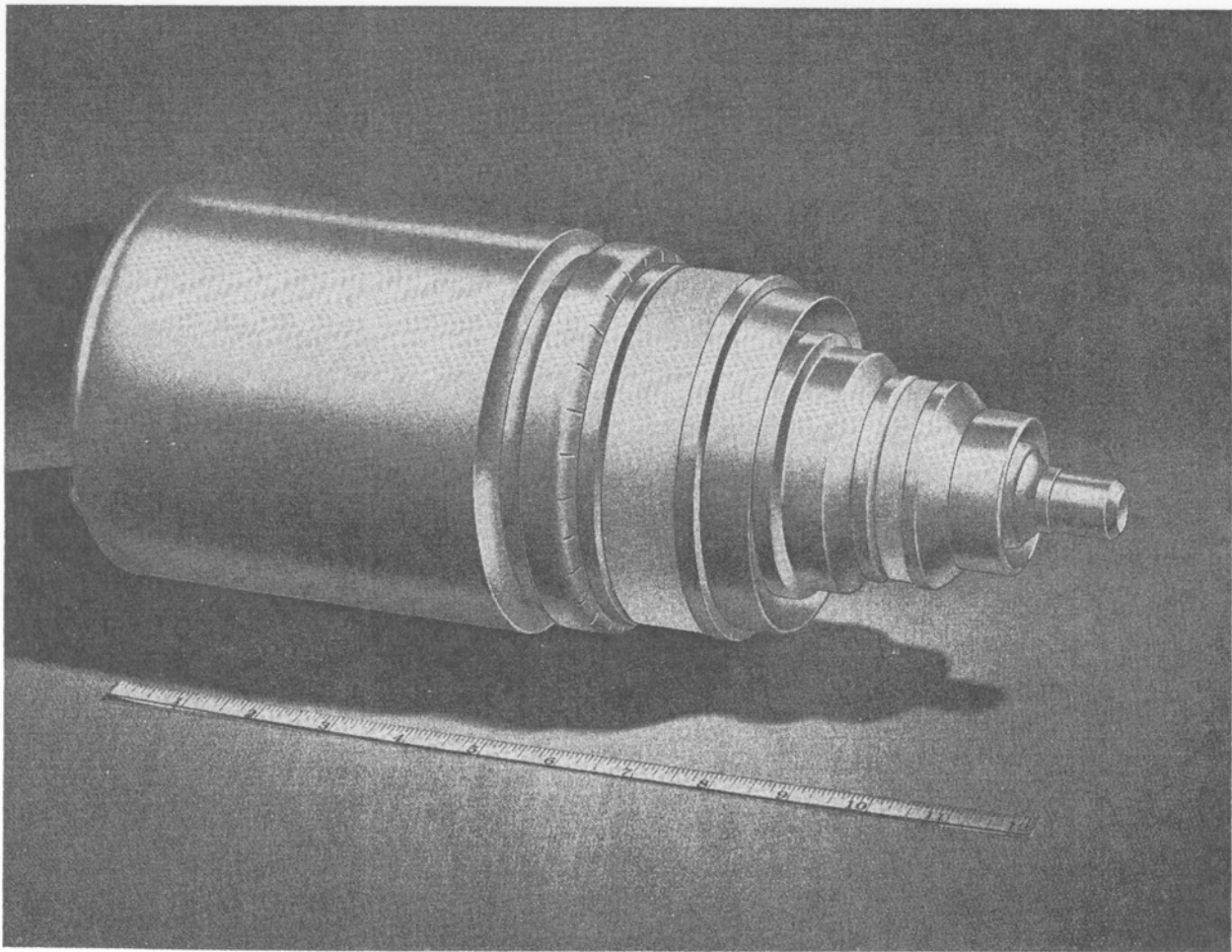




TETRODE

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 synchroniz-

ing 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.

GENERAL  ELECTRIC

Supersedes ET-T1060 dated 2-54

TECHNICAL INFORMATION

GENERAL

Electrical	Minimum	Bogey	Maximum
Filament Voltage.....	5.25	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	 $\mu\mu f$
Input.....	....	75	 $\mu\mu f$
Output.....	....	27	 $\mu\mu f$
Mechanical			
Mounting Position—Vertical			
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.....	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

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.....	750 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.....	0.250 Max	Amperes
Plate Dissipation.....	.25 Max	Kilowatts
Grid-No. 1 Dissipation.....	150 Max	Watts
□ DC Grid-No. 1 Current.....	0.7 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.....	700	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	0.05	Amperes
⊕ Pedestal Level§		
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 π	25	Kilowatts
⊕ Pedestal Level π	15	Kilowatts

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

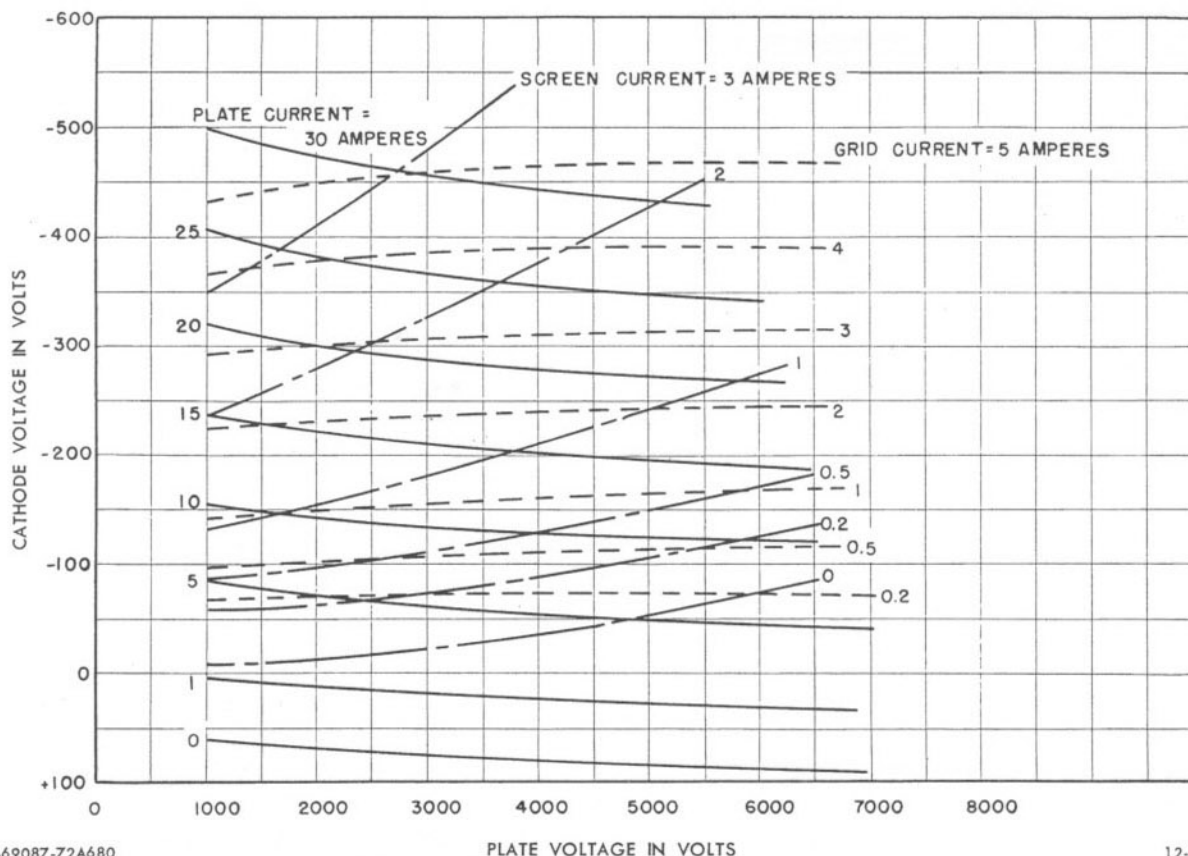
† Measured with 12-inch diameter flat metal disk attached to the screen-grid terminal and grounded.

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

§ May vary considerably due to slight changes in load impedance. Negative values of screen current are frequently encountered.

π Useful power output including power transferred from driver stage.

⊕ Denotes a change. □ Denotes an addition.



K-69087-72A680

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

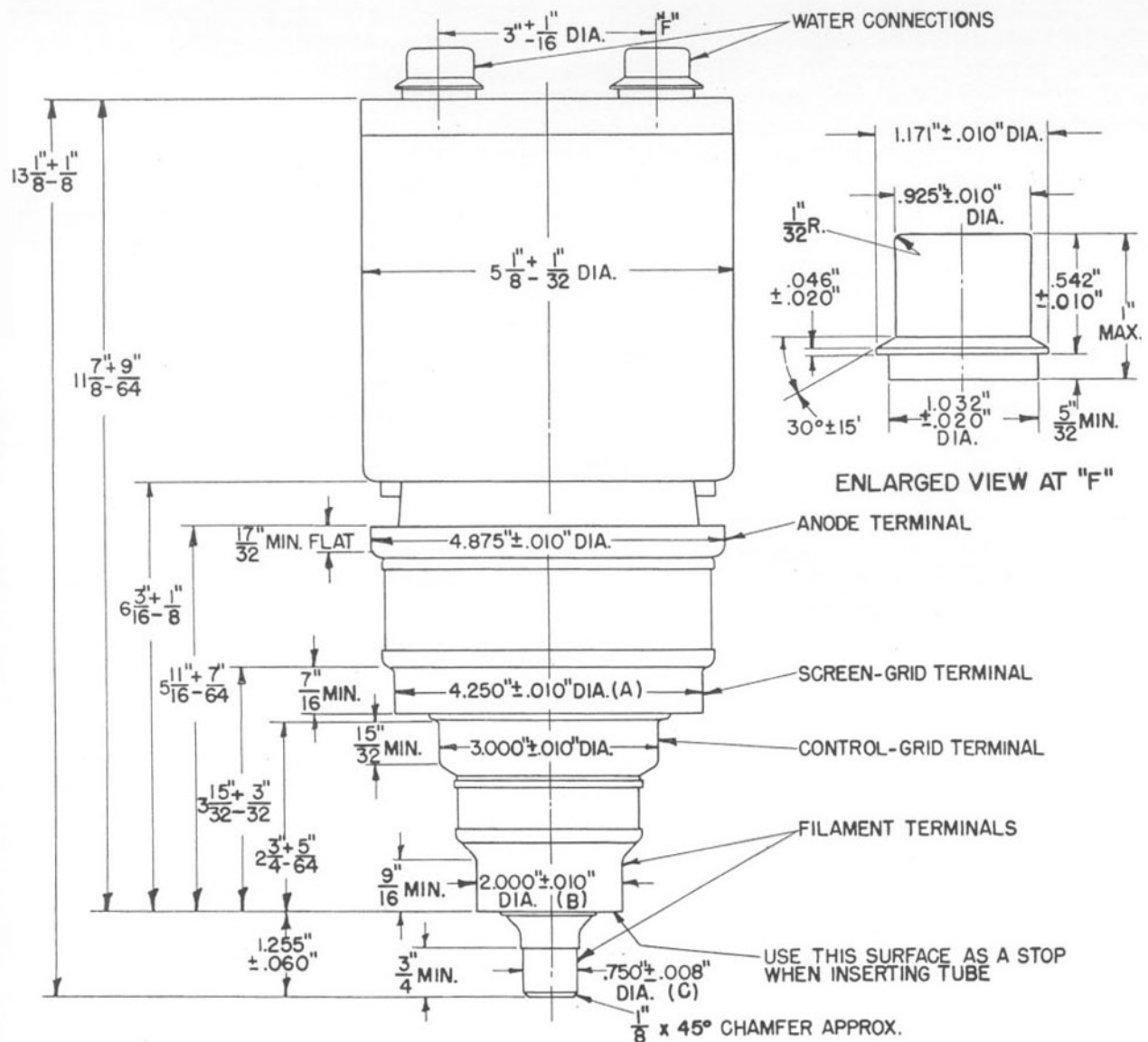
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GL-6251

ET-T1165

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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.

N-20726AZ

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TUBE DEPARTMENT
GENERAL ELECTRIC
 Schenectady 5, N. Y.

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