



6CD6-G

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BEAM POWER AMPLIFIER

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage. 6.3 ac or dc volts

Current. 2.5 amp

Transconductance (Approx.), with plate

volts = 175, grid-No.2 volts = 175,

grid-No.1 volts = -30 7500 μ mhos

Mu-Factor, Grid No.2 to Grid No.1, with

plate volts = 175, grid-No.2 volts

= 175, grid-No.1 volts = -30 3.8

Direct Interelectrode Capacitances:⁰Grid No.1 to Plate 1.0 max. μ mfInput. 26 μ mfOutput 10 μ mf⁰ With no external shield.

Mechanical:

Mounting Position. Vertical, base up or down;
Horizontal, with pins 2 &
7 in vertical planeOverall Length 5-17/32" $\pm$ 5/32"Seated Length. 4-31/32" $\pm$ 5/32"

Maximum Diameter 2-1/16"

Bulb ST-16

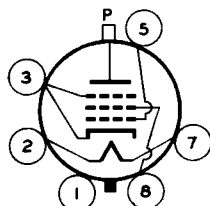
Cap. Small

Base Medium-Shell Octal 6-Pin

Basing Designation for BOTTOM VIEW 5BT

Pin 1-No Connection

Pin 2-Heater

Pin 3-Cathode,
Grid No.3

Pin 5-Grid No.1

Pin 7-Heater

Pin 8-Grid No.2

Cap-Plate

HORIZONTAL DEFLECTION AMPLIFIER

Maximum Ratings, Design-Center Values:

*For operation in a 525-line, 30-frame system**

DC PLATE VOLTAGE 700 max. volts

PEAK POSITIVE-PULSE PLATE VOLTAGE* 6000 max. volts

PEAK NEGATIVE-PULSE PLATE VOLTAGE* -1500 max. volts

DC GRID-No.2 (SCREEN) VOLTAGE. 175 max. volts

DC GRID-No.1 (CONTROL-GRID) VOLTAGE. -50 max. volts

PEAK NEGATIVE-PULSE GRID-No.1 VOLTAGE. -150 max. volts

^{*} As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.^{*} The duration of the voltage pulse must not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

FEB. 1, 1950

TUBE DEPARTMENT

TENTATIVE DATA

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



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DC PLATE CURRENT	170 max.	ma
GRID-No.2 INPUT.	3 max.	watts
PLATE DISSIPATION.	15 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	135 max.	volts
Heater positive with respect to cathode.	135 max.	volts
BULB TEMPERATURE (At hottest point)* . . .	210 max.	°C

Typical Operation in Accompanying Circuit:*With Kinescope Type 16GP4*

DC Plate Supply Voltage:		
From dc power supply*	350	volts
From dc boost supplied by		
6W4-GT (Approx.)**	150	volts
Total supply voltage (Approx.)***	500	volts
Grid-No.2 Voltage	170	volts
Cathode-Bias Resistor§	300	ohms
Grid-No.1 Input Voltage (See Fig.1):		
Peak-to-peak sawtooth component.	75	volts
Negative peaking component	55	volts
DC Plate Current	92	ma
DC Grid-No.2 Current	15	ma
Peak Positive-Pulse Plate Output		
Voltage (Approx.):		
For kinescope anode current		
of 0 microamperes.	5500	volts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance	1.0	megohm
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* For tube in vertical position with base down in free space and with natural ventilation, the hottest point on bulb is on side corresponding to the plate side having only one fin. This point will be found at the junction of the dome and the body of the bulb in either of two places, each of which is on a plane intersecting the plane of the grids at an angle of 45° and passing through the tube axis. The temperature may be measured either with a thermocouple or with temperature-sensitive paint, such as Tempilaq. The latter is made by the Tempil Corporation, 132 West 22nd Street, New York 11, N.Y., in the form of liquid and stick, and is stated by the manufacturer to have an accuracy of 1 per cent.

• Measured to ground.

** Measured between B+ and the high end of C12. This source also provides approximately 20 milliamperes to operate vertical deflection amplifier and other circuits.

*** Measured across C12 + C13.

▲ Measured to cathode and is preferably obtained through a series dropping resistor of sufficient magnitude to limit the grid-No.2 input to the rated maximum value.

§ The specified value is required to protect the tube for a limited time in the event of temporary failure of excitation and resultant loss in developed grid-No.1 bias.

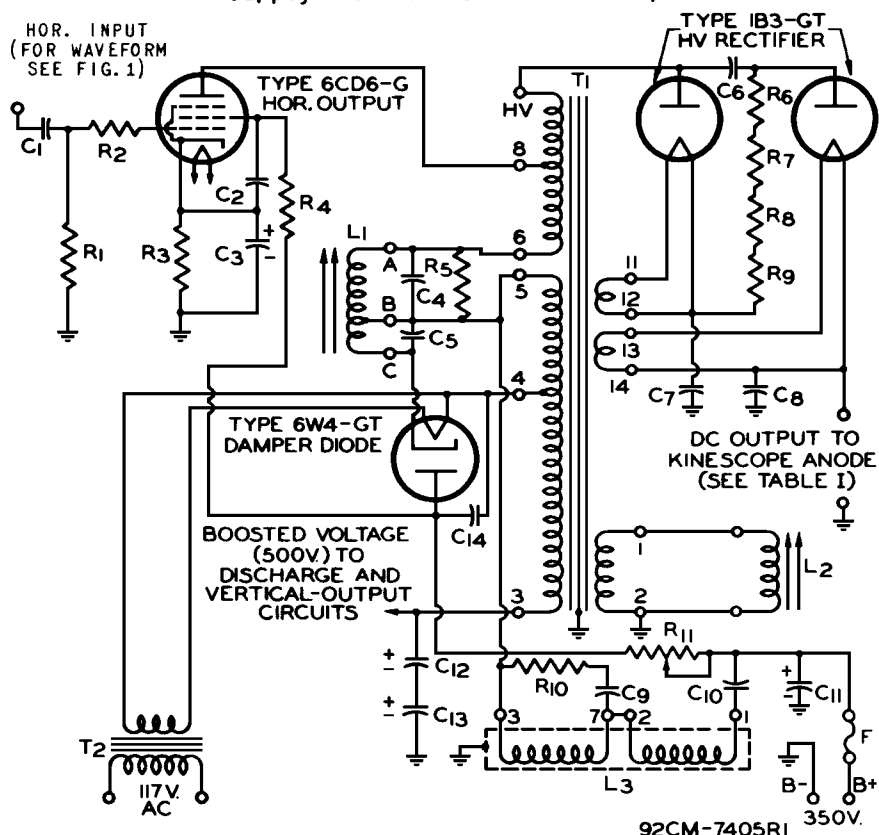


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BEAM POWER AMPLIFIER

Horizontal-Deflection Circuit and Pulse-Operated High-Voltage Supply for RCA-16GP4 Kinescope



- C1: 0.01 μ f, 600 volts
 C2: 0.25 μ f, 400 volts
 C3: 4 μ f, 50 volts,
 electrolytic
 C4: 0.03 μ f, 400 volts
 C5: 0.1 μ f, 400 volts
 C6 C7: 500 μ f, 10 kilovolts
 C8: 500 μ f, 20 kilovolts
 C9: 47 μ f, 1500 volts
 C10: 0.1 μ f, 400 volts
 C11: 20 μ f, 400 volts,
 electrolytic
 C12 C13: 20 μ f, 300 volts,
 electrolytic
 C14: 100 μ f rated for 2500
 peak pulse volts.

Specific value should be selected to give retrace time of about 7.5 microseconds.

F: Fuse, 1/4 A, 500 volts

T2: Heater Transformer insulated for 3 kilovolts.

- L1: Horizontal Linearity
 Control, RCA-209R1
 L2: Width Control, RCA-208R1
 L3: Horizontal Deflecting
 Coils of Deflecting Yoke
 RCA-206D1
 R1: 250000 ohms, 1/2 watt
 R2: 100 ohms, 1/2 watt
 R3: 300 $\pm$ 5% ohms, 10 watts
 R4: 10000 ohms approx., 3 watts.
 Value should be sufficient
 to limit grid-No.2 input
 of 6CD6-G to 3 watts.
 R5: 1000 ohms, 1 watt
 R6 R7 R8 R9: 500000 ohms, 1 watt
 R10: 1000 ohms, 1/2 watt
 R11: 200 ohms, 10 watts
 T1: Horizontal-Deflection-Out-
 put and High-Voltage
 Transformer, RCA-218T1

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Fig. 1 - Waveform of Input to Grid-No.1 Circuit of RCA-6CD6-G
Measured Across R_1 in Accompanying Circuit

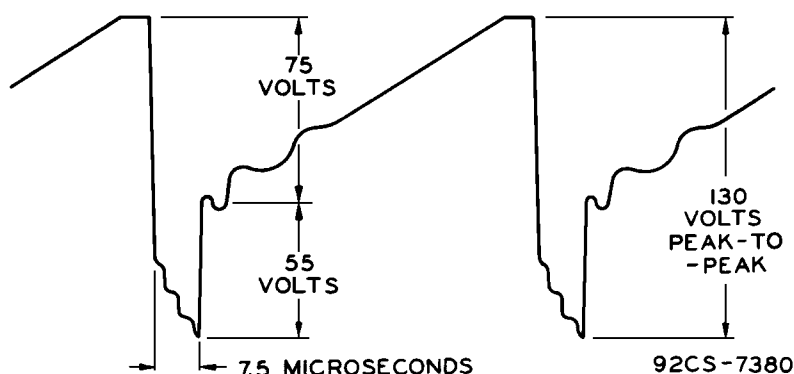


Table I

Available dc output voltage for kinescope when 6CD6-G is operated under conditions shown in tabulated data.

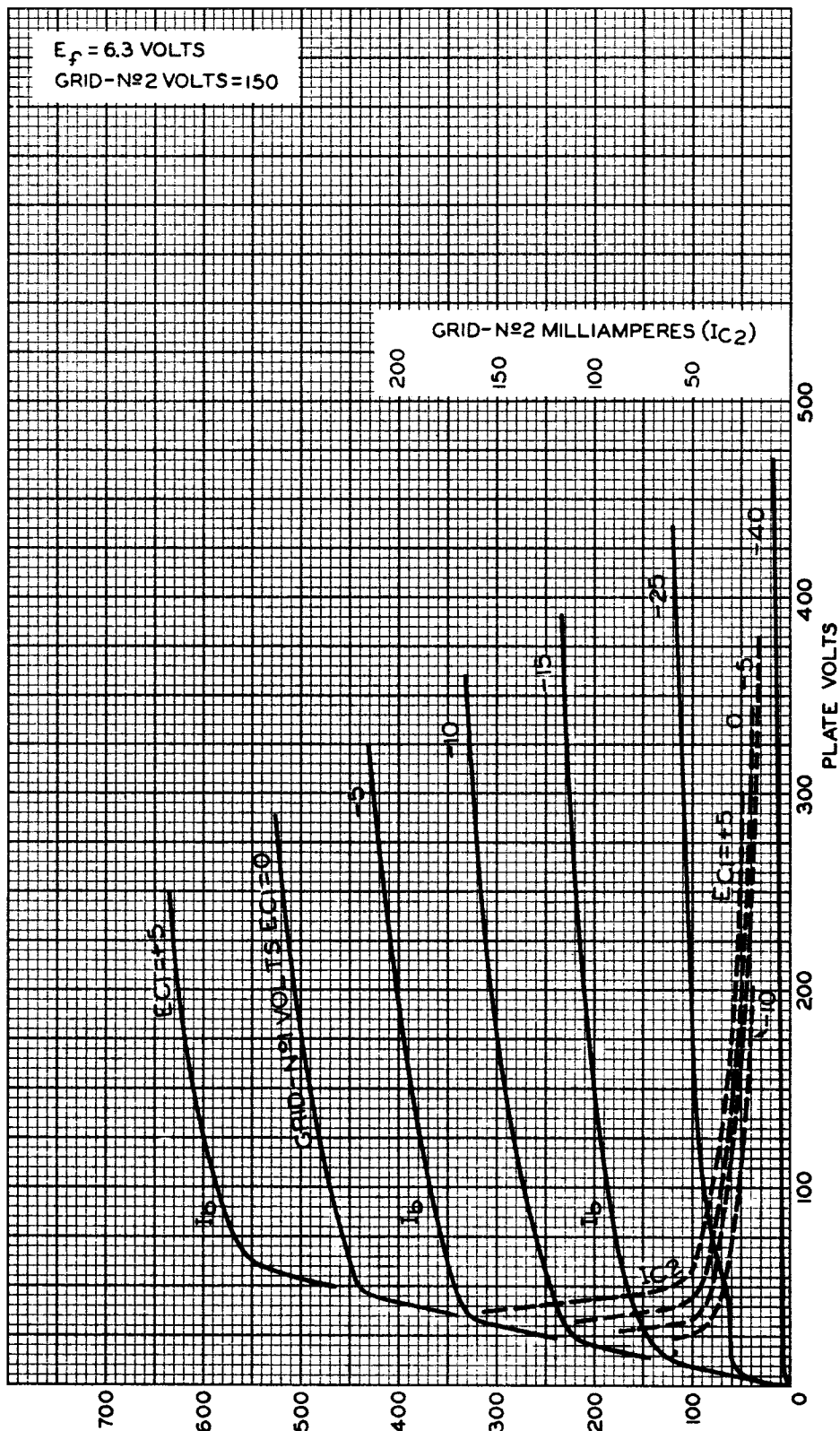
<i>Kinescope Anode Microamperes</i>	<i>DC Output Volts for Kinescope Anode (Approx.)</i>
0	14000
140	12300



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AVERAGE PLATE CHARACTERISTICS



OCT. 26, 1949

PLATE MILLIAMPERES (I_b)
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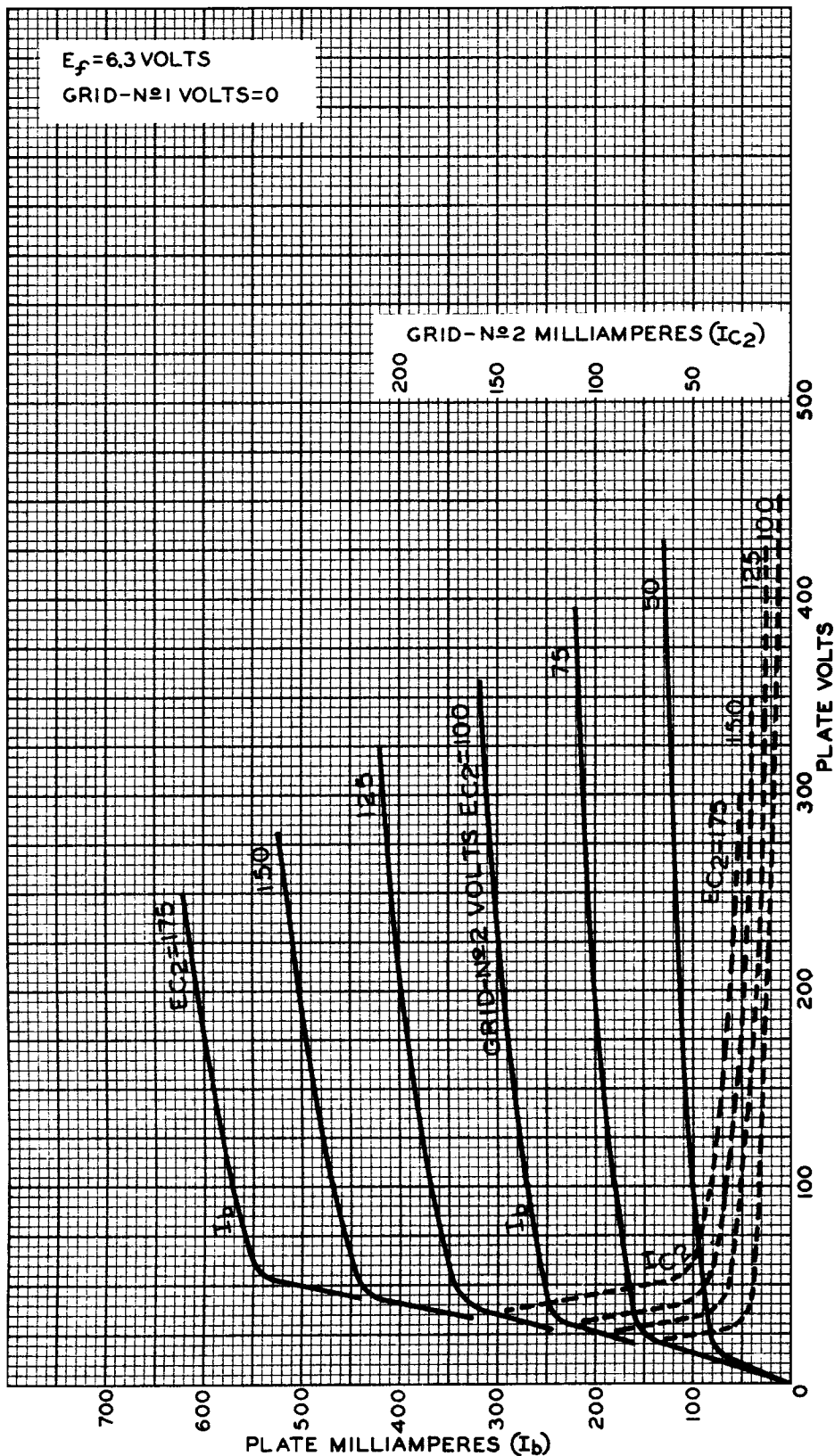
92CM-7393

6CD6-G



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AVERAGE PLATE CHARACTERISTICS



OCT. 25, 1949

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92CM-7392