7GP4

KINESCOPE

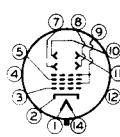
ELECTROSTATIC FOCUS—ELECTROSTATIC DEFLECTION

General:

Heater, for Unipotential Cathode:		
Voltage	6.3 ± 10%	ac or dc volts
Current	0.6	amp
Direct Interelectrode Capacitances (Approx.):		
Grid No.1 to All Other Electrodes	8.5	μμf
Cathode to All Other Electrodes	9.5	μμf
DJ_1 to DJ_2	3.5	μμf
DJ_3 to DJ_4	2.0	μμf
DJ_1 to All Other Electrodes	11.0	μμf
DJ_2 to All Other Electrodes	11.0	μμf
DJ_3 to All Other Electrodes	8.0	μμf
DJ_4 to All Other Electrodes	8.0	μμf
Phosphor (For Curves, see front of this Section)		No.4
Fluorescence		White
Persistence		Medium
Focusing Method		Electrostatic
Deflection Method		Electrostatic
Overall Length		14-1/2" ± 3/8"
Greatest Diameter of Bulb		7" ± 1/8"
Minimum Useful Screen Diameter		6"
Raster Size		4" x 5-1/2"
Mounting Position		Any
Base		Medium Shell Diheptal 12-Pin

BOTTOM VIEW

Pin 1 – Heater
Pin 2 – Cathode
Pin 3 – Grid No.1
Pin 4 – Internal Con. – Do Not Use
Pin 5 – Anode No.1
Pin 7 – Deflecting Electrode DJ_3
Pin 8 – Deflecting Electrode DJ_4



Pin 9 – Anode No.2, Grid No.2
Pin 10 – Deflecting Electrode DJ_2
Pin 11 – Deflecting Electrode DJ_1
Pin 12 – No Connection
Pin 14 – Heater

DJ_1 and DJ_2 are nearer the screen
DJ_3 and DJ_4 are nearer the base

With DJ_1 positive with respect to DJ_2, the spot is deflected toward pin 5. With DJ_3 positive with respect to DJ_4, the spot is deflected toward pin 2.

The plane through the tube axis and pin 5 may vary from the trace produced by DJ_1 and DJ_2 by an angular tolerance (measured about the tube axis) of 10°.

The angle between the trace produced by DJ_1 and DJ_2 and the trace produced by DJ_3 and DJ_4 is 90° ± 3°.

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Maximum Ratings, *Design-Center Values*:

ANODE-No.2 & GRID-No.2 VOLTAGE.	4000 max. volts
ANODE-No.1 VOLTAGE.	1500 max. volts
GRID-No.1 (CONTROL ELECTRODE) VOLTAGE:	
Negative bias value	200 max. volts
Positive bias 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 (Eb_2) between 3000 and 4000 volts*

Anode-No.1 Voltage for Focus□	27% to 40% of E_{b_2} . . .	volts
Grid-No.1 Voltage for Visual Cutoff	1.2% to 2.8% of E_{b_2} . . .	volts
Anode-No.1 Current for Any Operating Condition	−15 to +10 .	microamp
Deflection Factors:		
DJ_1 & DJ_2	31 to 41	v dc/in./kv of E_{b_2}
DJ_3 & DJ_4●	25 to 34	v dc/in./kv of E_{b_2}

Examples of Use of Design Ranges:

For anode-No.2 voltage of 3000 volts

Anode-No.1 Voltage.	810 to 1200 . . .	volts
Grid-No.1 Voltage for Visual Cutoff	−36 to −84 . . .	volts
Deflection Factors:		
DJ_1 & DJ_2	93 to 123	volts dc/in.
DJ_3 & DJ_4	75 to 102	volts dc/in.

Maximum Circuit Values:

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

* Brilliance and definition decrease with decreasing anode-No.2 voltage.

□ With the combined grid-No.1 bias voltage and video-signal voltage adjusted for a highlight brightness of 7 foot-lamberts on a 4" x 5-1/2" picture area.

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

● The 7GP4 is designed to be used in television circuits with horizontal deflection applied to deflecting electrodes DJ_3 and DJ_4, and should be so used to obtain maximum picture width. When the 7GP4 is operated in this way, the deflecting voltage required to produce the vertical height is approximately the same as that required to produce the horizontal width of a television picture of standard proportions.

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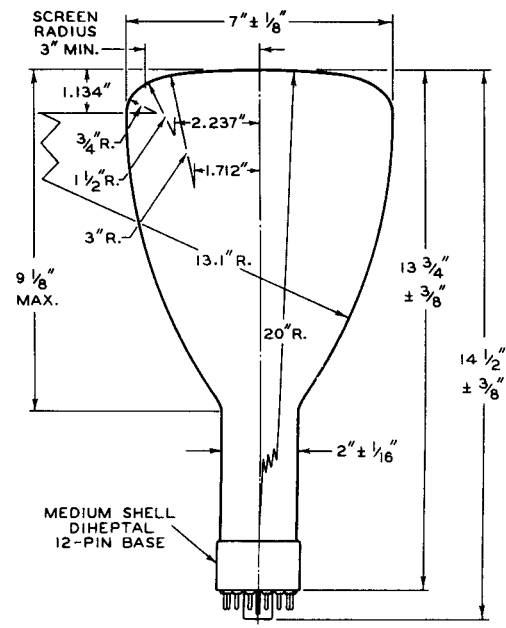


℄ OF BULB WILL NOT DEVIATE MORE THAN 2° IN ANY DIRECTION FROM THE PERPENDICULAR ERECTED AT THE CENTER OF BOTTOM OF THE BASE.

THE PLANE THROUGH THE TUBE AXIS AND PIN 5 MAY VARY FROM THE TRACE PRODUCED BY DJ1 AND DJ2 BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF 10°. ANGLE BETWEEN DJ1 – DJ2 TRACE AND DJ3 – DJ4 TRACE IS 90° ± 3°.

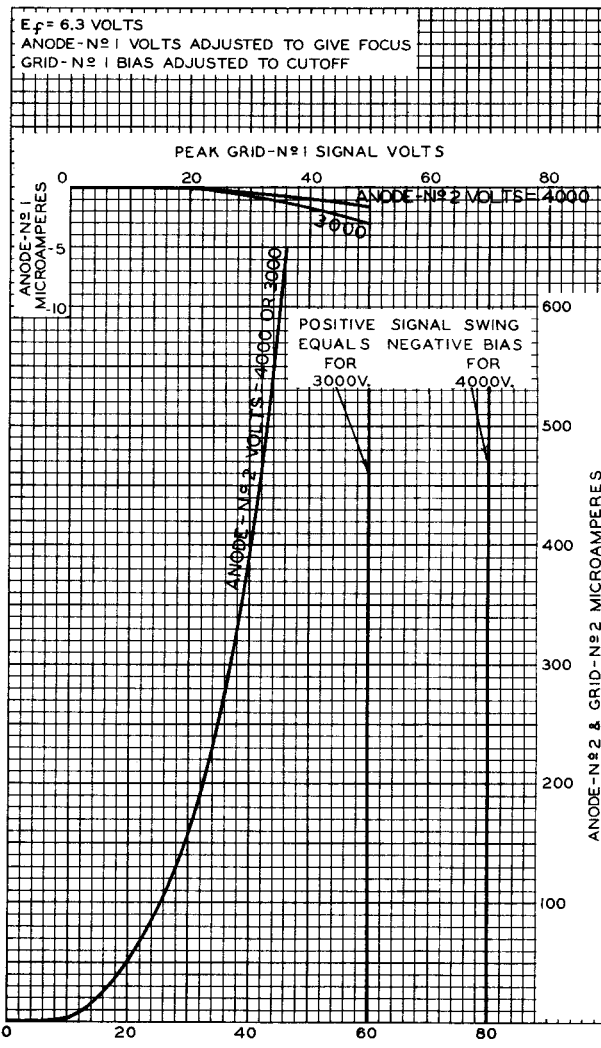
DJ1 AND DJ2 ARE NEARER THE SCREEN; DJ3 AND DJ4 ARE NEARER THE BASE. WITH DJ1 POSITIVE WITH RESPECT TO DJ2, THE SPOT WILL BE DEFLECTED TOWARD PIN 5; LIKEWISE, WITH DJ3 POSITIVE WITH RESPECT TO DJ4, THE SPOT WILL BE DEFLECTED TOWARD PIN 2.

92CM-6667

RCA

7GP4

OPERATION CHARACTERISTICS



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