

# EITEL-MCCULLOUGH, INC.

**TENTATIVE DATA** 

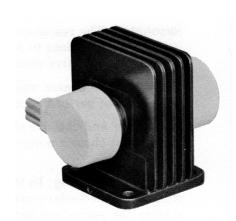
X1118A

X BAND REFLEX KLYSTRON

#### TYPICAL PERFORMANCE

### **ELECTRICAL PERFORMANCE**

Frequency range Mechanically tunable								500 Mc
Power output Electronic tuning range	. 12	٩ŀ	She	and	Isadi	dth		40 Mc
Resonator voltage								400 Vdc
Cathode current	•		•	•	•	•	•	
Repeller voltage								
Modulation sensitivity								
Heater voltage						6.	3 V	(ac or dc) $\pm 5\%$
Heater current								
Mode								<b>4</b> <sup>3</sup> / <sub>4</sub>
VSWR of load								1.2:1 max.
Temperature coefficier								±150 Kc/℃
Warm-up time								30 sec.



### **MAXIMUM RATINGS**

Resonator voltage .				500 Vdc
Cathode current .				60 mA
Repeller voltage:				

Negative with respect to cathode . . -25 to -500 Vdc NOTE: Damage to the tube may occur if maximum ratings are exceeded.

## MECHANICAL

Operating position		2		any
Electrical connections				flexible leads
				WR-75 wave-guide flange
Cooling required				conduction or convection
Net weight				6 oz.
Shipping weight (approx	xim	ate	e)	4 lbs.

# **ENVIRONMENTAL PERFORMANCE**

Temperat	ure	ra	ang	ge :				. −50 to +100 °C
Altitude								. 100,000 ft. max.
<b>Vibration</b>								10G, 20 to 2000 cps.
Shock .								40G, 11 ms

#### **OUTLINE DIMENSIONS**

Height .						1.8 in.
Width .						1.5 in.
Length .						2.5 in.

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## **APPLICATION**

NOTE: All voltages referred to cathode.

Cooling: At sea level this tube will not require forced air cooling when operated at its maximum rated dissipation with an ambient temperature less than 125° Centigrade. The waveguide flange connection will normally provide the required heat sink for conduction cooling. If an insulator is used between the tube and waveguide for DC isolation, forced air cooling may be required to maintain the ceramic-to-metal seal temperatures below the maximum rating of 150° Centigrade.

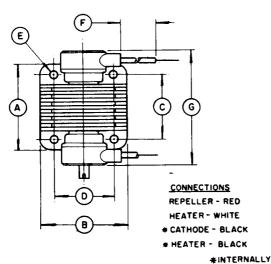
**Resonator:** The resonator of the X1118A is integral with the body of the klystron. For this reason it is often convenient to operate the resonator at chassis potential, with the repeller and cathode at appropriate negative potentials.

Cathode: The heater voltage should be maintained within  $\pm 5\%$  of the rated value of 6.3 volts if variations in performance are to be minimized and the best tube life obtained.

The heater and cathode of the X1118A are internally connected. When the resonator of this tube is operated at chassis potential, the heater transformer must be insulated for the cathode-to-resonator voltage.

Mechanical Tuning: In the X1118A a fixed-tuned inner cavity is closely coupled through a ceramic window to a secondary cavity outside the vacuum. Mechanical tuning is accomplished by a capacitive slug in the secondary cavity with a tuning rate of approximately 150 megacycles per turn. This design allows repeated tuner cycling without damaging the vacuum seals. The maximum tuner torque is 40 inch-ounces.

A clockwise rotation of the tuner will produce a decrease in frequency.



DIMENSIONS IN INCHES											
DIMENSIONAL DATA .											
REF.	MIN.	MAX.	NOM.								
Α			1.500								
B			1.500								
C	1.118	1.126									
D	1.036	1.044									
E	,143 D.	.148 D.									
	12+1 TYF	LEAD L	ENGTH								
G		1.958									
Н		1.800									
J			.330								
K	.160	.170									
L			.125								
М	.100										
N		.735									
Р		.250									
K L M		.735									

