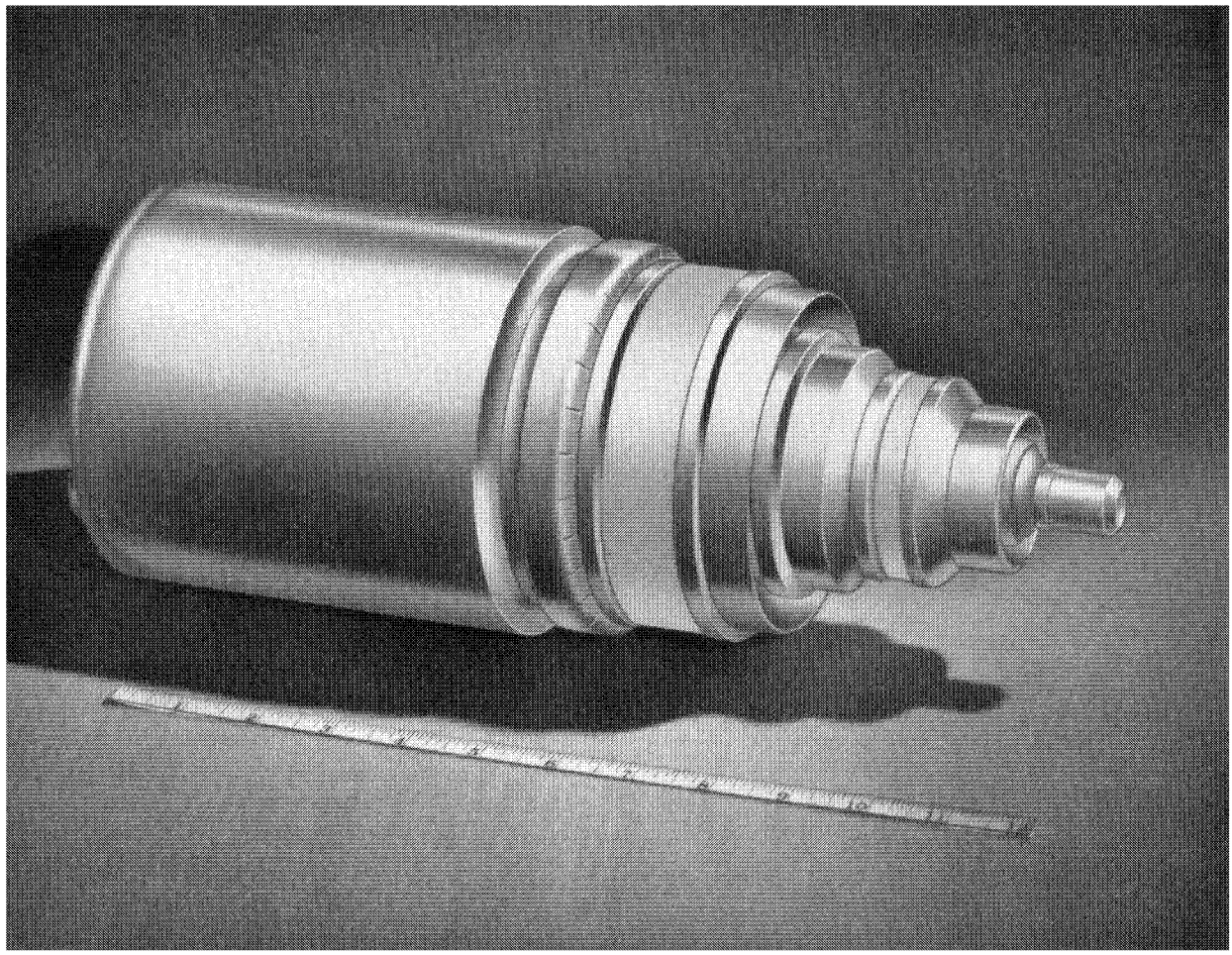


TETRODE

25-KILOWATTS VHF TELEVISION OUTPUT
VHF TETRODE
GROUNDED-GRID CIRCUITS

WATER COOLED
METAL AND CERAMIC
GAIN IN EXCESS OF 10

The GL-6251 is a four-electrode, water-and-forced-air-cooled transmitting tube for use as a power amplifier or oscillator in grounded-grid circuits with both grids maintained at radio-frequency ground potential. The output circuit is connected between the anode and the screen grid. The anode is capable of dissipating twenty-five kilowatts. The cathode is a thoriated-tungsten filament. Maximum ratings apply up to 220 megacycles.

In Class B grounded-grid broadband television amplifier service this tube has a useful synchronizing peak-power output of twenty-five kilowatts at 220 megacycles. Because of its ratings, the tube is also well adapted to use in dielectric-heating equipment.

High operating efficiency is assured because of the close spacing of the tube electrodes, the ring-seal construction, and the low-loss factor due to the silver-plated external parts and the ceramic insulator. The ring-seal design permits quick plug-in installation. In addition, the grounded-grid construction eliminates the necessity for neutralization in a properly designed circuit.

TECHNICAL INFORMATION

GENERAL

Electrical	Minimum	Bogey	Maximum	
⊕ Filament Voltage	5.1	5.5	5.75	Volts
Filament Current at 5.5 Volts	....	190	....	Amperes
Filament Starting Current	....	....	360	Amperes
Filament Cold Resistance	....	0.004	....	Ohms
Filament Heating Time	30	....	....	Seconds
Amplification Factor, G_2 to G_1				
E_b=1000 Volts, I_b=0.1 Amperes	....	20	...	
Peak Cathode Current*	....	....	30	Amperes
Direct Interelectrode Capacitances§				
Grounded-Grid Circuit				
Cathode-Plate†	....	0.06	....	μμf
Input	....	75	....	μμf
Output	....	27	....	μμf

Mechanical

Mounting Position—Vertical, anode down		
Net Weight, approximate	15	Pounds

Thermal

Type of Cooling—Water and Forced Air		
Water Cooling		
Water Flow		
Anode	12 Min	Gallons per Minute
Water Pressure	80 Max	Pounds per Square Inch
Pressure Drop at Rated Flow, approximate	13	Pounds per Square Inch
Outlet Water Temperature	70 Max	C
Air Cooling		
Air Flow		
Anode Seal	30 Min	Cubic Feet per Minute
Filament Seal	15 Min	Cubic Feet per Minute
Grid-to-Grid Seal	10 Min	Cubic Feet per Minute
Ceramic Temperature	200 Max	C
□ Seal and Terminal Temperature	180 Max	C

MAXIMUM RATINGS AND TYPICAL OPERATION

RADIO-FREQUENCY AMPLIFIER—CLASS B TELEVISION SERVICE

Synchronizing-Level Conditions Per Tube Unless Otherwise Specified

Maximum Ratings, Absolute Values

DC Plate Voltage	7000 Max	Volts
⊕ DC Grid-No. 2 Voltage	700 Max	Volts
DC Plate Current	8 Max	Amperes
Plate Input	50 Max	Kilowatts
Grid-No. 2 Input‡	350 Max	Watts
⊕ DC Grid-No. 2 Current		
Pedestal Level	0.200 Max	Amperes
Plate Dissipation	25 Max	Kilowatts
Grid-No. 1 Dissipation	150 Max	Watts
⊕ DC Grid-No. 1 Current	1.0 Max	Amperes

Typical Operation—Grounded-Grid Circuit up to 216 Megacycles

Bandwidth 7 Megacycles, 1 Decibel Voltage		
DC Plate Voltage	6800	Volts
⊕ DC Grid-No. 2 Voltage//	600	Volts
DC Grid-No. 1 Voltage	−20	Volts
Peak RF Plate Voltage		
Synchronizing Level	4800	Volts
Pedestal Level	3600	Volts
Peak RF Driving Voltage		
Synchronizing Level	350	Volts
Pedestal Level	250	Volts

TECHNICAL INFORMATION (CONT'D)

Typical Operation (Cont'd)

DC Plate Current		
Synchronizing Level	7.5	Amperes
Pedestal Level	5.8	Amperes
DC Grid-No. 2 Current//		
Pedestal Level	0.05	Amperes
DC Grid-No. 1 Current		
Synchronizing Level	0.90	Amperes
Pedestal Level	0.55	Amperes
Driving Power at Tube, approximate		
Synchronizing Level	2.3	Kilowatts
Pedestal Level	1.3	Kilowatts
Power Output, approximate¶		
Synchronizing Level	25	Kilowatts
Pedestal Level	15	Kilowatts

* Maximum usable cathode current (plate current plus current to each grid) for any condition of operation.

§ Control grid and screened grid are connected together.

† Measured with 12-inch diameter flat metal disk attached to the screen-grid terminal and grounded.

‡ Calculated from characteristic curve only. This value includes dissipation transferred from driving power. Maximum allowable screen input as indicated by measured d-c current and voltage is much lower because of secondary screen emission.

//DC Grid-No. 2 voltage and current should be held at the minimum values consistent with proper circuit operation. Negative values of screen current are frequently encountered but are not detrimental.

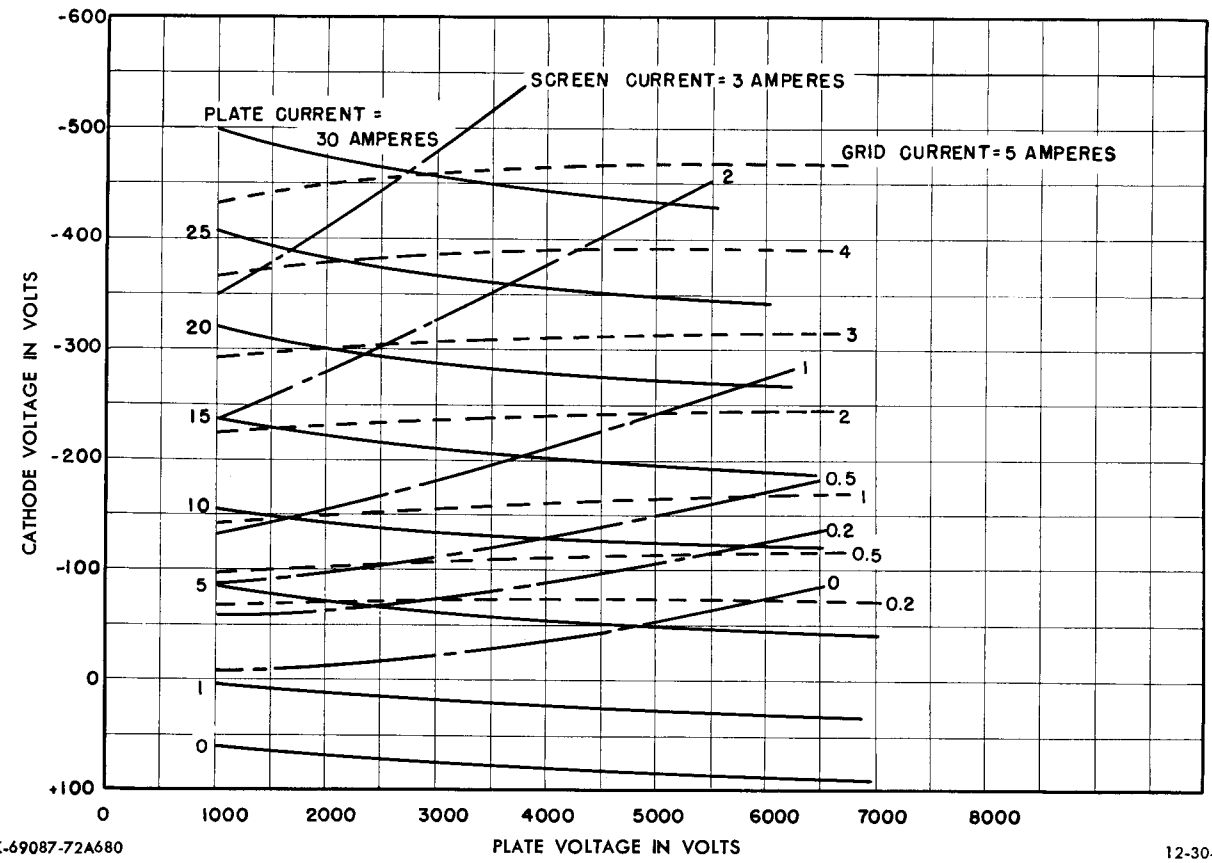
¶ Useful power output including power transferred from driver stage.

⊕ Denotes a change.

□Denotes an addition.

CONSTANT CURRENT CHARACTERISTICS

SCREEN VOLTAGE=700 VOLTS, CONTROL-GRID GROUNDED
ELECTRODE VOLTAGES MEASURED TO GROUND



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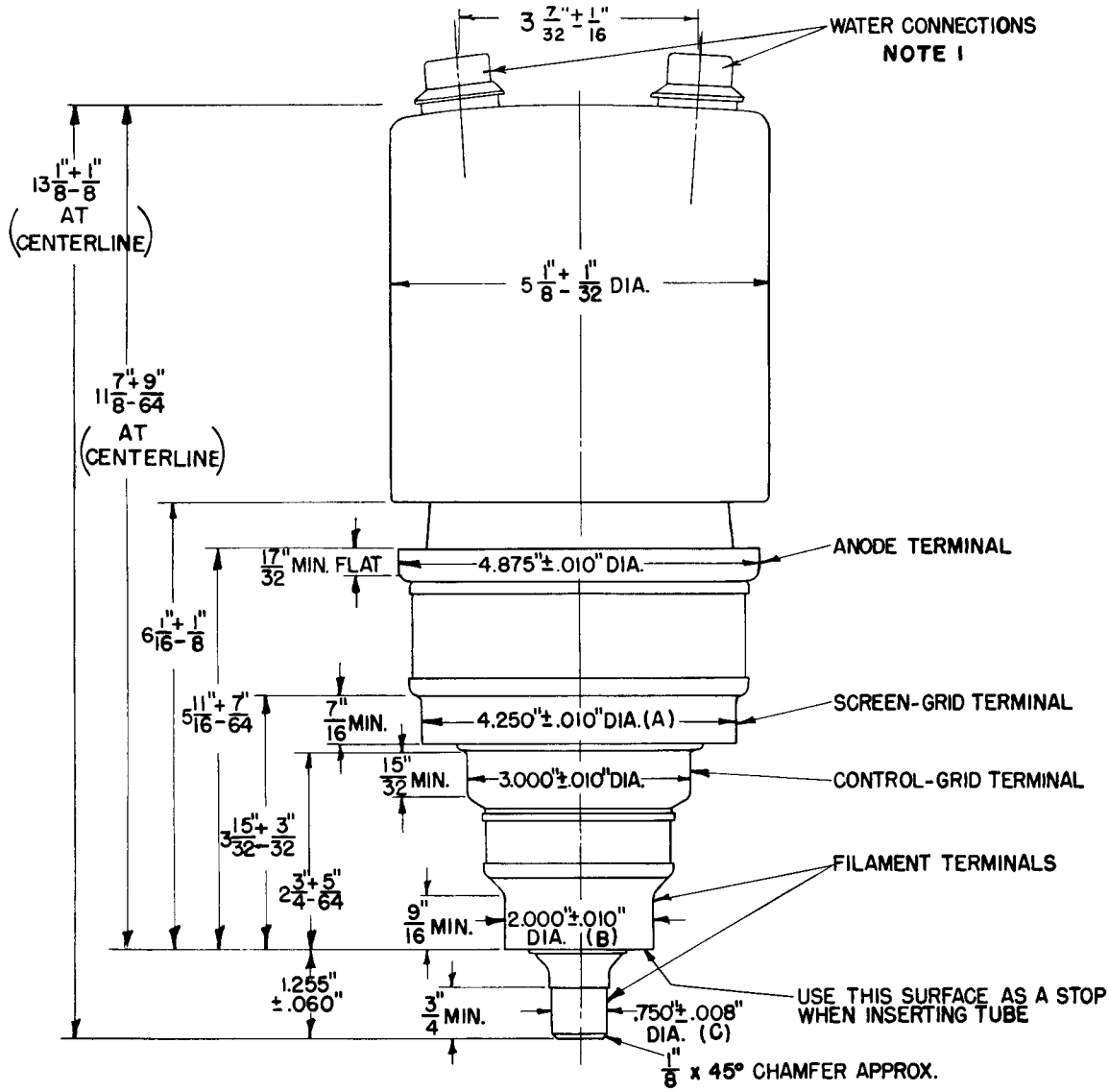

(A) MAX. ECCENTRICITY .040"
(B) MAX. ECCENTRICITY .040"
(C) MAX. ECCENTRICITY .050"
WITH RESPECT TO CENTERLINE DETERMINED BY CENTERS OF ANODE TERMINAL & CONTROL-GRID TERMINAL.

NOTE 1: MATES WITH WIGGINS SOCKET NO. BC-323B OR EQUIVALENT.
E. B. WIGGINS OIL TOOL COMPANY, INC., LOS ANGELES, CALIFORNIA

N-20726AZ—Outline Revised

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ELECTRONIC COMPONENTS DIVISION

GENERAL ELECTRIC

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