



ML-241B

DESCRIPTION AND RATINGS

DESCRIPTION

The ML-241B is a three-electrode tube designed for use as a modulator, amplifier, or oscillator in radio-transmitting service. The cathode is a thoriated-tungsten filament. The tube is air cooled and the anode is capable of dissipating 275 watts. Maximum ratings of 3 kVdc and 350 milliamperes apply at frequencies up to 7.5 mc/sec; operation at 22.5 mc/sec is permissible with plate voltage reduced to 1 kVdc.

The ML-241B embodies all the techniques and skills that have been inherently a part of Machlett Laboratories, Inc., since 1897. All parts are thoroughly processed by special Machlett techniques, which prevent contamination and assure complete and permanent outgassing. The tube is exhausted by a straight-line, high-voltage process assuring the same high standards as characterize the Machlett line of high- and super-voltage x-ray tubes.

GENERAL CHARACTERISTICS

Electrical

Filament Voltage	14 volts
Filament Current at 14 volts	6 amperes
Amplification Factor	16
Grid-Plate Transconductance	8500 uMhos
Interelectrode Capacitances	
Grid-Plate	16.5 uuf
Grid-Filament	14.5 uuf
Plate-Filament	4.8 uuf

Mechanical

Mounting Position	Vertical or Horizontal*
Type of Cooling	Convection

* If mounted horizontally, the plane of the filament should be vertical.

MAXIMUM RATINGS

Direct Plate Voltage	3600 volts
Direct Plate Current	350 milliamperes
Plate Dissipation	275 watts
Direct Grid Current	75 milliamperes
R.F. Grid Current	5 amperes
Frequency	7.5 megacycles

The above are maximum ratings which do not apply simultaneously but depend on the type of service specified below.

TYPICAL OPERATING CONDITIONS
Class A Audio Amplifier or Modulator

Direct Plate Voltage	1500	1250 volts
Grid Bias	-58	-40 volts
Direct Plate Current	170	200 milliamperes
Plate Dissipation	250	250 watts
Load Impedance	5000	3000 ohms
Undistorted Output	50	40 watts

Grid Bias Modulator

Direct Plate Voltage	3000 volts
Grid Bias	-260 volts
Plate Dissipation	175 watts
Load Impedance	8000 ohms
Peak Power Output	200 watts

Class B Audio Amplifier or Modulator
(for balanced 2 tube circuit)

Direct Plate Voltage	2000	1500 volts
Grid Bias	-110	-75 volts
Direct Plate Current per tube		
No drive	40	50 milliamperes
Maximum drive	300	300 milliamperes
Plate Dissipation	250	200 watts
Load Resistance (plate-to-plate)	8000	5900 ohms
Load Resistance (per tube)	2000	1475 ohms
Approximate Maximum Output	650	500 watts
Recommended Power for driving stage	50	50 watts

Class B Radio-Frequency Amplifier

Direct Plate Voltage	2000	1300 volts
Direct Plate Current	300	270 milliamperes
Plate Dissipation	275	275 watts
Grid Bias	-120	-90 volts
Approximate Carrier Watts for use with 100% modulation	150	130 watts

Class C Radio-Frequency Oscillator or Power Amplifier—Unmodulated

Direct Plate Voltage	2000	1500 volts
Direct Plate Current	300	300 milliamperes
Grid Bias	-185 to -250	-150 to -200 volts
Nominal Power Output	400	300 watts

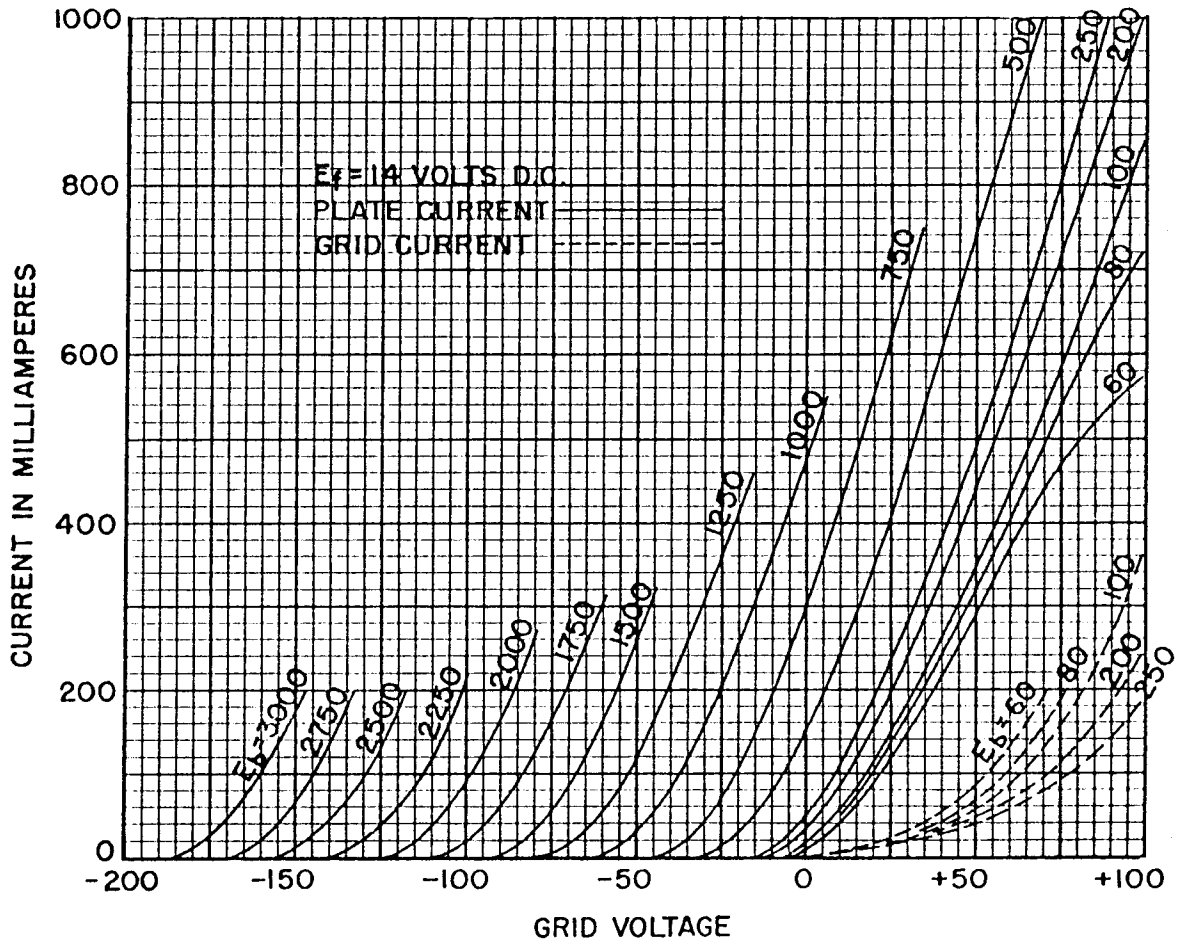
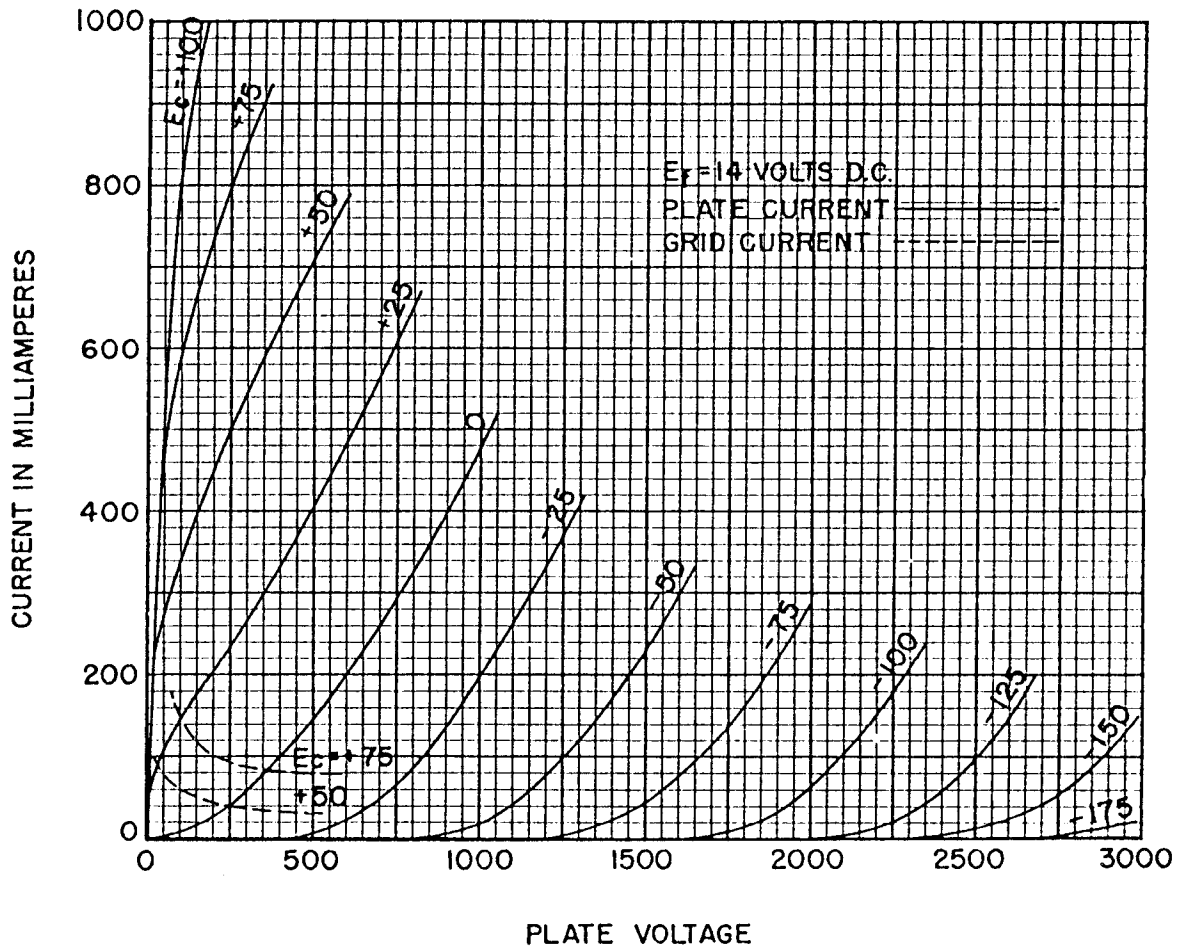
Class C Radio-Frequency Amplifier—Plate Modulated

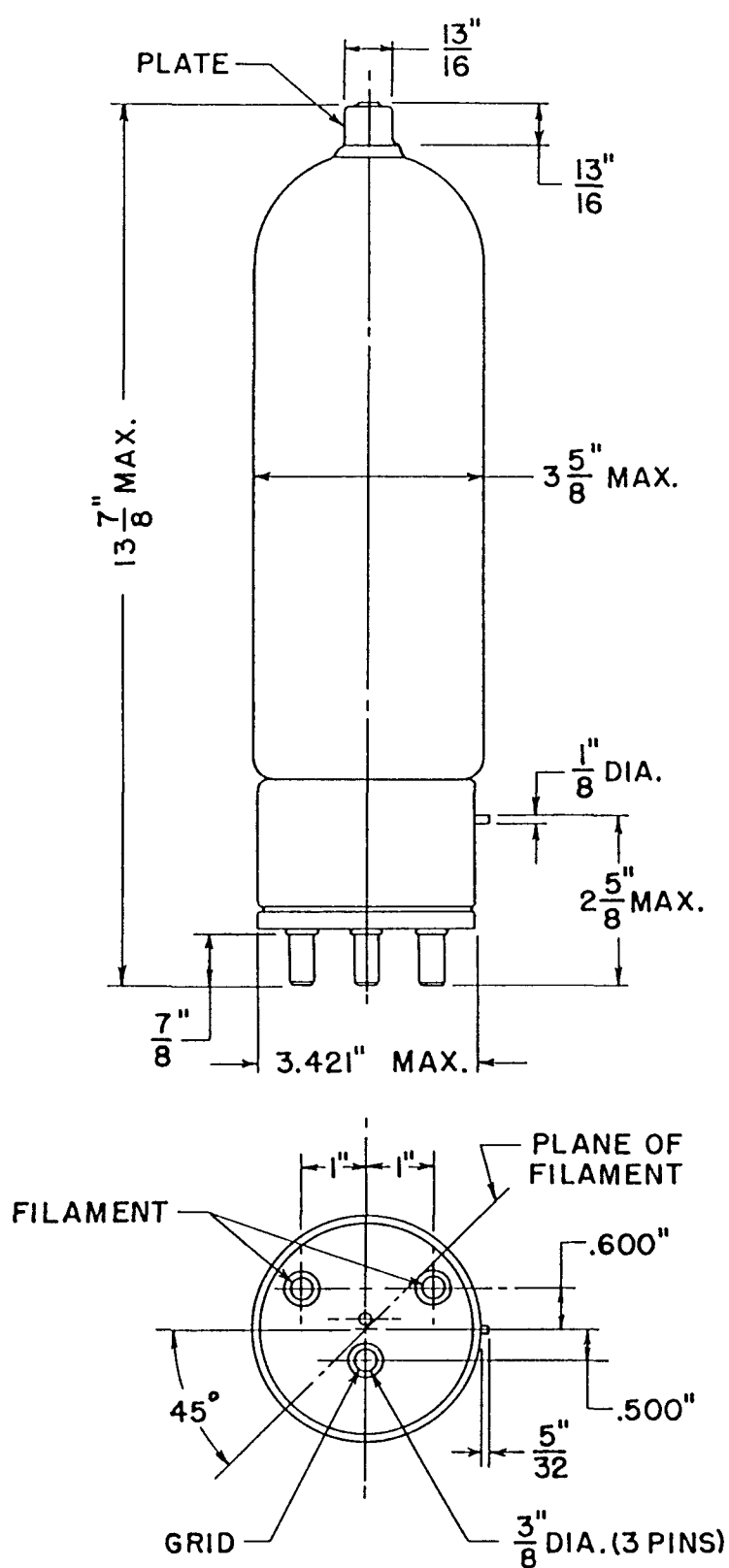
Direct Plate Voltage	1500	1000 volts
Direct Plate Current	300	300 milliamperes
Grid Bias	-200	-125 volts
Direct Grid Current	75	75 milliamperes
Nominal Carrier Power Output for use with 100% modulation	300	200 watts

APPLICATION NOTES

Maximum ratings apply at frequencies of 7.5 megacycles and less. The maximum plate voltage for the upper frequency limit of 22.5 megacycles is 1000 volts. The maximum plate voltage for frequencies between 7.5 and 22.5 megacycles

should be proportionately reduced. At high frequencies special attention should be given to adequate ventilation of the bulb.





DIMENSIONS—ML-241B

MACHLETT LABORATORIES, INC.

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