



5ZP16

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FLYING-SPOT CATHODE-RAY TUBE

ELECTROSTATIC FOCUS

MAGNETIC DEFLECTION

*For use in Flying-Spot Video-Signal Generators***DATA****General:**

Heater, for Unipotential Cathode:

Voltage. 6.3 ac or dc volts

Current. 0.6 amp

Direct Interelectrode Capacitances:

Grid No.1 to All Other Electrodes. 8 μf Cathode to All Other Electrodes. 5 μf External Conductive Coating to Anode { 500 max. . . μf
100 min. . . μf

Phosphor (For Curves, see front of this Section) . . . No.16

Fluorescence Violet and Near-Ultraviolet

Phosphorescence. Violet and Near-Ultraviolet

Persistence. Extremely Short

Focusing Method. Electrostatic

Deflection Method. Magnetic

Deflection Angle (Approx.) 40° Overall Length $14\text{--}3\frac{7}{8}" \pm \frac{3}{8}"$ Greatest Diameter of Bulb. $5" \pm \frac{1}{8}"$ Minimum Useful Screen Diameter $4\text{--}1\frac{1}{4}"$

Mounting Position. Any

Cap. Recessed Small Cavity (JETEC No.J1-21)

Base Small-Shell Duodecal 7-Pin (JETEC No.B7-51)

BOTTOM VIEW

Pin 1-Heater

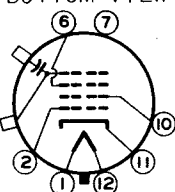
Pin 2-Grid No.1

Pin 6-Grid No.3

Pin 7-Internal Con.--

Do Not Use

Pin 10-Grid No.2



Pin 11-Cathode

Pin 12-Heater

Cap - Anode

C-External
Conductive
Coating

SOCKET CONTACTS CORRESPONDING TO VACANT
PIN POSITIONS 3, 4, 5, 8, & 9 SHOULD
BE REMOVED

Maximum Ratings, Design-Center Values:

ANODE VOLTAGE. 27000 max. volts

GRID-No.3 VOLTAGE. 7000 max. volts

GRID-No.2 VOLTAGE. 350 max. volts

GRID-No.1 VOLTAGE:

Negative bias value. 150 max. volts

Positive bias value. 0 max. volts

Positive peak value. 2 max. volts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode:

During equipment warm-up period not

exceeding 15 seconds. 410 max. volts

After equipment warm-up period 150 max. volts

Heater positive with respect to cathode. 150 max. volts

MARCH 1, 1951

TUBE DEPARTMENT

TENTATIVE DATA

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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Typical Operation:

Anode Voltage*	20000	27000	volts
Grid-No.3 Voltage Range for Anode Current as Indicated	4700 $\pm$ 12%	6300 $\pm$ 12%	volts
Grid-No.2 Voltage**	200	200	volts
Grid-No.1 Voltage for Visual Extinction of Undelected Focused Spot ^o	-70	-70	volts
Anode Current	25	15	μ amp
Max. Grid-No.3 Current for Anode Current as Indicated	75	25	μ amp
Grid-No.2 Current Range	-15 to +15	-15 to +15	μ amp

Maximum Circuit Values:

Grid-No.1-Circuit Resistance	1.5 max. megohms
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* Brilliance and definition decrease with decreasing anode voltage. In general, the anode voltage should not be less than 20000 volts.

** Subject to variation of $\pm$ 40% when grid-No.1 voltage cutoff is desired at the average cutoff value of -70 volts.

^o Subject to variation of $\pm$ 40% when grid-No.2 voltage is maintained at 200 volts.

OPERATING NOTES

X-Ray Warning. X-ray radiation is produced at the face of the 5ZP16 when it is operated at its normal anode voltage. These rays can constitute a health hazard unless the tube is adequately shielded for x-ray radiation. Although relatively simple shielding should prove adequate, make sure that it provides the required protection against personal injury.

Resolution of better than 1000 lines at the center of the reproduced picture can be produced by the 5ZP16 when it is operated with 27000 volts on the anode. At lower anode voltages, the resolution capability decreases. To obtain high resolution in the horizontal direction, it is necessary to use a video amplifier having a bandwidth of about 20 megacycles.

The **ultraviolet output** of the 5ZP16 is a linear function of the anode current. For any particular value of anode current, the ultraviolet output is approximately 50 per cent higher when the 5ZP16 is operated with 27000 volts on the anode than when operated with 20000 volts.

MARCH 1, 1951

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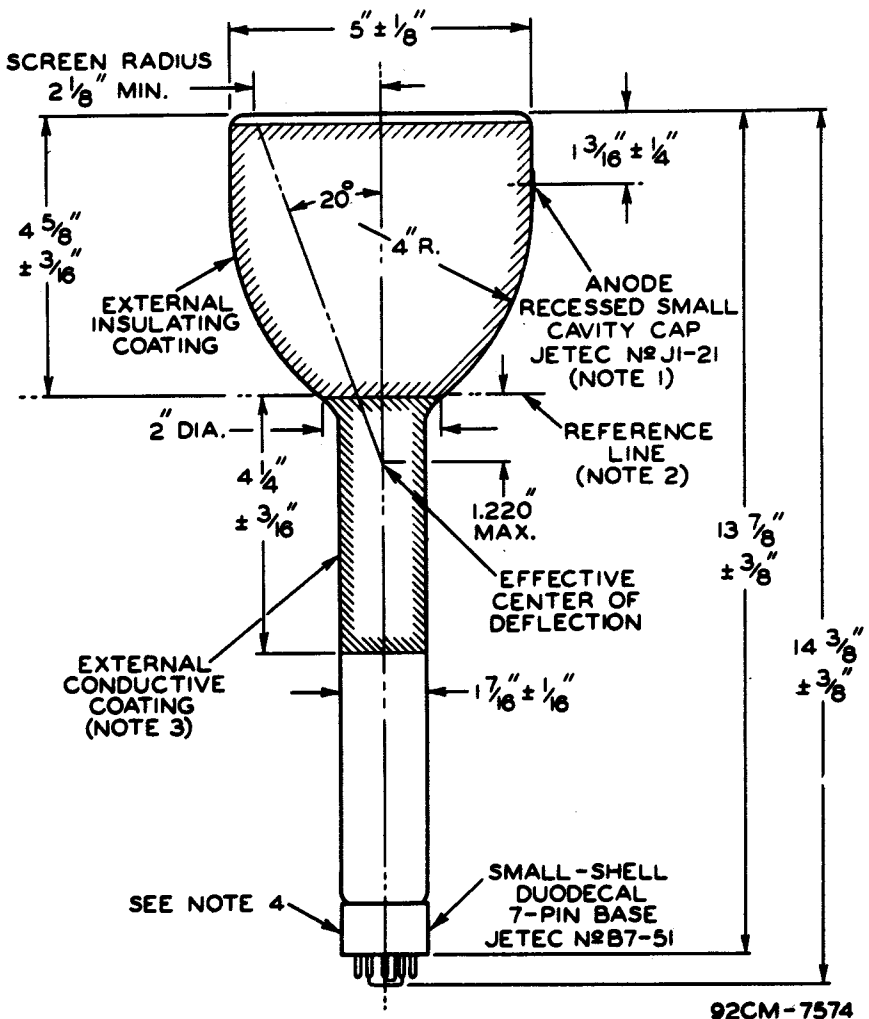
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NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND VACANT PIN POSITION No.3 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ANODE TERMINAL BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF $\pm 10^\circ$. ANODE TERMINAL IS ON SAME SIDE AS VACANT PIN POSITION No.3.

NOTE 2: WITH TUBE NECK INSERTED THROUGH FLARED END OF REFERENCE-LINE GAUGE JETEC No.110 (SHOWN AT FRONT OF THIS SECTION) AND WITH TUBE SEATED IN GAUGE, THE REFERENCE LINE IS DETERMINED BY INTERSECTION OF PLANE CC' OF THE GAUGE WITH THE GLASS FUNNEL.

NOTE 3: EXTERNAL CONDUCTIVE COATING MUST BE GROUND.

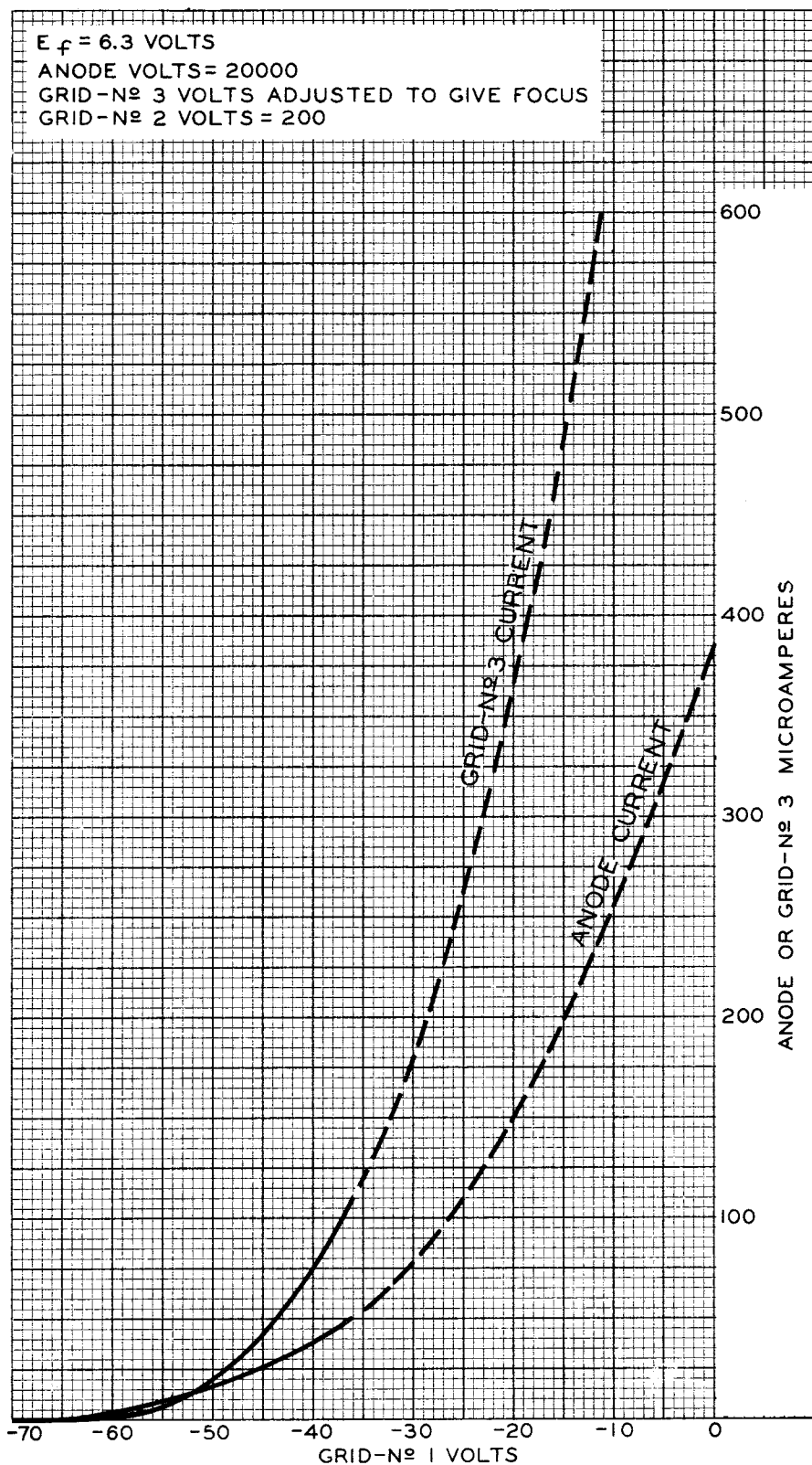
NOTE 4: $\angle$ OF BULB WILL NOT DEVIATE MORE THAN 2° IN ANY DIRECTION FROM THE PERPENDICULAR ERECTED AT THE CENTER OF THE BOTTOM OF THE BASE.

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AVERAGE CHARACTERISTICS



DEC. 26, 1950

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