

**811A
Power
Triode**



The Penta Laboratories 811A is a high mu power triode designed for service as an audio frequency amplifier or modulator, or as an RF amplifier or oscillator. The 811A is capable of outputting up to 160 watts at frequencies up to 30 MHz.

Electrical Characteristics

Filament Type	Thoriated Tungsten	
Filament Voltage.....	6.3	Volts
Filament Current.....	4	Amperes
Amplification Factor (Ib = 20mA)	160	
Direct Interelectrode Capacitances		
Grid to Plate.....	5.5	pf
Grid to Filament	5.9	pf
Plate to Filament.....	0.7	pf

Mechanical Characteristics

Mounting Position		
Vertical.....	Base Down	
Horizontal	Pins 1 and 4 in Vertical Plane	
Overall Length	167	mm
Overall Diameter.....	62	mm

AF Power Amplifier and Modulator

Maximum Ratings

	CCS ¹	ICAS ²	
DC Plate Voltage	1250	1500	Volts
Maximum Signal DC Plate Current.....	175	175	mA
Maximum Signal Plate Input.....	165	235	Watts
Plate Dissipation ³	45	65	Watts

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P E N T A L A B O R A T O R I E S
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ELECTRON TUBES FOR INDUSTRY



811A Power Triode

Typical Operation

Values are for two tubes⁴

	CCS ¹	ICAS ²	
DC Plate Voltage	1250	1500	Volts
DC Grid Voltage ⁵	0	-4.5	Volts
Peak AF Grid-to-Grid Voltage	145	170	Volts
Zero Signal DC Plate Current	50	35	mA
Maximum Signal DC Plate Current	260	313	mA
Effective Load Resistance (Plate-to-Plate)	12,400	12,400	Ohms
Maximum Signal Driving Power (approx.)	3.8	4.4	Watts
Maximum Signal Power Output (approx.)	235	340	Watts

Linear RF Power Amplifier, Class AB₂

Single-Sideband Suppressed Carrier Service

Maximum Ratings (up to 30 MHz)

	CCS ¹	ICAS ²	
DC Plate Voltage	1250	1500	Volts
DC Plate Current	175	175	mA
DC Grid Current	50	50	mA
DC Plate Input	165	235	Watts
Plate Dissipation	45	65	Watts

Typical Operation

DC Plate Voltage	1250	1500	Volts
DC Grid Voltage ⁶	0	-4.5	Volts
Zero Signal DC Plate Current	25	16	mA
Effective RF Load Resistance	5700	6000	Ohms
DC Plate Current	130	157	mA
DC Grid Current	30	30	mA
Peak RF Grid Voltage	78	88	Volts
Driver Power Output (approx.) ⁷	7	8	Watts
Output Circuit Efficiency (approx.)	90	90	%
Useful Maximum Signal Power Output (approx.)	120 ⁸	160 ⁸	Watts

Operating Considerations

Plate shows no color when tube is operated at maximum CCS ratings, and shows a barely perceptible red color at maximum ICAS ratings.

Maximum Ratings vs. Frequency

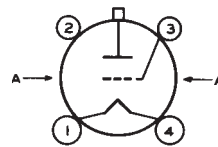
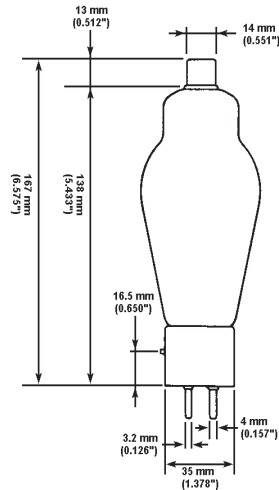
Operating Frequency MHz	Percent of Maximum Ratings
30	100
60	89
80	70
100	55



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Notes:

1. Continuous Commercial Service.
2. Intermittent Commercial and Amateur Service.
3. Averaged over any audio frequency cycle of sine wave form.
4. When two or more tubes are used precautions should be taken to balance the plate currents.
5. For AC filament supply.
6. Obtained preferably from a separate, well regulated supply.
7. Driver power output represents circuit losses and is the actual power measured at the input to the grid circuit. The actual power required depends on the operating frequency and the circuit used.
8. This value of useful power is measured at load of output circuit having indicated efficiency.

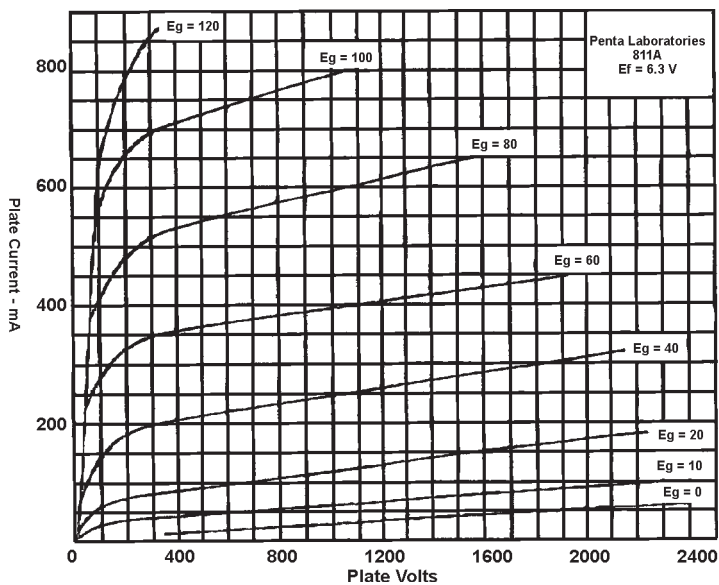


Pin 1	Filament
Pin 2	Do not use
Pin 3	Grid
Pin 4	Filament
Cap	Plate
AA'	Plane of electrodes



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Average Plate Characteristics



Average Grid Characteristics

