



EITEL-McCULLOUGH, INC.  
SAN CARLOS, CALIFORNIA

TENTATIVE DATA

X-1075A

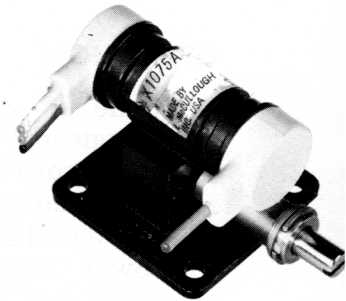
X-BAND  
REFLEX KLYSTRON

The Eimac X-1075A is a ceramic and metal, conduction cooled reflex klystron designed for local oscillator service in applications encountering severe vibration, shock or temperature extremes. This tube will deliver a typical output power of 100 milliwatts over the frequency range of 8500 to 9600 megacycles.

The stacked-ceramic construction results in an extremely rugged design and a low sensitivity to vibration.

Leads to the tube are permanently attached and protected by molded silastic rubber caps which permit operation at any altitude without flashover.

**FEATURES:** This tube features Eimac's new long-life tuner which renders excellent torque control under extreme environmental conditions over as many as 10,000 cycles.



**GENERAL CHARACTERISTICS**

**ELECTRICAL**

Cathode:	Unipotential, oxide coated		
	Warm-up Time - - - - -	30	seconds
Heater:	Voltage - - - - -	6.3	volts
	Current - - - - -	1.0	ampere
	Typical Output Power (Load VSWR = 1.15:1)- - - - -	100	milliwatts
	Frequency Range- - - - -	8500 to 9600	megacycles

**MECHANICAL**

Operating Position - - - - -	Any
Mounting - - - - -	UG-39/U Waveguide Flange
Cooling - - - - -	Conduction
Electrical Connections - - - - -	Flexible Leads
RF Output Coupling - - - - -	RG-52/U Waveguide
Net Weight - - - - -	4 Ounces
Shipping Weight (Approximate)- - - - -	2 Pounds
Maximum Overall Dimensions:	
Height- - - - -	1.40 Inches
Width - - - - -	1.63 Inches
Length - - - - -	2.28 Inches

**ENVIRONMENTAL**

Maximum Ambient Temperature - - - - -	150° C
Maximum Altitude - - - - -	No Limit
Maximum Non-Operating Shock (11 ms Duration) - - - - -	40 g
Maximum Operating Shock (11 ms Duration)- - - - -	40 g
Maximum Operating Vibration (20 to 2000 cps) - - - - -	10 g

**MAXIMUM RATINGS**

DC RESONATOR VOLTAGE*	- - - - -	500 MAX.	VOLTS
DC CATHODE CURRENT	- - - - -	50 MAX.	MA
RESONATOR DISSIPATION	- - - - -	25 MAX.	WATTS
PEAK REPELLER VOLTAGE*			
POSITIVE WITH RESPECT TO CATHODE	- - - -	0 MAX.	VOLTS
NEGATIVE WITH RESPECT TO CATHODE	- - -	500 MAX.	VOLTS

OPERATION		MIN.	AVE.	MAX.	UNIT
Mode	- - - - -	---	5-3/4	---	
Frequency	- - - - -	8.5	---	9.6	Gc.
DC Resonator Voltage	- - - - -	---	400	---	Volts
DC Cathode Current	- - - - -	---	40	---	ma
DC Repeller Current	- - - - -	---	---	1	$\mu$ amp
Power Output	- - - - -	100	130	200	mW
Electronic Tuning (3 db bandwidth)	- - -	---	30	---	mc
Modulation Sensitivity	- - - - -	---	---	2	Mc/Volt
Peak-to-Peak FM Deviation (10g, 20 - 2000 cps)				250	kc
Residual FM	- - - - -	---	---	50	kc

\*All voltages referred to cathode.

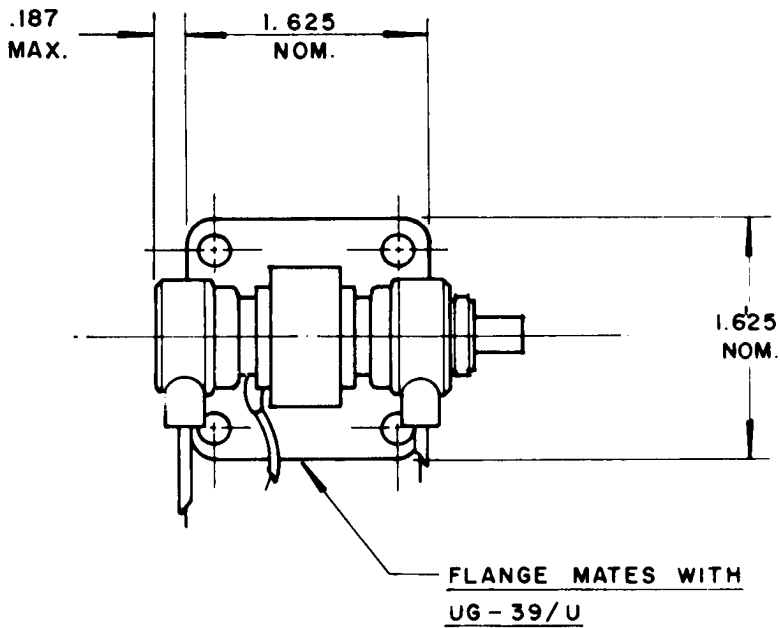
**APPLICATION**

**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 150° 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 175° Centigrade. Maximum life will be obtained if the tube is maintained at 150° C or less.

**Resonator:** The resonator of the X-1075A 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 best tube life obtained.

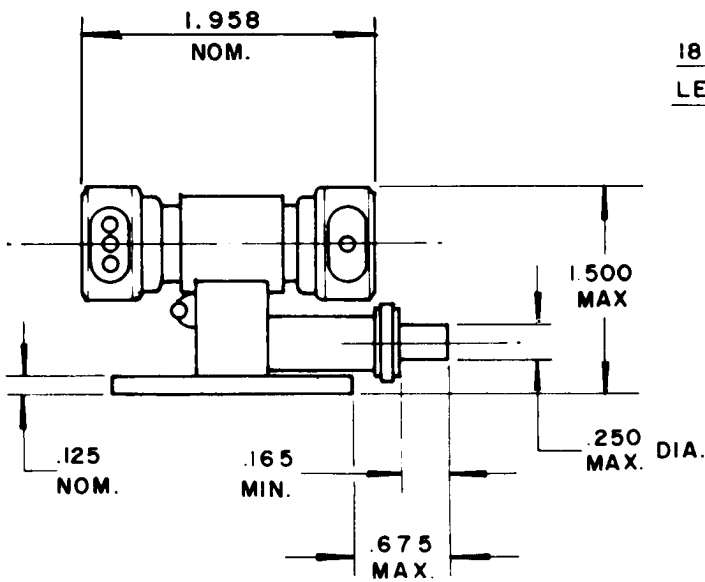
The heater and cathode of the X-1075A are internally connected. When the resonator of this tube is operated at chassis potential, the heater transformer must be insulated for the cathode-to-resonator voltage.



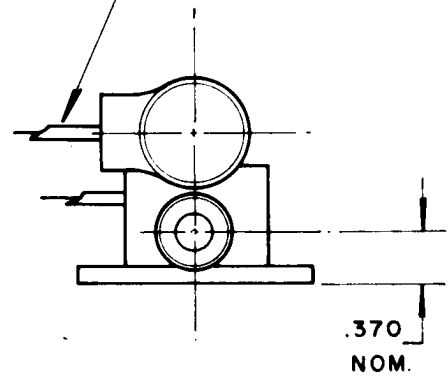
LEAD CONNECTIONS

YELLOW	HEATER
* GREEN	CATHODE
* WHITE	HEATER
GRAY	REFLECTOR
BROWN	BODY

\* INTERNALLY  
CONNECTED



18" NOM.  
LEAD LENGTH



X 1075 A

X 1075A OPERATING CHARACTERISTICS

$E_{rs} = 400 \text{ V dc}$   
 $I_k = 40 \text{ mA dc}$   
 $5\frac{3}{4}$  MODE

