



3RPI

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OSCILLOGRAPH TUBE

ELECTROSTATIC FOCUS

ELECTROSTATIC DEFLECTION

DATA**General:**

Heater, for Unipotential Cathode:

Voltage. 6.3 ac or dc volts

Current. 0.6 amp

Direct Interelectrode Capacitances (Approx.):

Grid No.1 to All Other Electrodes. 8 . . . μf DJ₁ to DJ₂ 2 . . . μf DJ₃ to DJ₄ 2 . . . μf DJ₁ to All Other Electrodes. 11 . . . μf DJ₂ to All Other Electrodes. 8 . . . μf DJ₃ to All Other Electrodes. 7 . . . μf DJ₄ to All Other Electrodes. 8 . . . μf

Phosphor (For Curves, see front of this Section) No.1

Fluorescence Green

Persistence. Medium

Focusing Method. Electrostatic

Deflection Method. Electrostatic

Overall Length 9-1/8" $\pm$ 1/4"Greatest Diameter of Bulb. 3" $\pm$ 1/16"

Minimum Useful Screen Diameter 2-3/4"

Mounting Position. Any

Base Small-Shell Duodecal 12-Pin

Basing Designation for BOTTOM VIEW 12E

Pin 1-Heater

Pin 2-Grid No.1

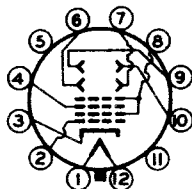
Pin 3-Cathode

Pin 4-Anode No.1

Pin 5-Internal

Connection—
Do Not UsePin 6-Deflecting
Electrode
DJ₃Pin 7-Deflecting
Electrode
DJ₄Pin 8-Anode No.2,
Grid No.2Pin 9-Deflecting
Electrode
DJ₂Pin 10-Deflecting
Electrode
DJ₁Pin 11-Internal
Connection—
Do Not Use

Pin 12-Heater

*DJ₁ and DJ₂ are nearer the screen**DJ₃ and DJ₄ are nearer the base*

With DJ₁ positive with respect to DJ₂, the spot is deflected toward pin 4. With DJ₃ positive with respect to DJ₄, the spot is deflected toward pin 1.

The angle between the trace produced by DJ₃ and DJ₄ and its intersection with the plane through the tube axis and pin No.1 does not exceed 10°.

The angle between DJ₁ - DJ₂ trace and DJ₃ - DJ₄ trace is 90° $\pm$ 3°.



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Maximum Ratings, Design-Center Values:

ANODE-No. 2 * VOLTAGE#	2500 max.	volts
ANODE-No. 1 VOLTAGE	1000 max.	volts
GRID-No. 1 VOLTAGE: #		
Negative bias value.	200 max.	volts
Positive bias value.	0 max.	volts
Positive peak value.	2 max.	volts
PEAK VOLTAGE BETWEEN ANODE No. 2 AND ANY DEFLECTING ELECTRODE.	500 max.	volts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	125 max.	volts
Heater positive with respect to cathode.	125 max.	volts

Equipment Design Ranges:

For any anode-No. 2 voltage (E_{b2}) between 500 and 2500 volts*

Anode-No. 1 Voltage	16.5% to 31% of E_{b2}	volts
Maximum Grid-No. 1 Volt- age for Visual Cutoff.	6.75% of E_{b2}	volts
Anode-No. 1 Cur. for any Operating Condition.	-15 to +10	microamperes
Deflection Factors:		
DJ1 & DJ2.	73 to 99	v dc/in./kv of E_{b2}
DJ3 & DJ4.	52 to 70	v dc/in./kv of E_{b2}
Spot Position.	▲	

Examples of Use of Design Ranges:

<i>For anode-No. 2 voltage of</i>	<i>1000</i>	<i>2000</i>	<i>volts</i>
Anode-No. 1 Voltage	165-310	330-620	volts
Maximum Grid-No. 1 Volt- age for Visual Cutoff	-67.5	-135	volts
Deflection Factors:			
DJ1 & DJ2.	73-99	146-198	volts dc/in.
DJ3 & DJ4.	52-70	104-140	volts dc/in.

Maximum Circuit Values:

Grid-No. 1-Circuit Resistance	1.5 max.	megohms
Resistance in Any Deflecting- Electrode Circuit ^o	5.0 max.	megohms

• Anode No. 2 and grid No. 2 which are connected together within tube, are referred to herein as anode No. 2.

The product of anode-No. 2 voltage and average anode-No. 2 current should be limited to 6 watts.

* Brilliance and definition decrease with decreasing anode-No. 2 voltage. A value as low as 500 volts is recommended only for low-velocity deflection and low ambient light levels.

▲ The center of the undeflected, focused spot will fall within a circle having 7.5-mm' radius concentric with the center of the tube face.

o It is recommended that the deflecting-electrode-circuit resistances be approximately equal.

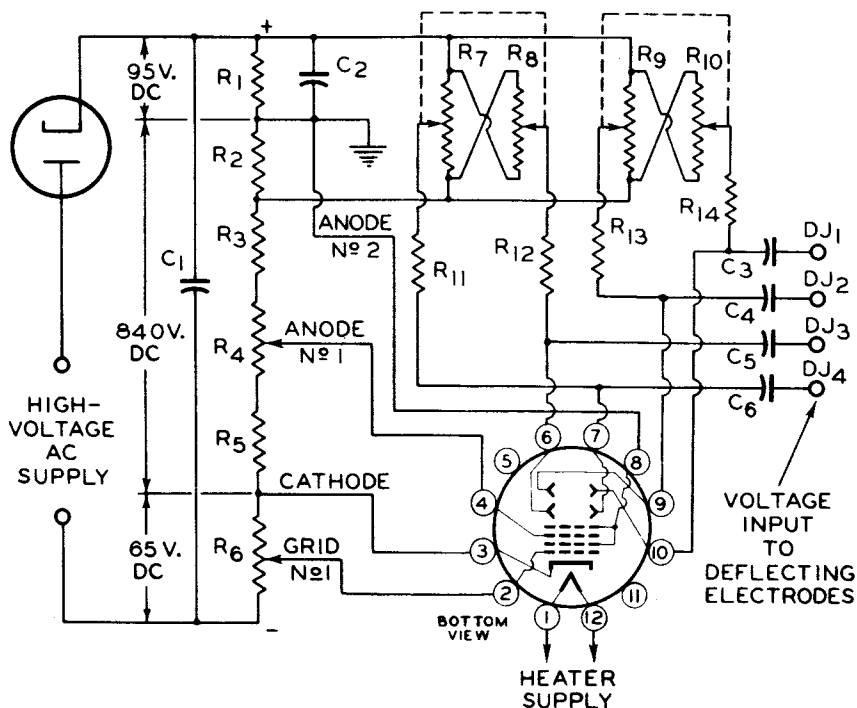


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TYPICAL OSCILLOGRAPH CIRCUIT



92CS-6777

C1: 0.2 μ f
 C2: 1.0 μ f
 C3 C4 C5 C6: 0.05- μ f Blocking
 Capacitors*
 R1 R2: 2.5 Megohms, 0.5 Watt
 R3: 2.5 Megohms, 1 Watt

R4: 1.0-Megohm Potentiometer
 R5: 0.5 Megohm, 0.5 Watt
 R6: 0.35 Megohm, 0.5 Watt
 R7 R8: Dual 5-Megohm Potentiometer
 R9 R10: Dual 5-Megohm Potentiometer
 R11 R12 R13 R14: 2 Megohms, 0.5 watt

* When cathode is grounded, capacitors should have high voltage rating; when anode No. 2 is grounded, they may have low voltage rating. For dc amplifier service, deflecting electrodes should be connected direct to amplifier output. In this service, it is preferable usually to remove deflecting-electrode resistors to minimize loading effect on amplifier. In order to minimize spot defocusing, it is essential that anode No. 2 be returned to a point in the amplifier system which will give the lowest possible potential difference between anode No. 2 and the deflecting electrodes.

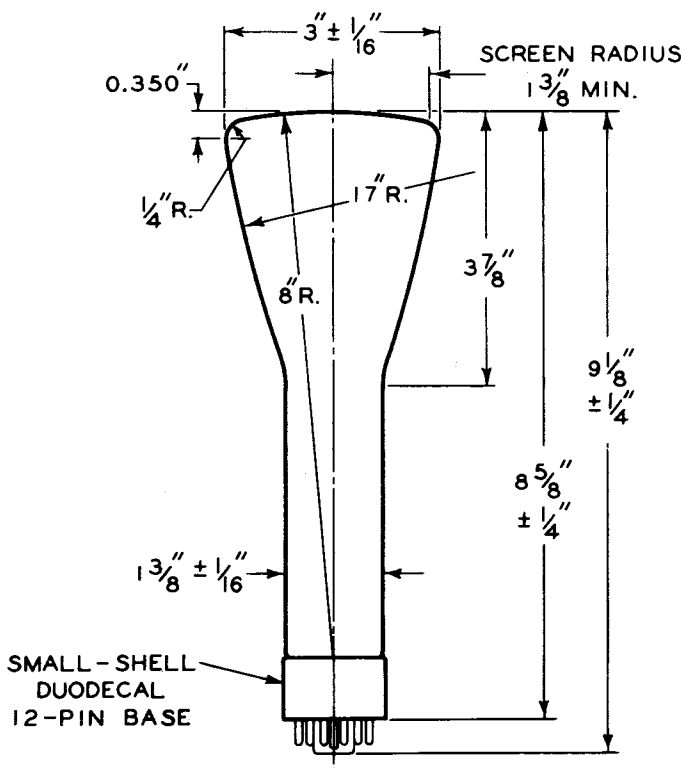
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☐ OF BULB WILL NOT DEVIATE MORE THAN 2° IN ANY DIRECTION FROM PERPENDICULAR ERECTED AT CENTER OF BOTTOM OF BASE.

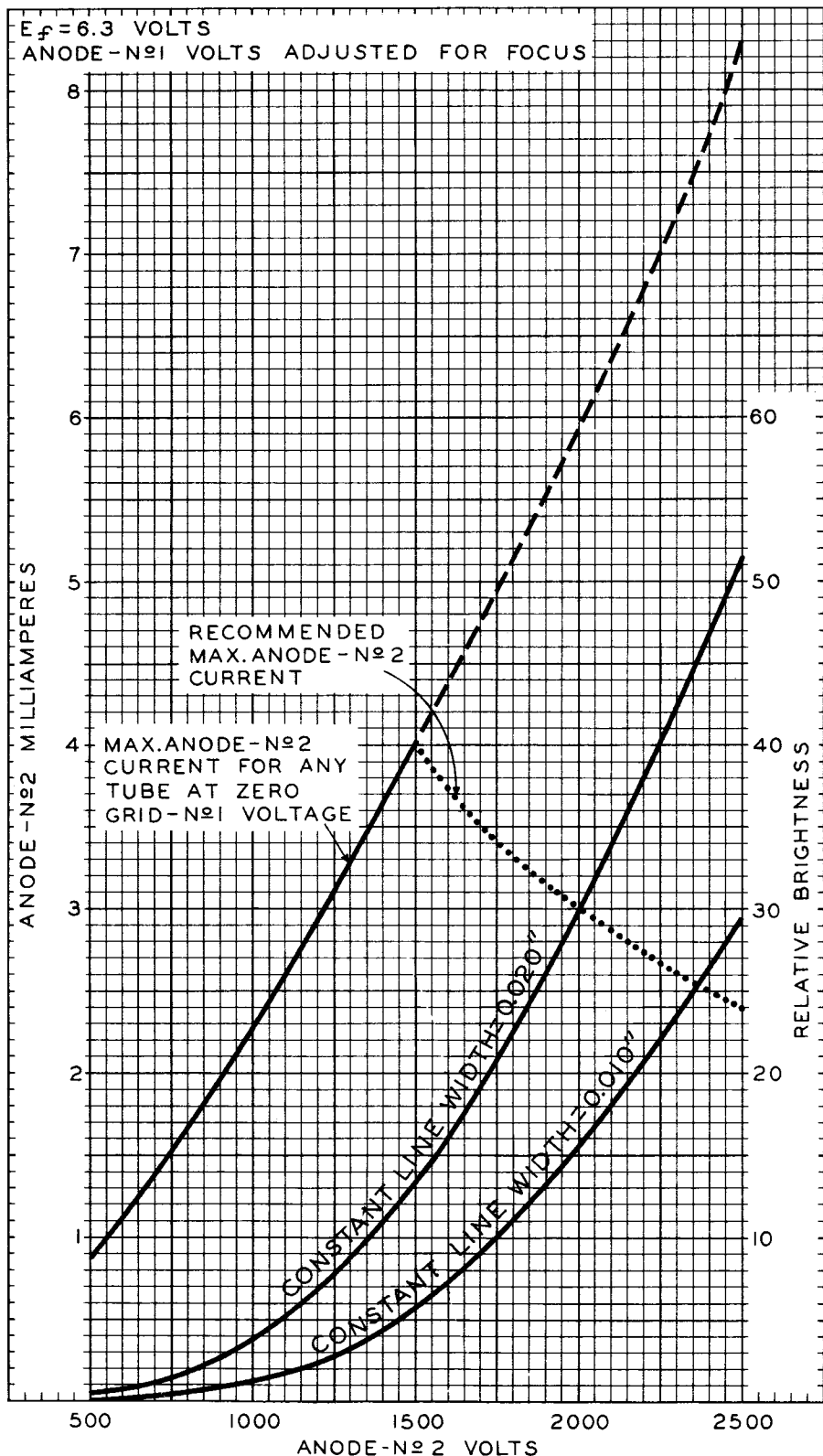
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CHARACTERISTICS

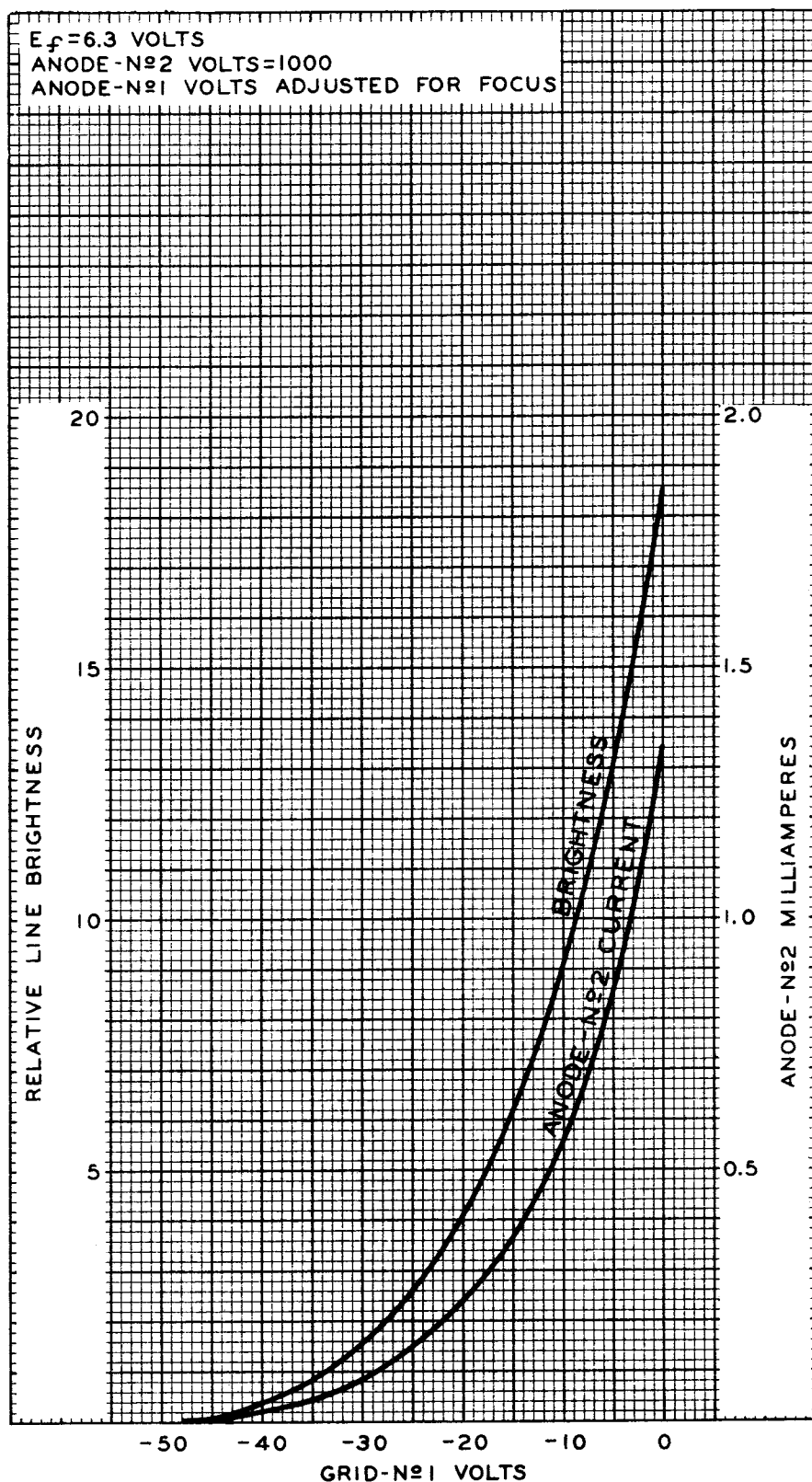


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AVERAGE CHARACTERISTICS



DEC.9,1948

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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