

# ML-142

**High-Voltage  
Rectifier  
100 PKV**

**MACHLETT**

ELECTRON TUBE SPECIALIST

## DESCRIPTION

The ML-142 is a high-vacuum rectifier tube having a maximum inverse voltage rating of 100 PKV using oil insulation or 50 PKV using air insulation and a maximum peak anode current rating of 300 MA. It is especially suitable for service of moderate power requirements and affords the combination of compactness of equipment with low tube cost.

This tube incorporates those special features of construction which characterize Machlett high-vacuum rectifiers for

high-voltage applications. These features insure ruggedness, long life, low internal voltage drop and moderate average-load-current capacity. The cathode is a low-wattage, thoriated-tungsten, catenary-type filament, allowing close anode-to-cathode spacing without distortion of the filament by electrostatic forces. The cylindrical molybdenum anode provides a high rate of heat dissipation, with adequate safety factor against accidental overload.

## GENERAL CHARACTERISTICS

### Electrical

|  |     |        |
|--|-----|--------|
| Filament Voltage .....                           | 3.8 | Volts* |
| Filament Current at 3.8 Volts, approximate ..... | 6.6 | Amps   |
| Filament Heating Time, minimum .....             | 2   | Secs   |
| (Before applying anode voltage)                  |     |        |
| Tube Voltage Drop, maximum .....                 | 360 | Volts  |
| ( $I_b = 0.30$ Ampere)                           |     |        |

\* Applied filament voltage must be held within  $\pm 5\%$  of rated voltage. For maximum life, filament voltage should be maintained as close as possible to rated voltage under all conditions of operation.

### Mechanical

|                         |            |
|-------------------------|------------|
| Mounting Position ..... | Optional   |
| Type of Cooling .....   | Radiation  |
| Insulating Medium ..... | Oil or Air |
| Net Weight .....        | 7 Ounces   |

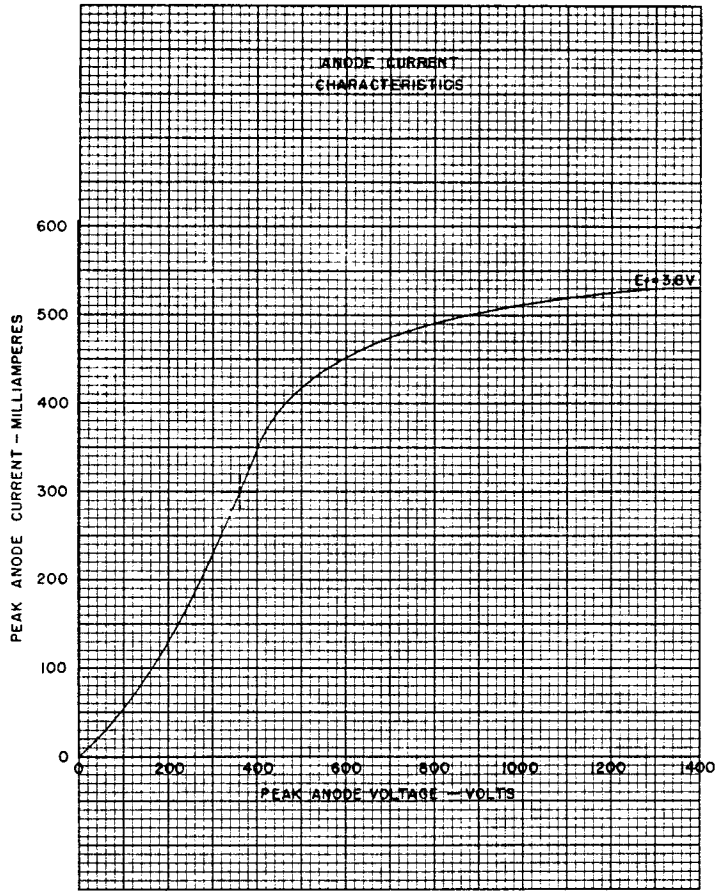
## MAXIMUM RATINGS

|  |             |           |
|--|-------------|-----------|
| Peak Inverse Anode Voltage               |             |           |
| Oil Insulation .....                     | 100,000     | Volts     |
| Air Insulation .....                     | 50,000      | Volts     |
| Peak Anode Current .....                 | 0.300       | Amp       |
| Anode Dissipation .....                  | 25          | Watts     |
| Load Current (Average D-C)               |             |           |
| Circuit Application                      | Unfiltered† | Filtered‡ |
| Single-phase, two-tube, half-wave .....  | .075        | Amp       |
| Single-phase, four-tube, full-wave ..... | .150        | Amp       |
| Three-phase, double-Y parallel .....     | .450        | Amp       |
| Three-phase, full-wave .....             | .225        | Amp       |

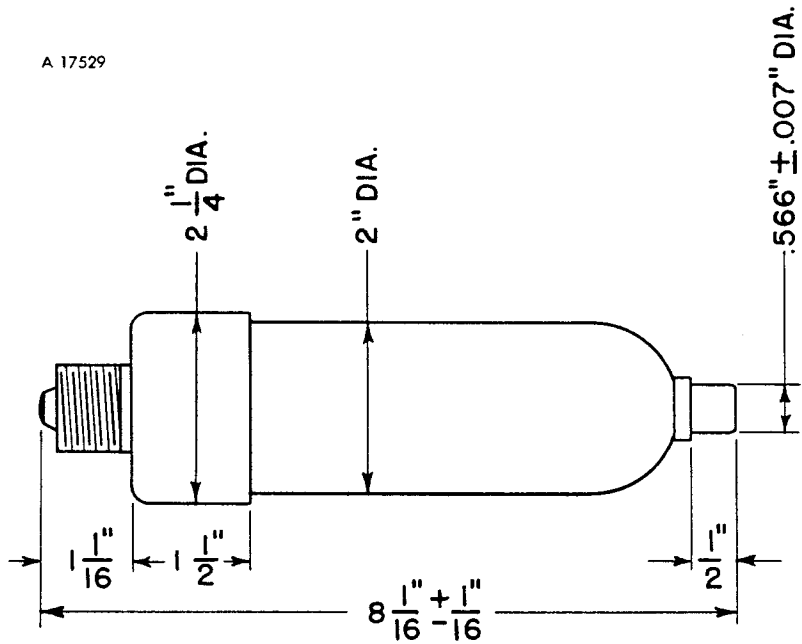
† Unfiltered Load Current Ratings are based on sine-wave input and resistance load without inductive or capacitive effects.

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

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



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