

EITEL-McCULLOUGH, INC.  
SAN CARLOS, CALIFORNIA

RX21A

MERCURY-VAPOR  
RECTIFIER

The Eimac RX21A is a half-wave mercury vapor-rectifier incorporating features which enable it to withstand high peak inverse voltages and to conduct at relatively low applied voltages. The oxide-coated, edgewise-wound, shielded ribbon filament, provides a large emission reserve and long life.

**GENERAL CHARACTERISTICS**

**ELECTRICAL**

Filament:	Oxide-coated	
	Voltage - - - - -	2.5 volts
	Current - - - - -	10 amperes
Tube Voltage Drop (approx.)	- - - - -	10 volts

**MECHANICAL**

Base - - - - -	Medium, 5-pin, #A5-11
Recommended Socket - - - - -	E. F. Johnson #122-225
Maximum Overall Dimensions:	
Length - - - - -	8.0 inches
Diameter - - - - -	2-1/16 inches
Net Weight - - - - -	4 ounces
Shipping Weight - - - - -	3 pounds

**MAXIMUM RATINGS (Single tube)**

PEAK INVERSE ANODE VOLTAGE*	- - - - -	11,000 MAX. VOLTS
PEAK ANODE CURRENT	- - - - -	3 MAX. AMPERES
AVERAGE ANODE CURRENT	- - - - -	.75 MAX. AMPERES
SUPPLY FREQUENCY	- - - - -	150 MAX. CPS
CONDENSED-MERCURY TEMPERATURE RANGE**	- - - - -	- 20-60° CENTIGRADE

\* Temperatures in excess of 60° C limit the peak-inverse rating to 5500 volts with a corresponding  
 \*\* Operating at 40 plus or minus 5 C is recommended.



**APPLICATION**

**MECHANICAL**

**Mounting:** The RX21A must be mounted vertically, base down. In order to carry the ten amperes of filament current the adjacent pins have been connected in parallel within the base. Similar connections should be made in the socket.

**Cooling:** Provisions should be made for adequate air circulation around the tube. The temperature of the condensed mercury in the RX21A should be kept within the ranges given under "MAXIMUM RATINGS".

This temperature should be maintained at 40° ±5° C for most satisfactory operation of the tube. To measure the condensed-mercury temperature a thermocouple or small thermometer may be attached to the glass near the tube base using a small amount of putty. A condensed-mercury temperature lower than

the recommended value raises the voltage at which the tube becomes conducting and tends to reduce the life of the filament. A temperature higher than recommended lowers the voltage at which the tube becomes conducting and reduces the peak inverse voltage rating of the tube.

**ELECTRICAL**

**Filament Voltage:** For maximum tube life, the filament voltage as measured directly at the filament pins, should be held at the rated value of 2.5 volts. Unavoidable variations in filament voltage must be kept within the range of 2.4 to 2.6 volts. A filament voltage less than the minimum recommended value may cause a high tube voltage drop, with consequent bombard-

ment of the filament and eventual loss of emission. A filament voltage higher than the recommended maximum value will also decrease the life of the filament.

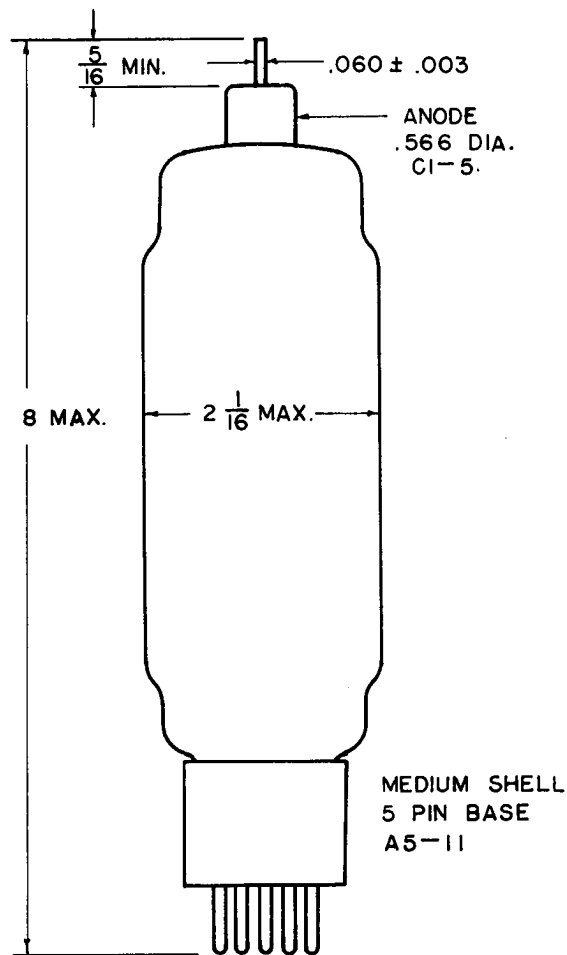
Caution should be observed in measuring the filament voltage as the filament circuit may be at a high dc potential.

The filament of the RX21A should be allowed to reach operating temperature before the plate voltage is applied. Under normal conditions, a delay of approximately 30 seconds will be required. The delay time should be increased if there is any evidence of arc-back within the tube.

When it is necessary to use a shield around the RX21A

care must be taken to insure adequate ventilation and maintenance of normal condensed-mercury temperature. When an RX21A is first installed, the filament should be operated at normal voltage for approximately ten minutes with no plate voltage applied, in order that the mercury may be properly distributed.

**Shielding:** Electromagnetic and electrostatic fields tend to cause the mercury vapor to break down, are detrimental to tube life and make proper operation difficult. Consequently, the RX21A should be isolated from such fields as exist around a transmitter or other similar equipment.



NOTE: These dimensions reflect standard manufacturing tolerances. They should not be made the basis for purchase specifications unless checked with Eitel-McCullough, Inc.

