RCA

3MP1

OSCILLOGRAPH TUBE

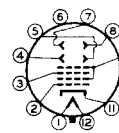
ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

DATA

General:

Heater, for Unipotential Cathode:		
Voltage	6.3	ac or dc volts
Current	0.6	amp
Direct Interelectrode Capacitances (Approx.):		
Cathode to All Other Electrodes	2.2	
Grid No.1 to All Other Electrodes	10.3	μμf
DJ_1 to DJ_2	1.3	μμf
DJ_3 to DJ_4	1.2	μμf
DJ_1 to All Other Electrodes Except DJ_2	4.4	μμf
DJ_2 to All Other Electrodes Except DJ_1	5.6	μμf
DJ_3 to All Other Electrodes Except DJ_4	5.0	μμf
DJ_4 to All Other Electrodes Except DJ_3	4.5	μμf
Phosphor (For Curves, see front of this Section)		No.1
Fluorescence		Green
Persistence		Medium
Focusing Method		Electrostatic
Deflection Method		Electrostatic
Overall Length		8" ± 1/4"
Greatest Diameter of Bulb		3" ± 1/16"
Minimum Useful Screen Diameter		2-3/4"
Mounting Position		Any
Base		Small-Shell Duodecal 12-Pin
Basing Designation for Bottom View		12F

Pin 1 – Heater
Pin 2 – Grid No.1
Pin 3 – Anode No.1
Pin 4 – Deflecting Electrode DJ_3
Pin 5 – Deflecting Electrode DJ_4
Pin 6 – No Connection
Pin 7 – Deflecting Electrode DJ_1
Pin 8 – Deflecting Electrode DJ_2
Pin 9 – Anode No.2, Grid No.2
Pin 10 – No Connection
Pin 11 – Cathode
Pin 12 – 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 4. With DJ_3 positive with respect to DJ_4, the spot is deflected toward pin 1.

The plane through the tube axis and pin 4 may vary from the trace produced by DJ_1 and DJ_2 by an angular tolerance (measured about the tube axis) of 10°.

Maximum Ratings, *Design-Center Values*:

ANODE-No.2• VOLTAGE# . . . . . 2500 max. volts

• 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.

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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 (Eb_2) between recommended minimum and 2500 volts*

Anode-No.1 Voltage	20% to 35% of Eb_2	volts
Max. Grid-No.1 Voltage for Visual Cutoff	6.3% of Eb_2	volts
Anode-No.1 Cur. for any Operating Condition.	-15 to +10	microamperes
Deflection Factors:		
DJ_1 & DJ_2	115 to 145	v dc/in./kv of Eb_2
DJ_3 & DJ_4	110 to 140	v dc/in./kv of Eb_2

Examples of Use of Design Ranges:

For anode-No.2 voltage of	*1000*	*2000*	*volts*
Anode-No.1 Voltage	200-350	400-700	volts
Max. Grid-No.1 Voltage for Visual Cutoff	-63	-126	volts
Deflection Factors:			
DJ_1 & DJ_2	115-145	230-290	volts dc/in.
DJ_3 & DJ_4	110-140	220-280	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. Recommended minimum for the 3MP1 in general service is 1000 volts but a value as low as 500 volts may be used under conditions of low-velocity deflection and low ambient-light levels.

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

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