



7BP7-A

## OSCILLOGRAPH TUBE

MAGNETIC FOCUS

MAGNETIC DEFLECTION

7BP7-A

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. . . . . 8.5  $\mu$ fGrid No.2 to All Other Electrodes. . . . . 7  $\mu$ fCathode to All Other Electrodes. . . . . 5  $\mu$ f

Phosphor (For Curves, see front of this Section) . . . . . No.7

Fluorescence . . . . . Blue

Phosphorescence. . . . . Greenish-Yellow

Persistence of Phosphorescence . . . . . Long

Focusing Method. . . . . Magnetic

Deflection Method. . . . . Magnetic

Deflection Angle (Approx.) . . . . . 53°

Overall Length . . . . . 13-1/4"  $\pm$  3/8"Greatest Diameter of Bulb. . . . . 7"  $\pm$  1/8"

Maximum Useful Screen Diameter . . . . . 6"

Mounting Position. . . . . Any

Cap. . . . . Recessed Small Ball

Base . . . . . Long Medium-Shell Octal 8-Pin

**BOTTOM VIEW**Pin 1 - No  
Connection

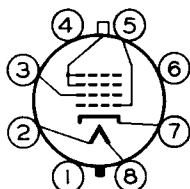
Pin 2 - Heater

Pin 3 - Grid No.2

Pin 4 - No

Connection

Pin 5 - Grid No.1



Pin 6 - No

Connection

Pin 7 - Cathode

Pin 8 - Heater

Cap - Anode,  
Grid No.3**Maximum Ratings, Design-Center Values:**ANODE<sup>•</sup> VOLTAGE . . . . . 8000 max. volts

GRID-No.2 VOLTAGE. . . . . 700 max. volts

GRID-No.1 VOLTAGE:

Negative bias value. . . . . 125 max. volts

Positive bias value<sup>□</sup>. . . . . 0 max. volts

Positive peak value. . . . . 2 max. volts

PEAK GRID-No.1 DRIVE FROM CUTOFF . . . . . 65 max. volts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode. 125 max. volts

Heater positive with respect to cathode. 125 max. volts

**Typical Operation:**

Anode Voltage\* . . . . . 4000 7000 volts

Grid-No.2 Voltage. . . . . 250 250 volts

Grid-No.1 Voltage Range<sup>○</sup> . . -25 to -70 -25 to -70 voltsFocusing-Coil Current<sup>▲</sup>. . . 75 to 102 99 to 135 ma

Spot Position. . . . . # -

•, □, \*, ○, ▲, #: See next page.

JUNE 15, 1948

TUBE DEPARTMENT

TENTATIVE DATA

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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## OSCILLOGRAPH TUBE

**Maximum Circuit Values:**

Grid-No.1-Circuit Resistance . . . . . 1.5 max. megohms

**Minimum Circuit Values:**

When the output capacitor of the power supply is capable of storing more than 250 microcoulombs, and when the inherent regulation of the power supply permits the instantaneous short-circuit current to exceed 1 ampere, the effective resistance in circuit between indicated electrode and the output capacitor should be as follows:

Grid-No.1-Circuit Resistance . . . . . 150 min. ohms

Grid-No.2-Circuit Resistance . . . . . 820 min. ohms

Anode-Circuit Resistance . . . . . 9100 min. ohms

The resistors used should be capable of withstanding the voltages involved.

**Components:**

RCA Focusing Coil. . . . . RCA Type No. 202D1

● Anode and grid No.3, which are connected together within tube, are referred to herein as anode.

□ At or near this rating, the effective resistance of the anode supply should be adequate to limit the anode input power to 6 watts.

\* Brilliance and definition decrease with decreasing anode voltage. In general, the anode voltage should not be less than 4000 volts.

○ For visual extinction of undeflected focused spot.

▲ For JETEC Focusing Coil No.106, or equivalent, with center line of air gap approximately 2-3/4" from reference line (see Outline Drawing), and total anode current of 200 microamperes.

# The center of the undeflected, unfocused spot will fall within a circle having 12 mm radius concentric with the center of the tube face.

JUNE 15, 1948

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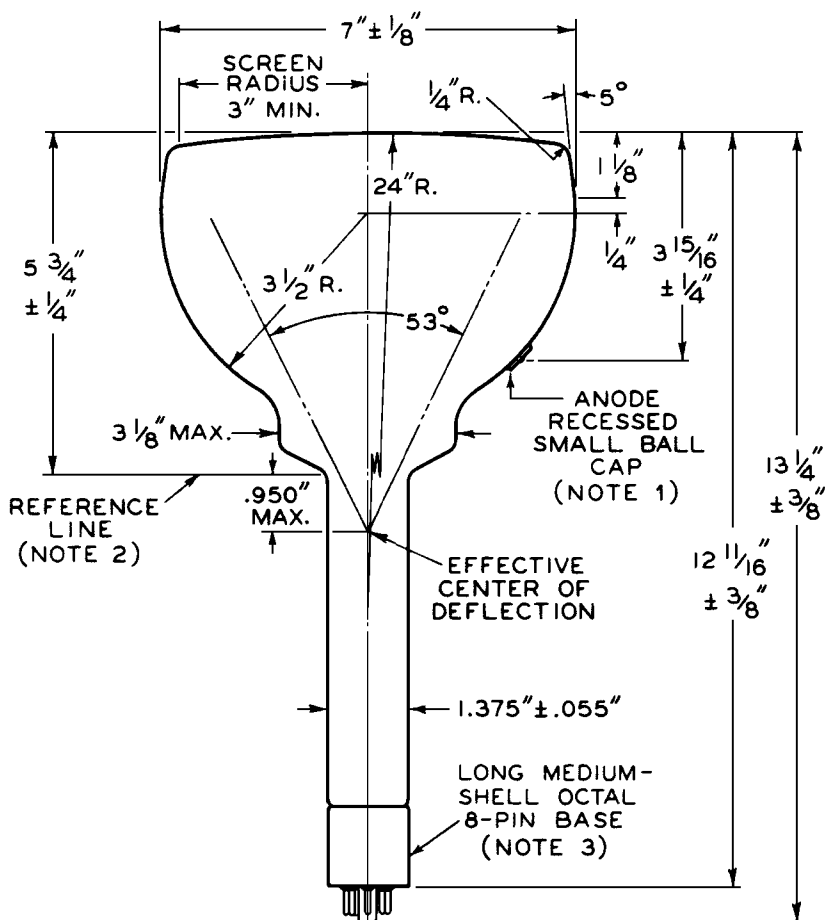
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**NOTE 1:** THE PLANE THROUGH THE TUBE AXIS AND PIN No.5 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ANODE TERMINAL BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF  $10^\circ$ . ANODE TERMINAL IS ON SAME SIDE OF TUBE AS PIN No.5.

**NOTE 2:** REFERENCE LINE IS DETERMINED BY POSITION WHERE GAUGE  $1.430" + .003" - .000"$  I.D. AND  $2"$  LONG WILL REST ON BULB CONE.

**NOTE 3:**  $\phi$  OF BULB WILL NOT DEVIATE MORE THAN  $2^\circ$  IN ANY DIRECTION FROM THE PERPENDICULAR ERECTED AT THE CENTER OF THE BOTTOM OF THE BASE.

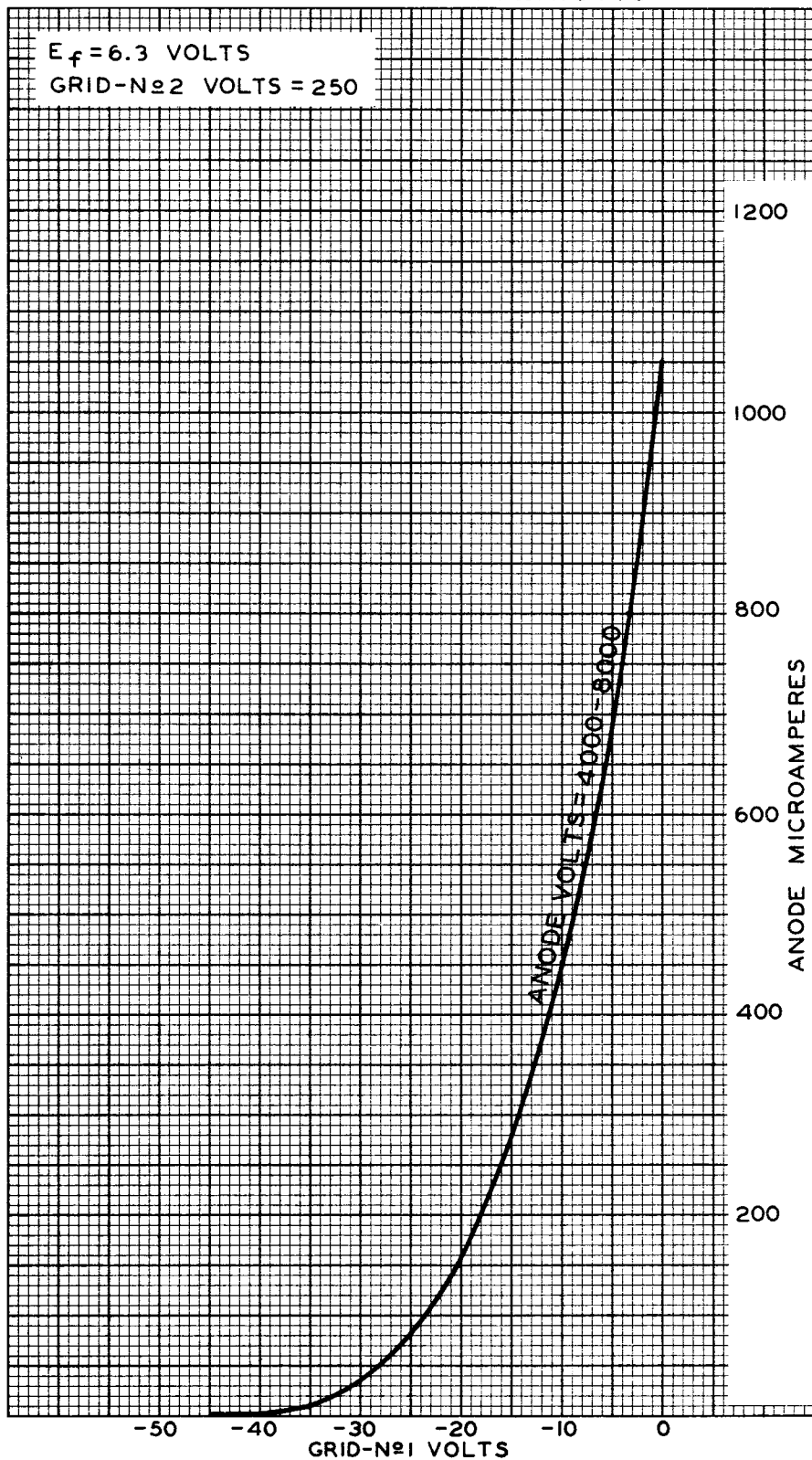
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# AVERAGE CHARACTERISTIC



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