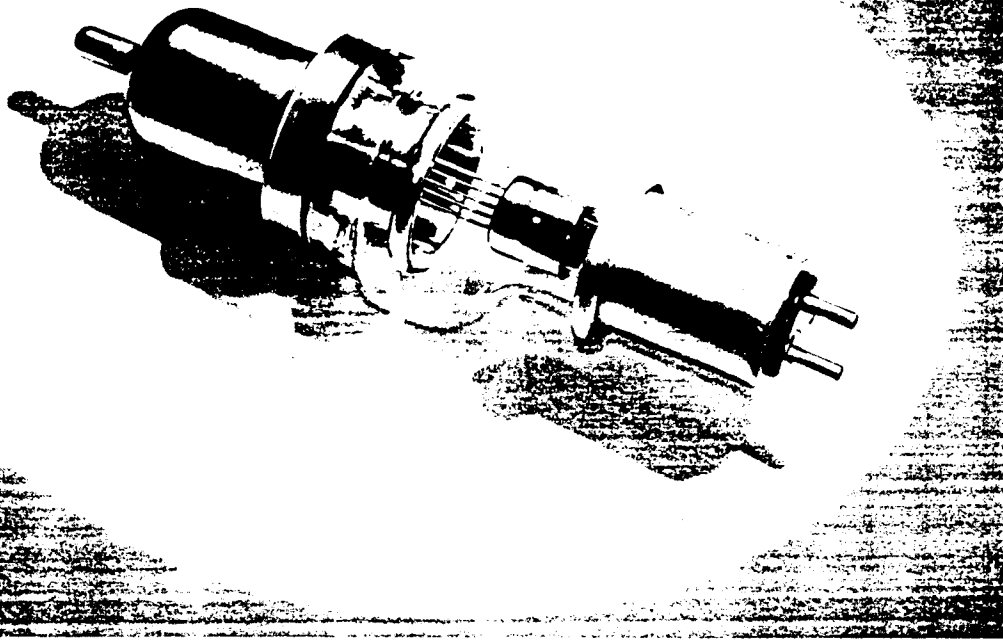




ML-6908

DESCRIPTION AND RATINGS



DESCRIPTION

The ML-6908 is an oil-immersed, high-vacuum rectifier tube having maximum ratings of 150 PKV inverse voltage and 10 amperes peak anode current. It is especially adaptable to certain pulsing circuits as a hold-off diode and to power supplies in high-power radar units, where insensitivity to low ambient temperatures and high current capacity at high voltages are essential.

This tube incorporates those special features of construc-

tion which characterize Machlett high-vacuum rectifiers for high power-level applications. These features insure ruggedness, long life, low internal voltage drop and high average load current capacity. The cathode is a thoriated-tungsten filament of the catenary type, allowing close anode-to-cathode spacing without distortion of the filament by electrostatic forces. The heavy-wall copper anode provides a high safety factor against accidental overload.

GENERAL CHARACTERISTICS

ELECTRICAL

Filament Voltage	12 Volts
Filament Current, approximate	23 Amps
Filament Heating Time, minimum	30 Secs
(Before applying Plate Voltage)	
Tube Voltage Drop, maximum	2400 Volts
(I_b —10.0 amperes)	

MECHANICAL

Mounting Position	Optional
Type of Cooling	Convection†
Maximum oil temperature for maximum dissipation	75 °C
Insulating Medium	Oil††
Net Weight, approximate	6¾ lbs

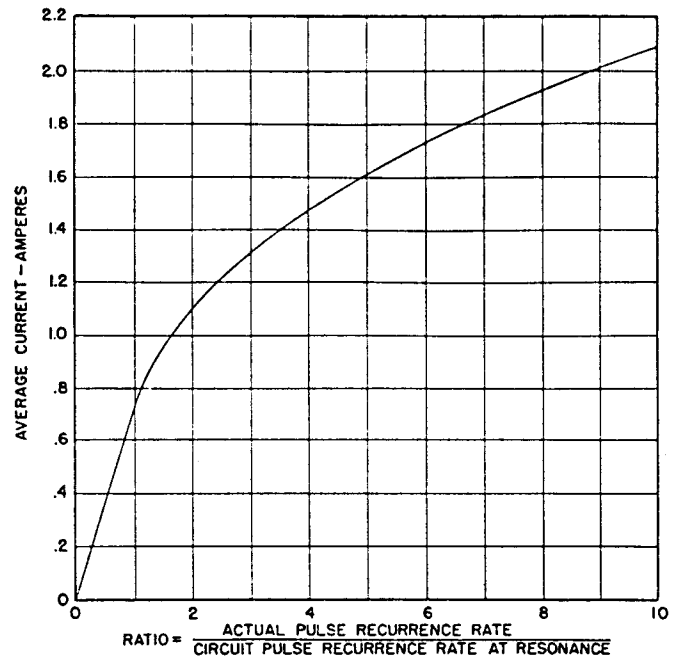
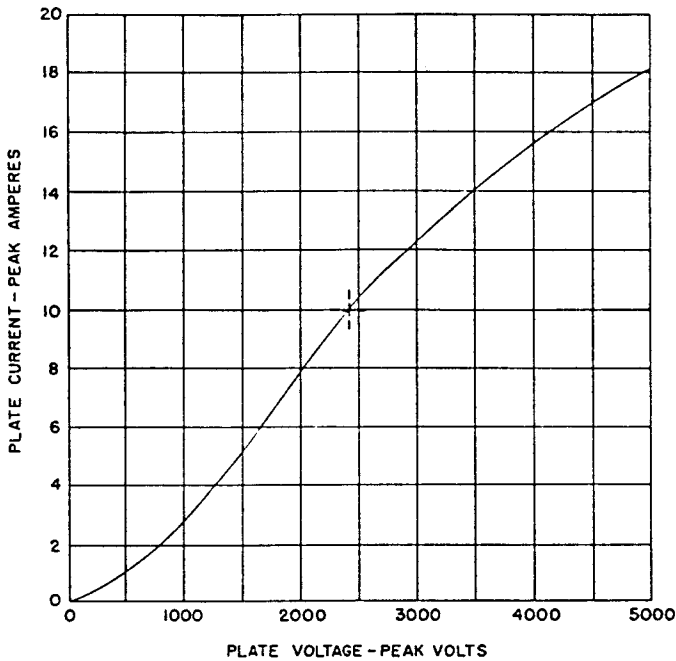
† When the ML-6908 is operated anode up, forced-oil cooling of the glass within the cathode base is required. An oil flow of approximately 1 quart per minute, introduced through the cathode base tubulation, is sufficient.

†† The dielectric value of the insulating oil should be no less than 25,000 volts peak per 0.1 inch.

MAXIMUM RATINGS

Peak Inverse Anode Voltage	150,000 Volts
Peak Anode Current	10.0 Amps
Plate Dissipation	2000 Watts
Load Current (Average D-C)	
Circuit Application	Unfiltered* Filtered**
Single-phase, two-tube, half-wave	1.6 Amps
Single-phase, four-tube, full-wave	3.2 3.5 Amps
Three-phase, double-Y parallel	8.8 9.0 Amps
Three-phase, full-wave	4.4 4.5 Amps

* Unfiltered Load Current Ratings are based on sine-wave voltage input and resistance load without inductive or capacitive effects.
 ** Filtered Load Current Ratings are based on sine-wave input and infinite inductance choke input filter.

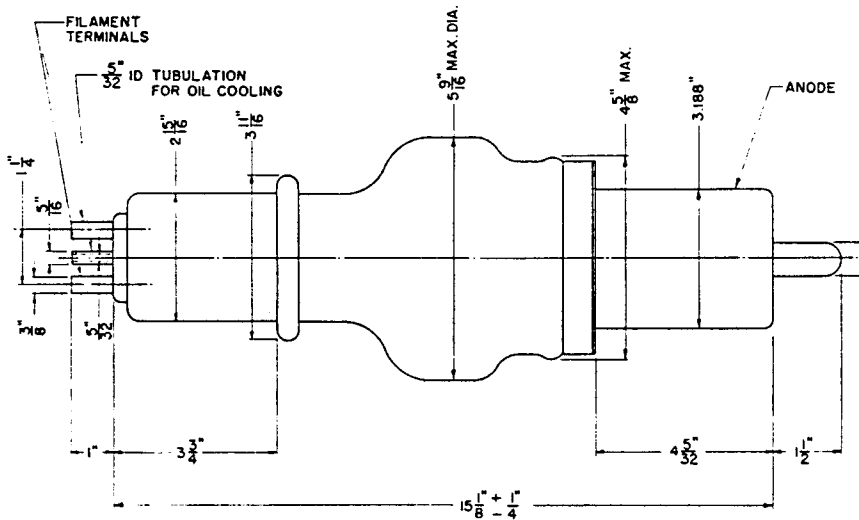


APPLICATION NOTES

When the ML-6908 is employed as a rectifier in conventional power supply circuits, the average dc load currents specified under "Maximum Ratings" apply.

Then the ML-6908 is used as a hold-off diode in connection with resonant charging of line-type pulsers, the average charging current permissible depends on the ratio of actual pulse recurrence rate to circuit pulse recurrence rate at resonance. The right-hand curve above indicates maximum permissible average currents at various values of this ratio.

When the tube is initially installed or has been inoperative for an extended period, maximum rated voltage must not be applied instantaneously. The tube should be "warmed-up" by operating at 60% of maximum rated voltage for 5 minutes, gradually increasing the voltage to 80% during the next 15 minutes and finally gradually increasing from 80% to maximum rated voltage in 20 minutes. For operating voltages less than the maximum rated voltage, the applicable part of the above procedure should be used.



DIMENSIONS — ML-6908

MACHLETT LABORATORIES, INC.

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