

# ML-XRT-1

## High-Voltage Rectifier

165 PKV



ELECTRON TUBE SPECIALIST

### DESCRIPTION

The ML-XRT-1 is a high-vacuum rectifier having a maximum inverse voltage rating of 165 PKV when insulated with oil. The tube may be operated with peak anode currents as high as 1.00 ampere. The cathode is a low-wattage thori-

ated-tungsten filament. The anode is a pure tantalum cylinder. Tube construction insures long life, low internal voltage drop, high average-load-current capacity and an adequate safety factor against accidental overload.

### GENERAL CHARACTERISTICS

#### ELECTRICAL

Filament Voltage	
For peak anode currents of 0 to .75a .....	5.7 V*
For peak anode currents of .75 to 1.00a .....	6.0 V*
Filament Current at 6.0 V, approximate .....	6.8 A
Filament Heating Time (Before applying anode voltage) .....	2 sec
Tube Voltage Drop	
For $E_f = 5.7$ V, $i_b = .75$ a .....	1400 v
For $E_f = 6.0$ V, $i_b = 1.00$ a .....	1600 v

\*Applied filament voltage should be held to within  $\pm 5\%$  of specified voltage.

#### MECHANICAL

Mounting Position .....	Any
Type of Cooling .....	Radiation
Insulating Medium .....	Oil
Net Weight .....	2.2 lb

### MAXIMUM RATINGS

Peak Inverse Anode Voltage .....		165,000 v §
Peak Anode Current		
With filament voltage of 5.7 V .....	.75 a	
With filament voltage of 6.0 V .....	1.00 a	
Anode Dissipation .....		150 W
Load Current (Average DC)		
Circuit Application	Unfiltered†	Filtered‡
Single-phase, two-tube, half-wave .....	.18	— A
Single-phase, four-tube, full-wave .....	.36	.39 A
Three-phase, double-Y, parallel .....	1.10	1.10 A
Three-phase, full-wave .....	.54	.54 A

§In some circuits the tube may be operated at higher peak inverse voltages. Consult the Machlett Laboratories Engineering Department.

†Unfiltered Load Current Ratings are based on sine-wave input and resistance load without inductive or capacitive effects.

‡Filtered Load Current Ratings are based on sine-wave voltage input and inductive choke input filter.

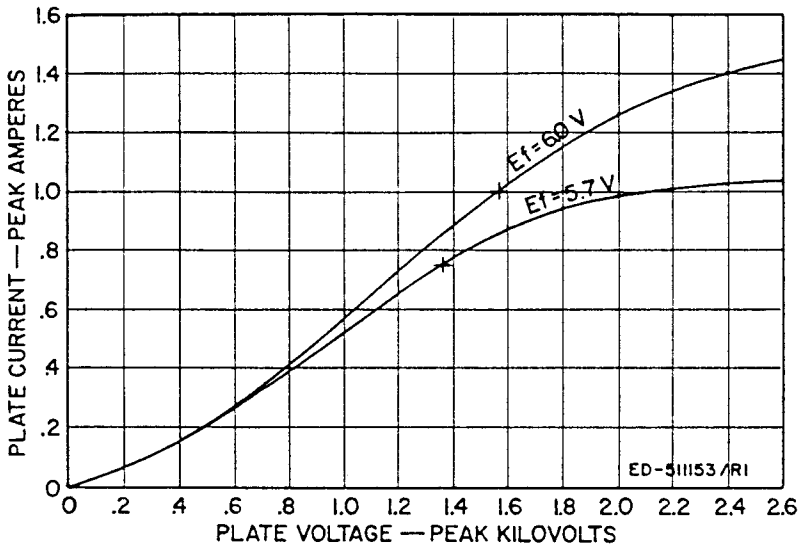
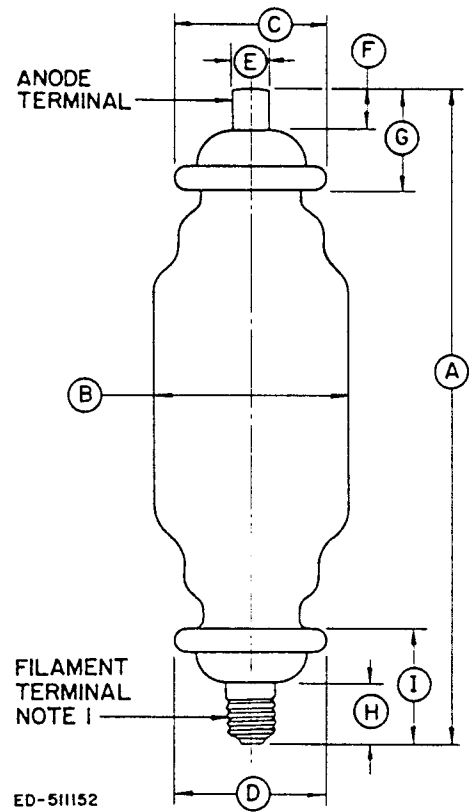


PLATE CURRENT CHARACTERISTICS



OUTLINE — ML-XRT-1

APPLICATION NOTES

It is recommended that a minimum resistance of 1/10 ohm per volt of peak inverse voltage be placed in series with the tube when it is subjected to inverse voltages in excess of 150 PKV, to insure that the magnitude of any fault currents are minimized. Failure to do so may result in permanent damage to the tube caused by an excessive amount of energy being dissipated in the tube during circuit instabilities or momentary tube instabilities.

**WARNING:** Operation of this tube may produce x-rays. Adequate rayproof shielding must therefore be provided in the equipment.

DIMENSIONS FOR OUTLINE

Ref	Inches		
	Minimum	Nominal	Maximum
A	—	—	13.50
B	—	—	4.15
C	—	3.13	3.25
D	—	3.13	3.25
E	.76	.78	.80
F	.67	.75	—
G	—	2.09	—
H	1.17	1.25	—
I	—	2.38	—

NOTE:

1. Filament terminal fits medium lamp socket.

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