

# FEDERAL POWER TRIODE

## Type F-6399

### 6 Kilowatts Plate Dissipation



*Out of date*

#### GENERAL DATA

#### DESCRIPTION:

Federal's Type F-6399 is a three-electrode tube designed for use as an industrial oscillator. The relatively wide spacing between the elements, and the lack of internal insulators make this type tube especially suitable for industrial applications. The anode is water-cooled with an integral water jacket, capable of dissipating 6 kilowatts. The cathode is a thoriated tungsten filament. Maximum ratings apply up to 30 megacycles. Operation up to 50 megacycles is permissible at reduced ratings.

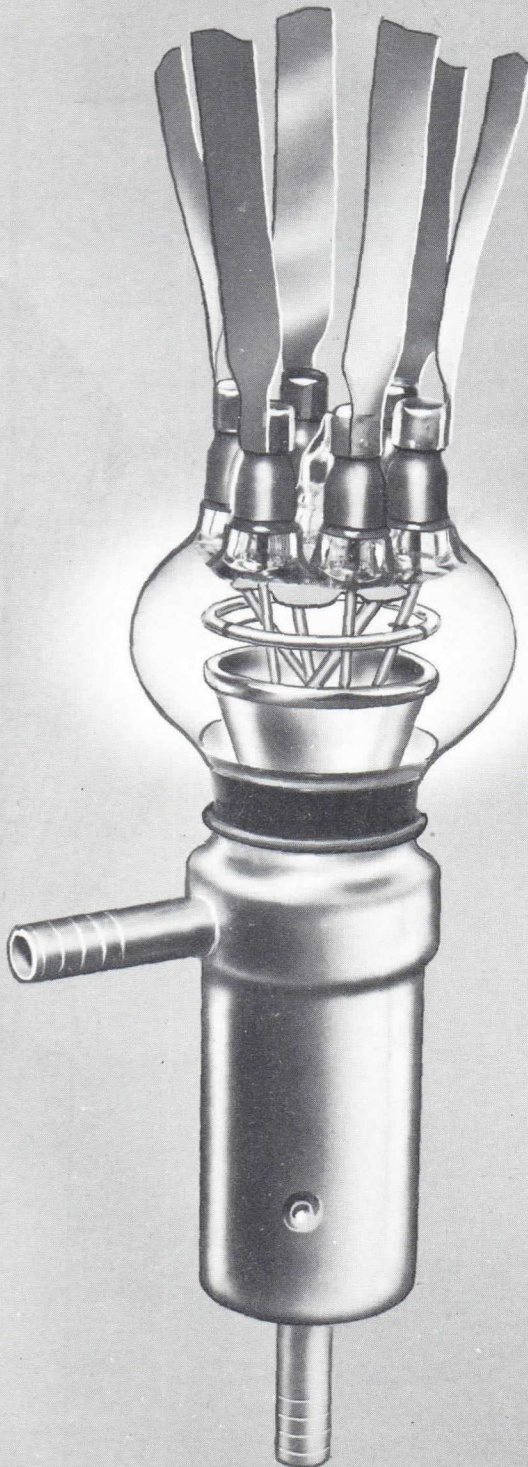
#### Electrical:

|                                                                        |                    |
|------------------------------------------------------------------------|--------------------|
| ► Filament Voltage*                                                    | 11 Volts           |
| ► Filament Current                                                     | 29 Amperes         |
| ► Amplification Factor,<br>$E_c = -200 \text{ V}, I_b = 0.2 \text{ A}$ | 25                 |
| ► Interelectrode Capacitances                                          |                    |
| Grid-Plate                                                             | 11.5 $\mu\text{f}$ |
| Grid-Filament                                                          | 13.8 $\mu\text{f}$ |
| Plate-Filament                                                         | 1.7 $\mu\text{f}$  |

\*Full rated voltage may be safely applied to the cold filament.

#### Mechanical:

|                                              |              |
|----------------------------------------------|--------------|
| ► Mounting Position—<br>Vertical, Anode Down |              |
| ► Type of Cooling—Water                      |              |
| Water Flow                                   | 3.5 GPM      |
| Max. Outgoing water<br>Temperature           | 70° C        |
| Maximum Glass<br>Temperature                 | 150° C       |
| ► Net Weight,<br>Approximate                 | 1 1/4 Pounds |



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### Maximum Ratings vs. Operating Frequency

|                                     |     |    |            |
|-------------------------------------|-----|----|------------|
| Frequency                           | 30  | 50 | Megacycles |
| Percentage of Maximum               |     |    |            |
| Rated Plate Voltage and Plate Input |     |    |            |
| Class C — Telegraphy                | 100 | 75 | Per Cent   |

## Maximum Ratings and Typical Operating Conditions

### RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

(Key-down conditions per tube without amplitude modulation)†

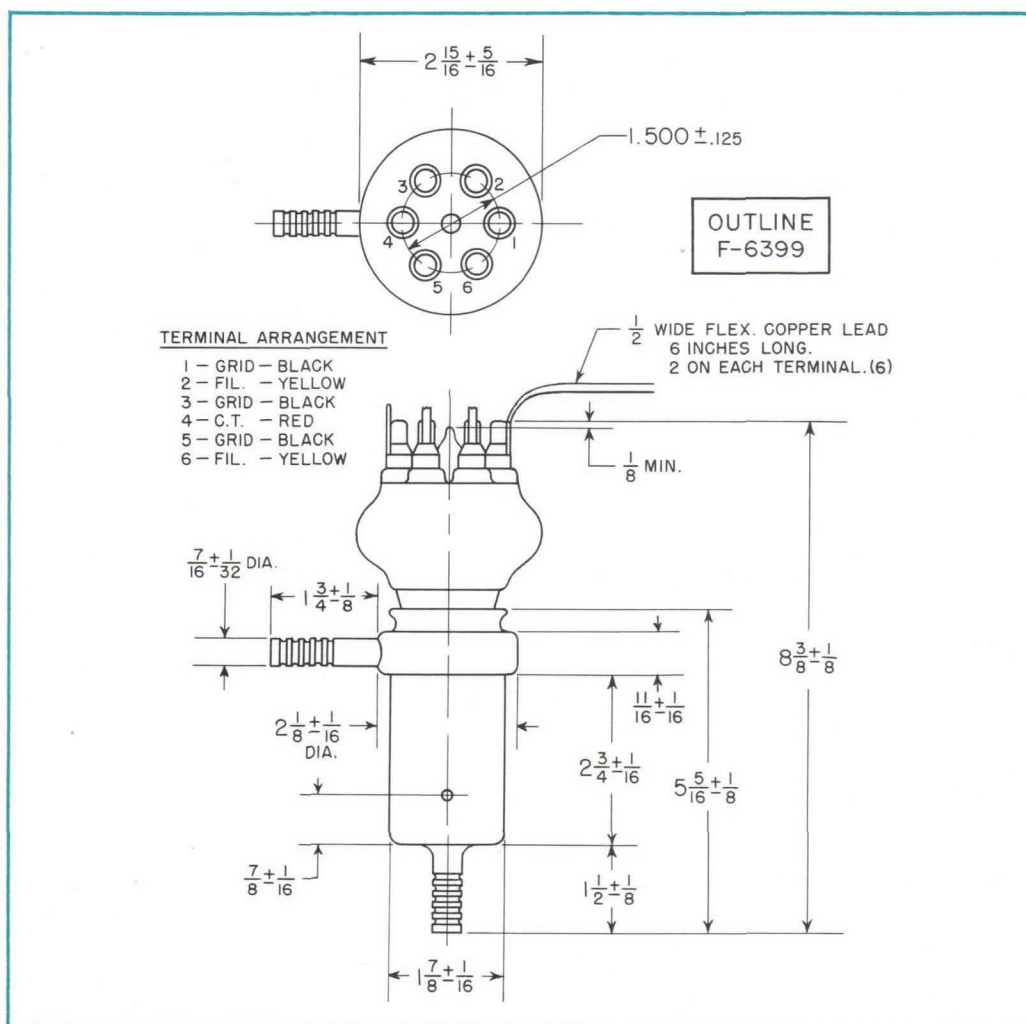
#### Maximum Ratings, Absolute Values

|                   |              |
|-------------------|--------------|
| DC Plate Voltage  | 6,200 Volts  |
| DC Grid Voltage   | —1,500 Volts |
| DC Plate Current  | 1.5 Amps.    |
| DC Grid Current   | 0.16 Amps.   |
| Plate Input       | 9 KW         |
| Plate Dissipation | 6 KW         |

#### Typical Operation

|                              |       |       |             |
|------------------------------|-------|-------|-------------|
| DC Plate Voltage             | 4,500 | 5,000 | 6,000 Volts |
| DC Grid Voltage              | —500  | —600  | —800 Volts  |
| Peak R-F Grid Voltage        | 1,100 | 1,300 | 1,500 Volts |
| DC Plate Current             | 1.0   | 1.2   | 1.4 Amps.   |
| DC Grid Current, Approximate | 0.12  | 0.13  | 0.15 Amps.  |
| Driving Power, Approximate   | 120   | 160   | 210 Watts   |
| Power Output, Approximate    | 3     | 4     | 6 KW        |

†Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of the carrier conditions.

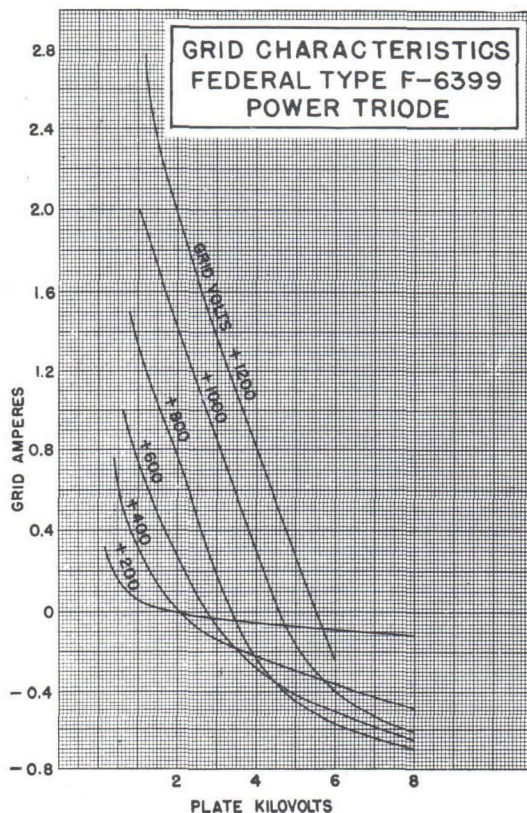
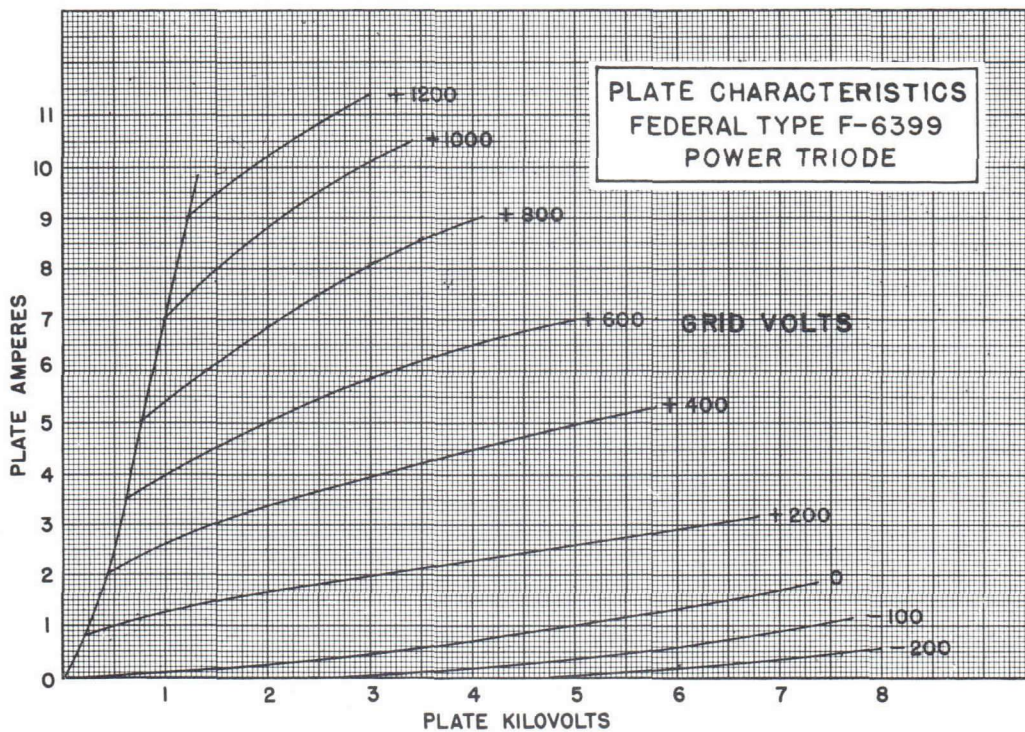


Integral water jacket incorporated in the tube design.

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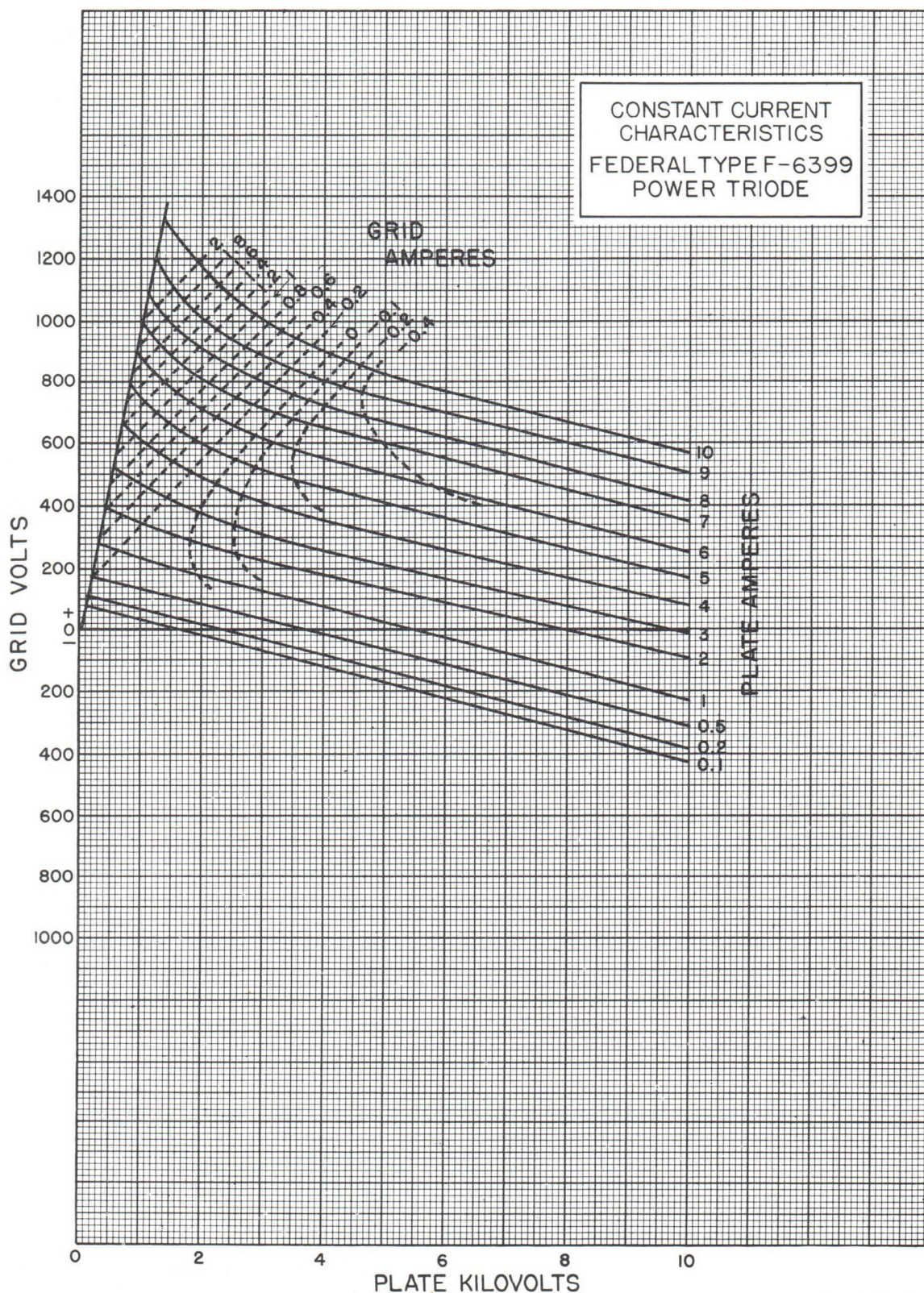
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Grid and Filament leads attached for convenience of equipment designers.



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