



ML-7668

**High Voltage
High-Mu Triode**
Plate Voltage
to 125 kV



ELECTRON TUBE SPECIALIST

DESCRIPTION

The ML-7668 is a high-voltage, high-mu triode designed primarily to operate as a switch tube in hard-tube pulse modulators for radar and in other electronic switching applications. In this service, the tube can deliver pulse

power output up to 1.75 megawatts. It is designed for operation immersed in oil or an equivalent dielectric fluid. The cathode of the tube is a thoriated-tungsten filament. The anode is capable of dissipating up to 750 watts.

GENERAL CHARACTERISTICS

Electrical

Filament Voltage	12.6 Volts
Filament Current, approximate	29 Amperes
Grid Cutoff Voltage at 150 kV Plate Voltage, minimum	—1000 Volts
Amplification Factor	180
Interelectrode Capacitances, approximate:	
Grid-Plate	7.5 pf
Grid-Cathode	20.0 pf
Plate-Cathode	0.2 pf

Mechanical

Mounting Position	Vertical *
Type of Cooling	Oil Convection *

* When the tube is mounted with the cathode down, forced circulation of the oil in the cathode-end re-entrant cavity will be required.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS **Pulse Modulator or Pulse Amplifier**

Maximum Ratings, Absolute Values†

D-C Plate Voltage	150	kV ^Δ
D-C Grid Voltage	-1500	Volts
Peak Cathode Current	15	amps
Peak Positive Grid Voltage	1000	volts
Peak Negative Grid Voltage	-2000	volts
Peak Positive Plate Voltage	160	kV ^Δ
Average Grid Dissipation	50	Watts
Average Plate Dissipation	750	Watts
Pulse Duration	†	
Duty Factor	†	

Typical Operation

D-C Plate Voltage	125	kV
D-C Grid Voltage	-1000	Volts
Pulse Positive Grid Voltage	700	volts
Pulse Plate Current	11	amps
Pulse Grid Current	2.7	amps
Pulse Driving Power	4.6	kw
Pulse Power Output	1.3	Mw
Pulse Duration	500	μsec
Duty Factor	.005	

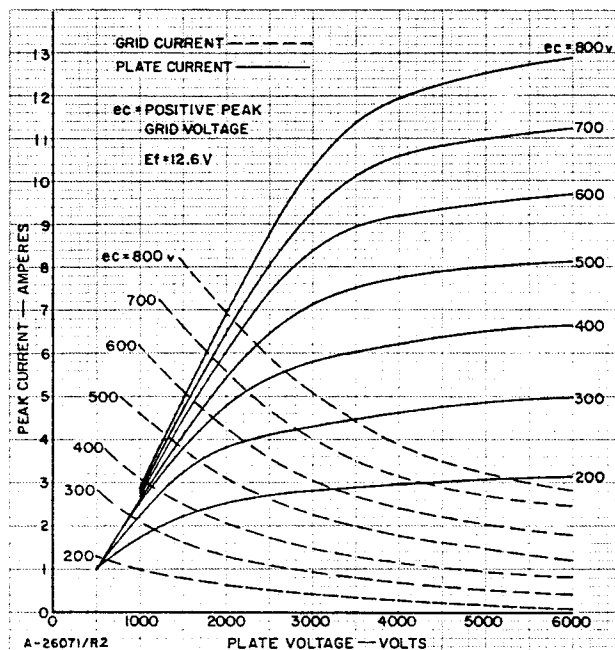
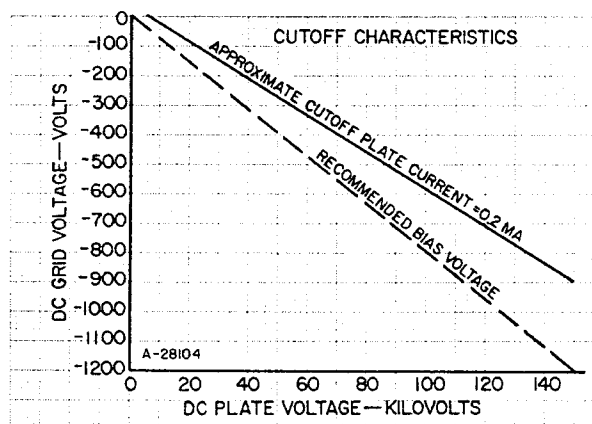
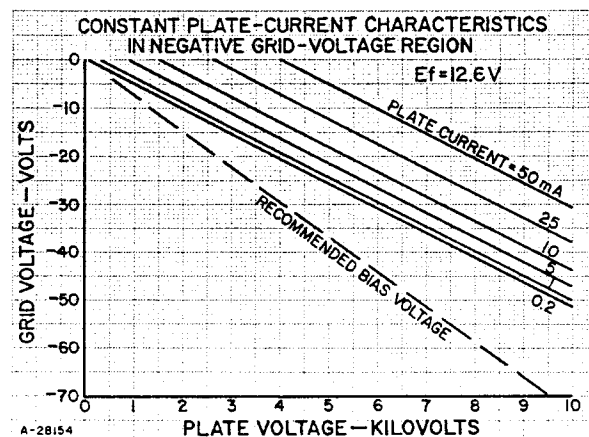
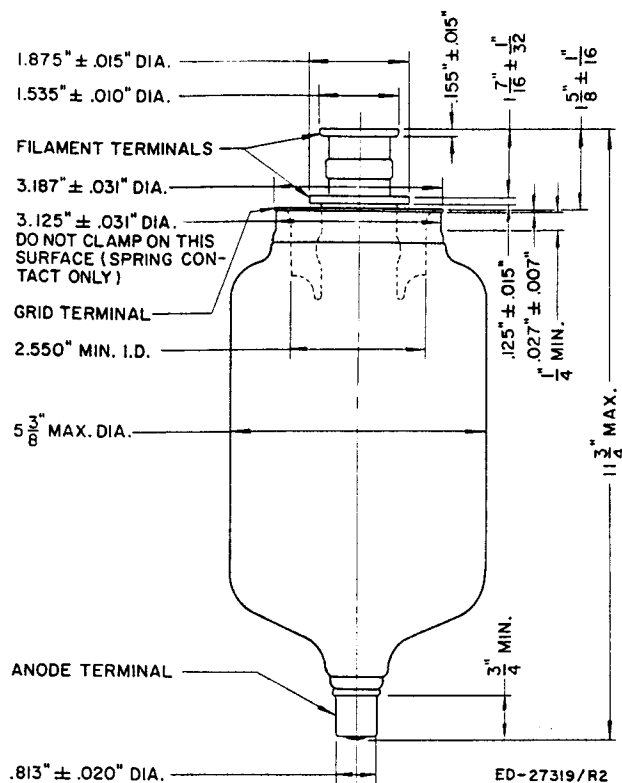
†Ratings apply only when the tube is immersed in insulating oil or an equivalent dielectric fluid.

^ΔFor operation above 125 kV, consult the Machlett Laboratories, Engineering Department.

‡The duration of the pulse may be several milliseconds long. The maximum average grid and plate dissipations will determine the duty factor.

Note: For operation under conditions not covered by the above ratings, consult the Machlett Engineering Department.

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



CONSTANT GRID-VOLTAGE CHARACTERISTICS

THE MACHLETT LABORATORIES, INC.

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