

AMPEREX TUBE TYPE 7800

The Amperex type 7800 is a high vacuum power triode of the external plate type requiring forced-air cooling. The radiator is an integral part of the tube.

The 7800 is designed primarily for use as an RF or AF amplifier and oscillator at frequencies up to 30 mc.

GENERAL CHARACTERISTICS

MECHANICAL

Mounting Position	vertical
Accessories	
Air Flow Chamber	S-25688
Grid Connector	S-25403
Clips with Cable for Filament	S-25401
Net Weight (approx)	42 lbs
Shipping Weight (approx)	186 lbs
Seal Temperature	220°C max.

Cooling Characteristics

Plate Dissipation (kW)	Altitude (ft.)	Max Air Inlet Temp. (°C)	Min Airflow (cu. ft./min)	Total Pressure (inches water)
7	0	35	233.1	0.39
	0	45	271.9	0.51
	5000	35	278.9	0.47
	10,000	25	293.1	0.47
10	0	35	370.8	0.91
	0	45	434.3	1.22
	5000	35	444.9	1.10
	10,000	25	466.1	1.06
15	0	35	639.1	2.36
	0	45	748.6	3.11
	5000	35	766.2	2.87
	10,000	25	805.1	2.76

ELECTRICAL

Filament	thoriated tungsten, directly heated
Filament Voltage	8 volts
Filament Current ¹	130 amps
Direct Interelectrode Capacitances	
Plate to Grid	27 $\mu\mu\text{f}$
Plate to Filament	0.6 $\mu\mu\text{f}$
Filament to Grid	45 $\mu\mu\text{f}$
Amplification Factor	
($I_b = 2 \text{ A}$, $E_b = 12 \text{ kv}$)	33
Transconductance	
($I_b = 2 \text{ A}$, $E_b = 12 \text{ kv}$)	25,000 micromhos

¹ The filament current must never exceed a peak value of 280 amps instantaneously at any time during the energizing schedule.

7800

RF Class C Telegraphy Maximum Ratings, Absolute Values

Frequency	30 mc
Plate Voltage	13 kv max
Plate Current	4.8 amps max
Negative Grid Bias	1500 volts max
Grid Current	1.0 amps max
Plate Input	60 kw max
Plate Dissipation	15 kw max
Bias Resistance	10 k ohms max

Typical Operation

Frequency	30 mc
Plate Voltage	12 kv
Plate Current	4.5 amps
Negative Grid Bias	1000 volts
Grid Current	0.8 amps
Peak Grid Voltage	1600 volts
Grid Input	1150 watts
Plate Input	54 kw
Plate Dissipation	13 kw
Power Output	41 kw max
Efficiency	76 %

RF Class C Plate Modulation Maximum Ratings, Absolute Values

Frequency	30 mc
Plate Voltage ²	10 kv max
Plate Current	3.8 amps max
Negative Grid Bias	1500 volts max
Grid Current	1.0 amps max
Plate Input	40 kw max
Plate Dissipation	10 kw max
Bias Resistance	10 k ohms

Typical Operation

Frequency	30 mc
Plate Voltage	10 kv
Plate Current	3.5 amps
Negative Grid Bias ³	1000 volts
Grid Current	0.8 amps
Peak Grid Voltage	1500 volts
Grid Input	1080 watts
Plate Input	35 kw
Plate Dissipation	7.5 kw
Power Output	27.5 kw
Efficiency	78.5 %
Modulation Factor	100 %
Modulation Power	17.5 kw

² At modulation of 120% and at an altitude of 10,000 feet.

³ Grid bias partially obtained by grid resistance.

7800

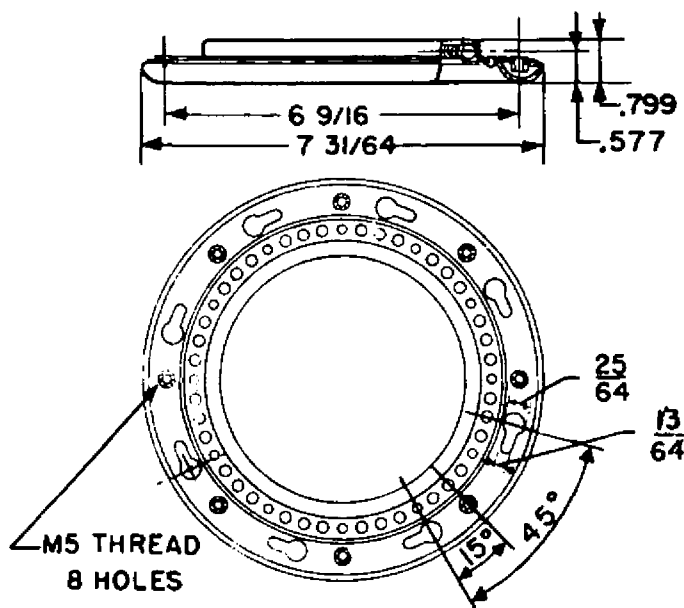
AF Class B Amplifier and Modulator (Especially for use with Cathode Followers)

Maximum Ratings, Absolute Values

Plate Voltage	13 kv max
Plate Current	4,5 amps max
Plate Input	60 kw max
Plate Dissipation	15 kw max
Bias Resistance	10 k ohms max

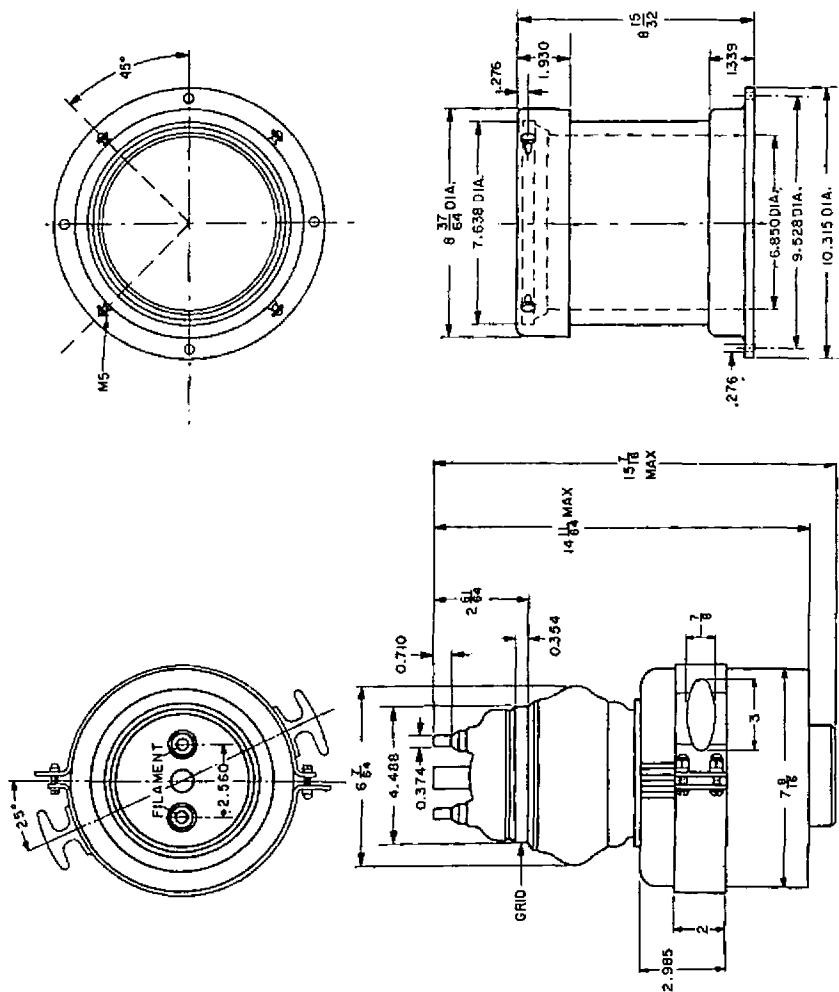
Typical Operation

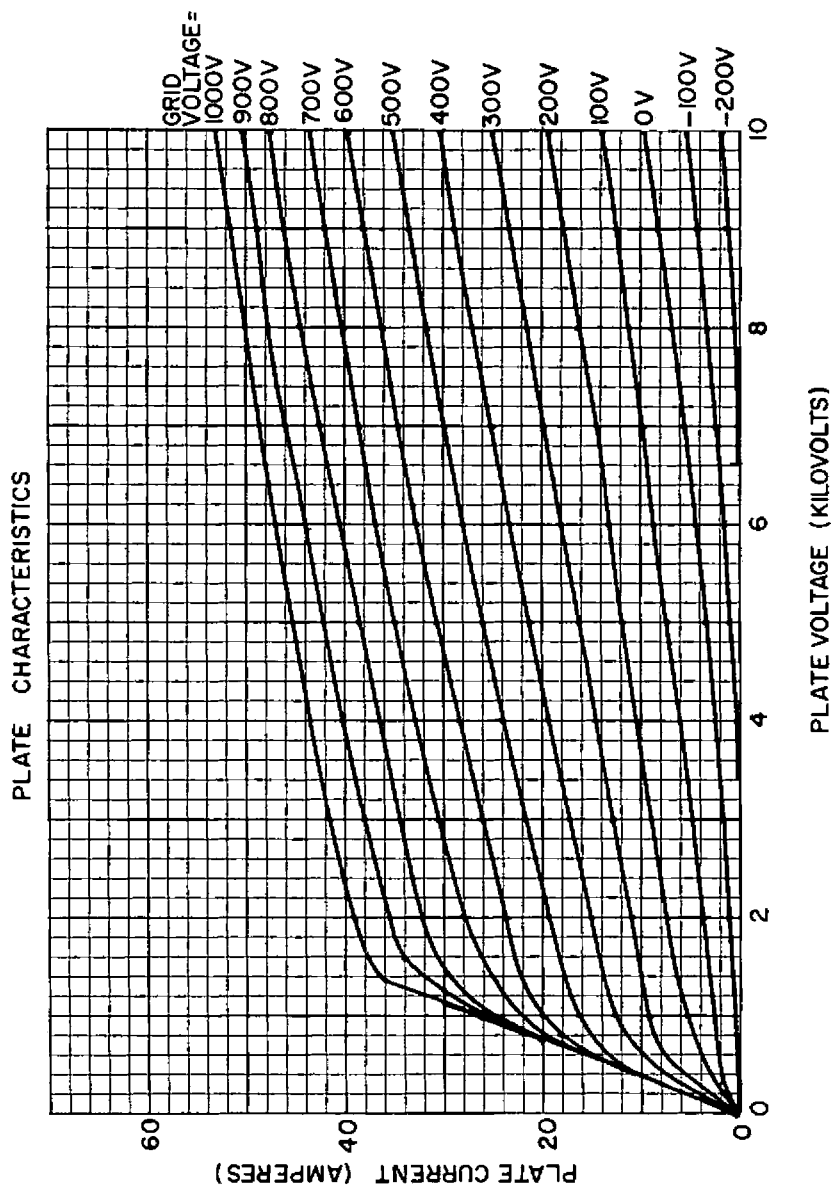
Plate Voltage	10 kv	
Negative Grid Bias	290 volts	
Load Resistance (Plate to Plate)	6240 ohms	
Peak Grid-to-Grid Voltage	0	900 volts
Plate Current	2x0,1	2x1,6 amps
Grid Current	0	2x0,035 amps
Peak Grid Current	0	2x0,24 amps
Grid Input	0	2x14 watts
Plate Input	2x1,0	2x16 kw
Plate Dissipation	2x1,0	2x6,4 kw
Power Output	0	19,2 kw
Efficiency		60 %



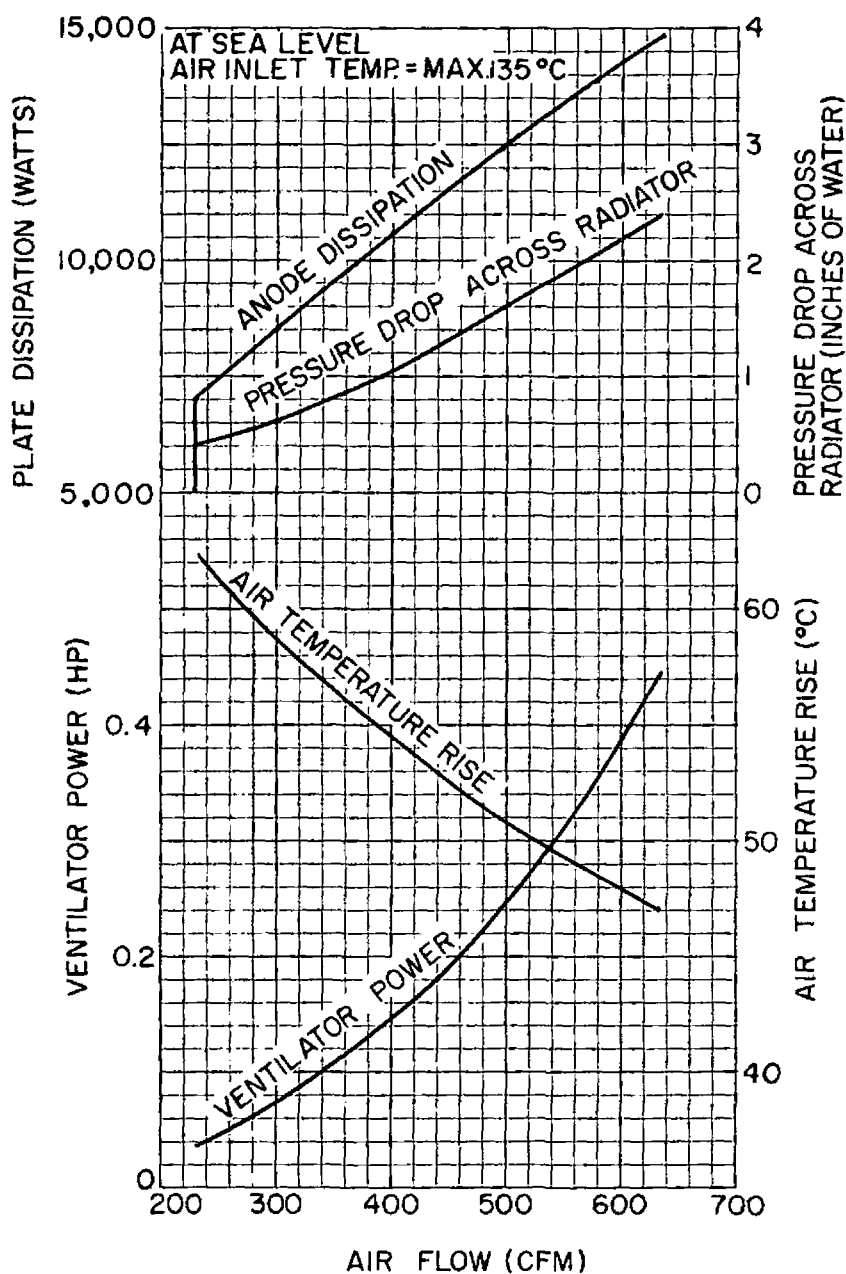
GRID CONNECTOR S-25403

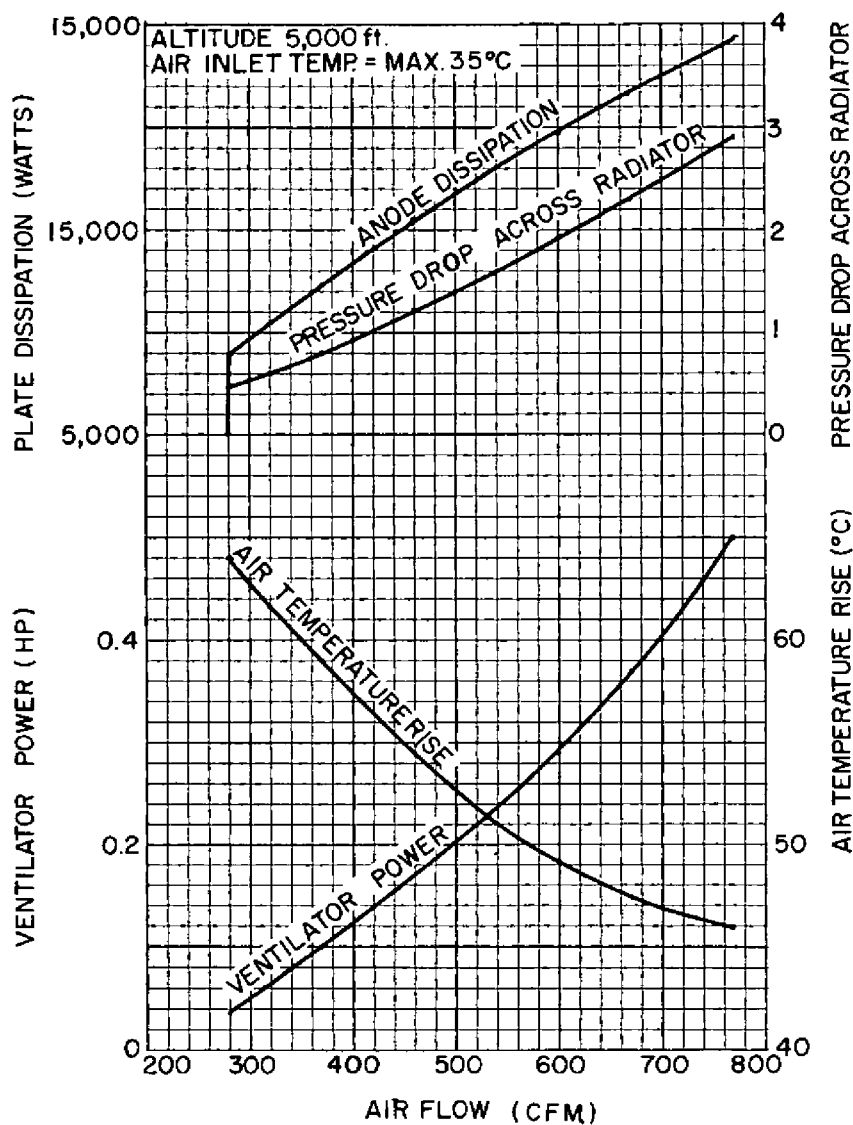
7800





7800





7800

