

# EITEL-MCCULLOUGH, INC. SAN CARLOS, CALIFORNIA

**TENTATIVE DATA** 

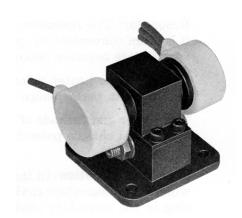
X1123

KU BAND REFLEX KLYSTRON

#### TYPICAL PERFORMANCE

#### **ELECTRICAL PERFORMANCE**

Frequency setting Mechanically trimmable Power output Electronic tuning range (	3 c	db k	oan	dw	idtl	h)	20 mW 30 Mc
Resonator voltage							300 Vdc
Cathode current							
Repeller voltage							
Modulation sensitivity							
Heater voltage							
Heater current							
Mode							
VSWR of load							
Temperature coefficient							
Warm-up time							



# **MAXIMUM RATINGS**

Resonator voltage					500 Vdc
Cathode current					55 m <b>A</b>
Reneller 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					any
Electrical connections					flexible leads
RF output coupling		RG.	91	/U	waveguide flange
Cooling required					conduction
Net weight					5 oz.
Shipping weight (approxim					4 lbs.

# **ENVIRONMENTAL PERFORMANCE**

Temperat	ur	e ra	ang	ge				. −55 to +125 °C
Altitude								. 100,000 ft. max.
								10G, 20 to 2000 cps
Shock .								40G, 11 ms

#### **OUTLINE DIMENSIONS**

Height .						1.4 in.
Width .						1.3 in.
Length .						2.1 in.



# **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 X1123 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 X1123 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.

Shock and Vibration: In the X1123 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.

