

Ampere[®] ELECTRONIC CORPORATION
 HICKSVILLE, LONG ISLAND, N. Y. 11802

7806 7807

TYPES
7806, 7807
 TRIODES

The Ampere 7806 and 7807 are electrically identical, high vacuum power triodes of the external plate type, and are designed for oscillator use in industrial equipment at frequencies up to 30 Mc.

The 7806 is forced-air cooled and the radiator is an integral part of the tube. The 7807 is watercooled and has a separate waterjacket which makes quick and safe tube replacement possible.

These tubes are constant power types with output power relatively independent of load impedance.

GENERAL CHARACTERISTICS

MECHANICAL

Mounting Position	Vertical, plate down
Dimensions	See outline drawings
Accessories	
Grid Connector	S-25403
Clips with Cable for Filament	S-25401
Air flow Chamber (7806)	S-25688
Water Jacket (7807)	S-25402
Net Weight (approx.)	
7806	36.5 lbs
7807	6 lbs
Shipping Weight (approx.)	
7806	186.25 lbs
7807	83.13 lbs
Seal Temperature ¹	220°C
<u>Cooling Characteristics</u>	See graphs and Table I and II

TABLE I COOLING CHARACTERISTICS - 7806

Plate Dissipation (KW)	Altitude (ft)	Max Air Inlet Temp. (°C)	Min Air Flow (cfm)	Total Pressure (in. water)
7	0	35	233	0.40
	0	45	272	0.52
	5000	35	278	0.48
	10,000	25	293	0.48
10	0	35	370	0.91
	0	45	434	1.23
	5000	35	444	1.11
	10,000	25	466	1.07
15	0	35	639	2.37
	0	45	748	3.11
	5000	35	766	2.88
	10,000	25	805	2.76

Ampere

For Intermittent Service, see Figures on Page 5

¹ A low velocity air flow directed on the seals is required for the 7807.

TABLE II COOLING CHARACTERISTICS - 7807

Plate Dissipation (kW)	Max Water Inlet Temp. ² (°C)	Min Water Flow ³ (gal/min)	Pressure Drop In Water Jacket (lbs/sq inch)
5	20	1.6	0.3
	50	4	3.25
10	20	3	1.5
	50	7	10.5
15	20	4.5	3.7
	50	10	19.2
20	20	6	7.5
	50	13	34.0

ELECTRICAL

Filament	
Filament voltage	thoriated tungsten 8 volts +5%
Filament current ⁴	-10% 130 amps
Direct Interelectrode Capacitances	
Input	45 pf
Output	0.9 pf
Plate to grid	23.5 pf
Amplification factor	21
(Plate voltage = 12,000 volts, Plate current = 2 amps)	
Transconductance	25,000 micromhos
(Plate voltage = 12,000 volts, Plate current = 2 amps)	

RF CLASS C OSCILLATOR
FOR INDUSTRIAL USE

PLATE VOLTAGES FROM THREE PHASE FULL WAVE RECTIFIER WITHOUT FILTER

Maximum Ratings, Absolute Values
(Frequency = 30 Mc)

DC plate voltage	CCS 13,000 volts
DC plate current	5 amps
DC negative grid voltage	2,000 volts
DC grid current (loaded)	1.5 amps
DC grid current (unloaded)	2 amps
Plate input	60,000 watts
Plate dissipation	20,000 watts
Grid resistance	10,000 ohms

² The max permissible value of the water inlet temperature is 50°C.

³ At temperatures between 20 and 50°C the required quantity of water can be found by proportional interpolation.

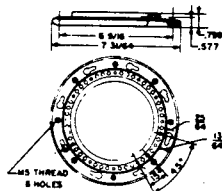
⁴ The filament current must never exceed a peak value of 280 amps instantaneously at any time during the starting schedule.

RF CLASS C OSCILLATOR FOR INDUSTRIAL USE PLATE VOLTAGES FROM THREE PHASE FULL WAVE RECTIFIER WITHOUT FILTER

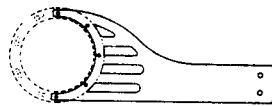
Typical Operation
(Frequency = 30 Mc)

DC Plate Voltage	12,000	10,000	8,000 volts
DC Plate Current (loaded)	4.5	4.5	4.5 amps
DC Plate Current (unloaded)	0.65	0.63	0.62 amps
DC Grid Current (loaded)	0.9	0.9	0.9 amps
DC Grid Current (unloaded)	1.22	1.3	1.35 amps
Grid Resistor	1,100	1,000	900 ohms
Plate Inp	54,000	45,000	36,000 watts
Plate Dissipation	15,000	13,700	12,800 watts
Plate Power Output	39,000	31,300	23,200 watts
Efficiency ⁵	72.5	70	64.5 %
Useful Power in Load	30,000	25,000	18,000 watts
Load Resistance	1,450	1,100	800 ohms
Feedback ratio	16	19	24 %

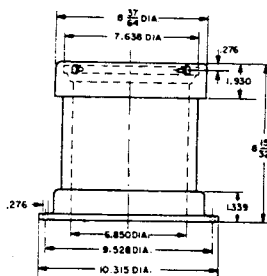
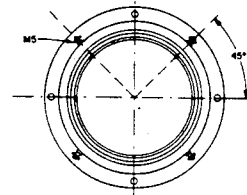
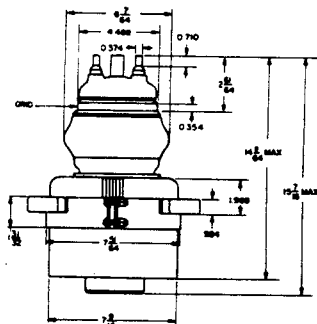
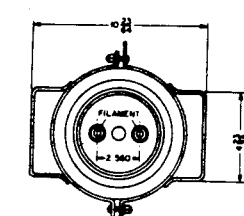
7806



GRID CONNECTOR S-25403

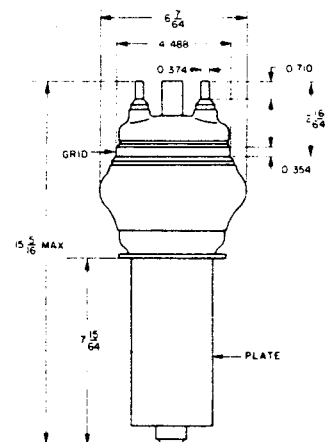
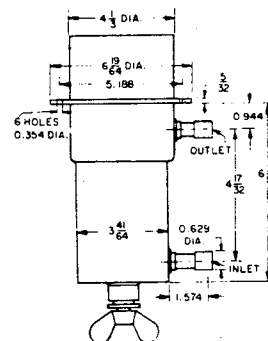
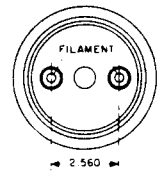


GRID CONNECTOR S-25403 WITH FLEXIBLE METAL STRAP.
RECOMMENDED GRID LEAD CONNECTION AT FREQUENCIES
ABOVE 4 Mc/S.



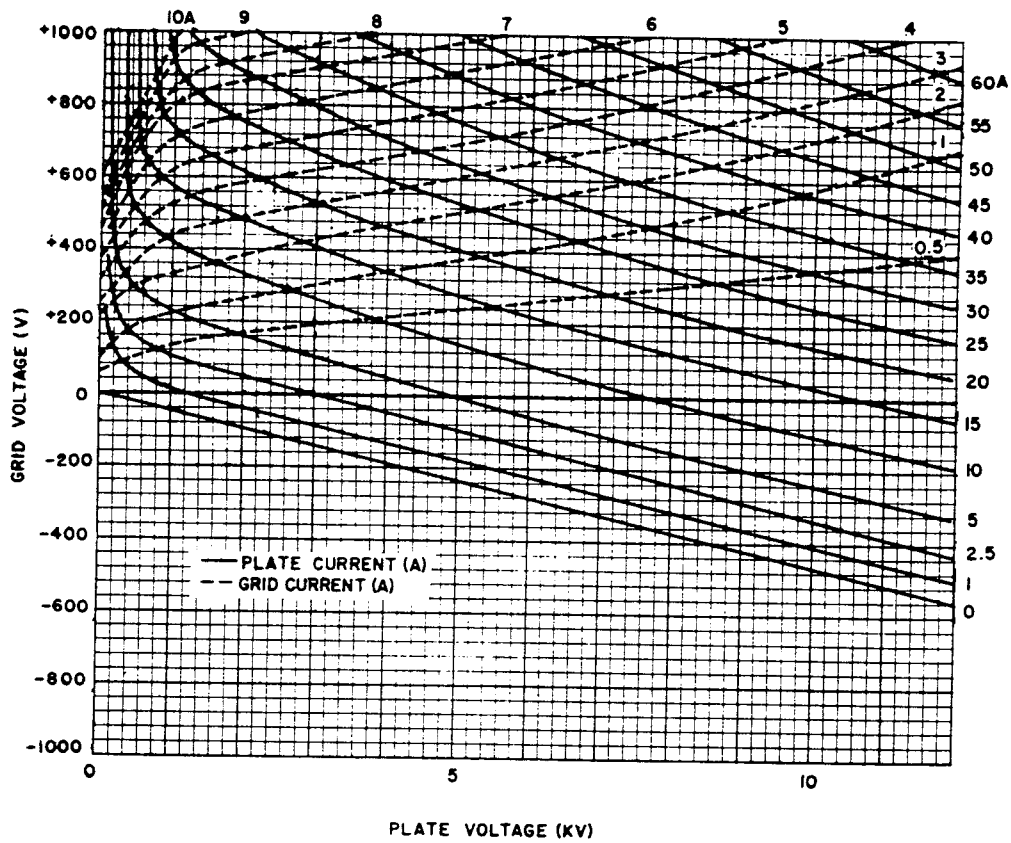
AIR FLOW CHAMBER
S-25688

7807



⁵ Typical values measured in a circuit having an efficiency of approx 85%.

CONSTANT CURRENT CHARACTERISTICS



FILAMENT CHARACTERISTICS

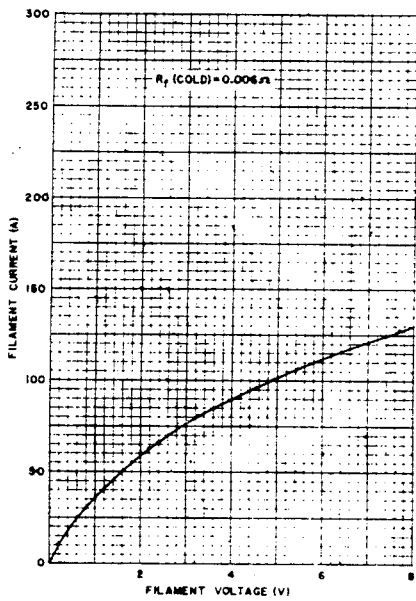
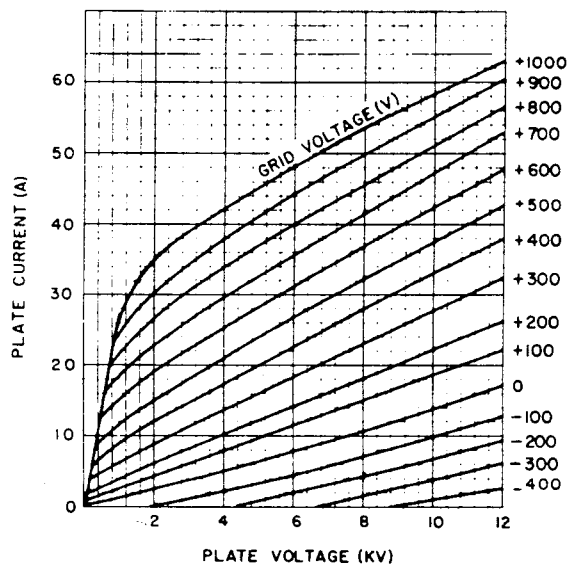
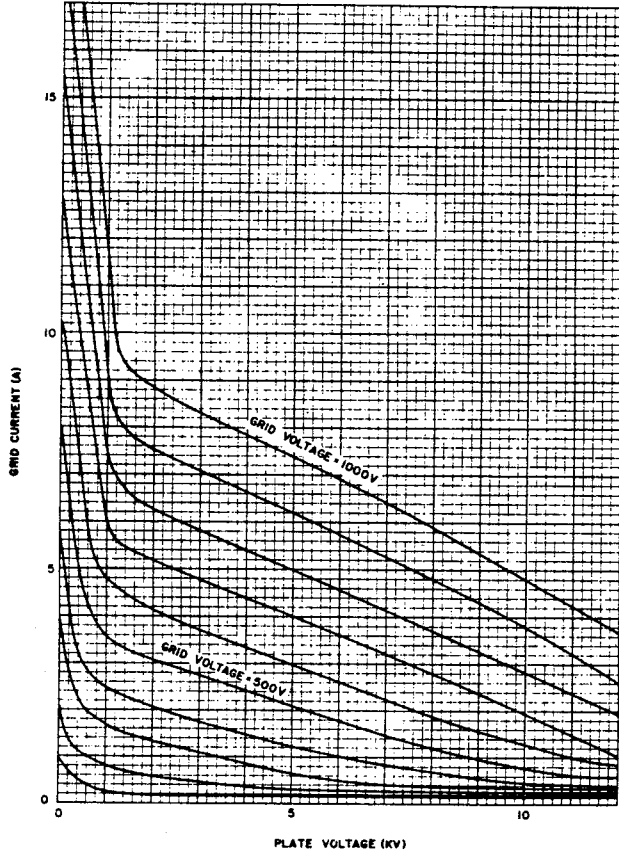


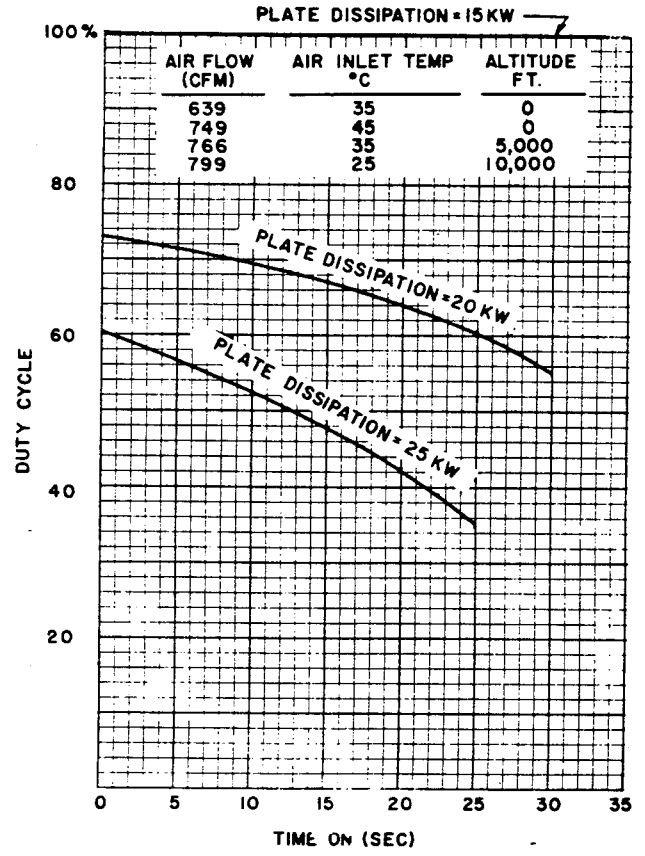
PLATE CHARACTERISTICS



GRID CHARACTERISTICS

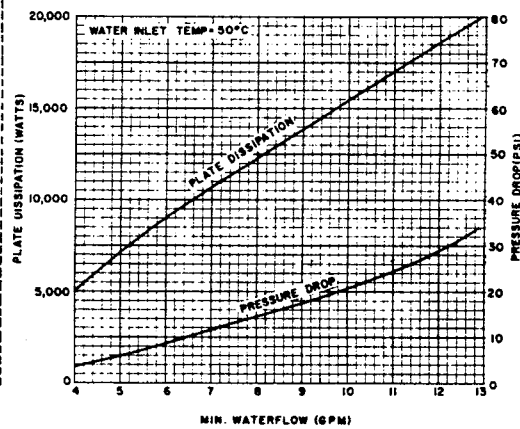
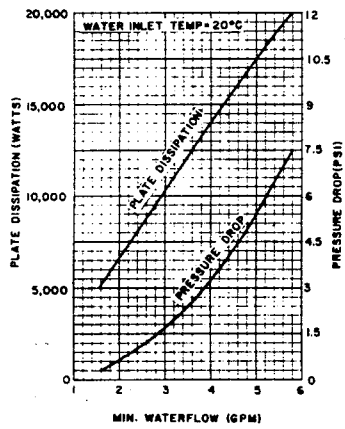


INTERMITTENT SERVICE 7806



7807

COOLING CHARACTERISTICS



COOLING CHARACTERISTICS

