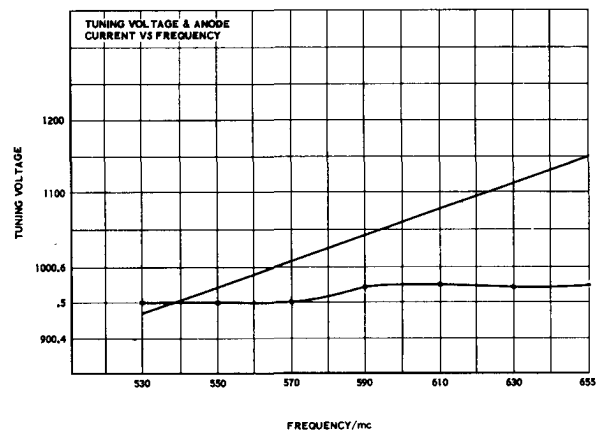
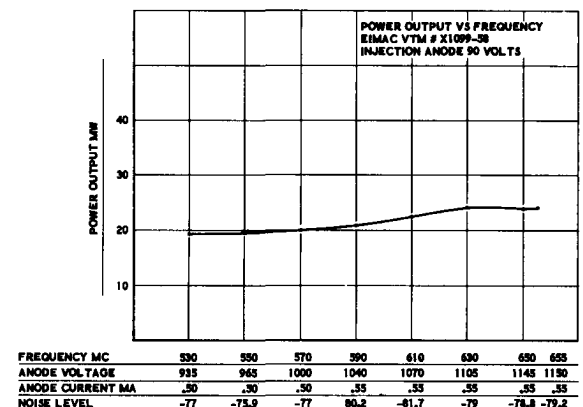
Vibration	- - - - -	10G-(to 2kc)
Shock	- - - - -	100G-(11ms)
Altitude	- - - - -	70,000 ft.

OUTLINE DIMENSIONS

Height	- - - - -	3 inches
Width	- - - - -	2.1 inches
Length	- - - - -	4.5 inches

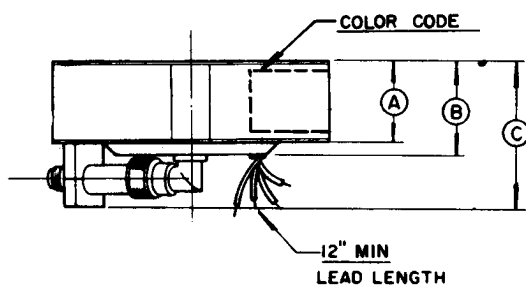
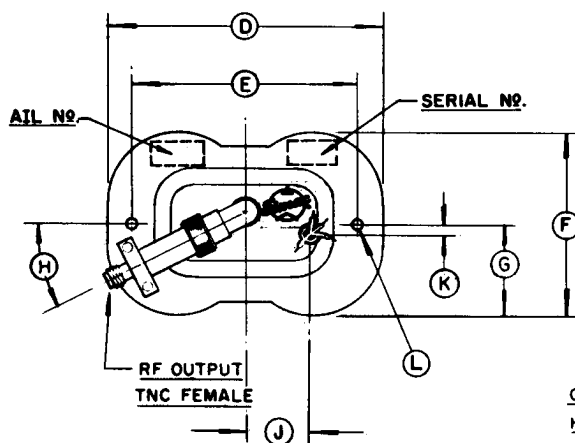


**P-BAND
OSCILLATOR**



APPLICATION NOTES

1. **COOLING:** To insure optimum tube performance the magnet temperature should be maintained below 70° C.
2. **PROXIMITY OF FERROUS MATERIALS:** To minimize variations in performance, ferrous materials should be kept at least 6 inches from the magnetron package. Modulation of the tube may be produced by rotating ferrous materials and such parts as fans, shafts and couplings should be placed as far from the magnetron package as possible. Transformers and chokes should not be placed in such close proximity to the tube that their stray magnetic fields will interfere with the magnetron operation.
3. **TEMPERATURE STABILITY:** The permanent magnet for the X-1099 has been temperature stabilized to minimize frequency changes caused by variations in the ambient temperature. The temperature/frequency coefficient for the X-1099 package is typically .008% of the operating frequency per degree Centigrade. Thus, for an operating frequency of 600 megacycles, the temperature/frequency coefficient is typically 48 kilocycles per degree Centigrade. A positive change in temperature will always produce a positive change in frequency.
4. **ANODE VOLTAGE:** The operating frequency is a function of the anode voltage; therefore, any voltage ripple on the anode supply will appear as frequency modulation on the RF output signal.
5. **AM NOISE:** AM noise is defined as noise in db below the carrier using a 6 omc IF Strip with 2 Mc band pass and includes power in both side bands. Other measurement techniques can be utilized as the application requires.

[illegible]

CONNECTIONS

GROUND - GREEN

HEATER - WHITE

HEATER CATHODE - BLACK

INJECTION ANODE - YELLOW