CATHODE RAY TUBE

23 INCH, RECTANGULAR, GLASS

FACEPLATE—SPHERICAL GRAY

FOCUS—ELECTROSTATIC

NON ION TRAP GUN

DEFLECTION—MAGNETIC

ALUMINIZED SCREEN

110-DEGREE DEFLECTION ANGLE

EXTERNAL CONDUCTIVE COATING

BANDED TYPE IMPLOSION PROTECTION

---------------------------------------------DESCRIPTION AND RATING---------------------------------------------

The 23FVP4 is a 23-inch electrostatic-focus and magnetic-deflection glass light weight picture tube equipped with banded tube type integral implosion protection. Outstanding features include a short overall length, a small neck diameter and a non ion-trap gun. The fluorescent screen is aluminized to increase light output and reduce undesirable screen charging. An external conductive coating is provided to serve as a filter capacitor when grounded.

ELECTRICAL DATA

Focusing Method . . . . . . . . . . . . Electrostatic
Deflection Angle, Approximate
   Horizontal . . . . . . . . . . . . 99 Degrees
   Vertical . . . . . . . . . . . . 82 Degrees
   Diagonal . . . . . . . . . . . . 110 Degrees
Direct Interelectrode Capacitance
   Cathode to all other electrodes, approx. . . . 5 uuf
   Grid #1 to all other electrodes, approx. . . . 6 uuf
   External Conductive Coating to Anode . . . . 2500 max. uuf
   (including implosion protection hardware) . . 2000 min. uuf
Heater Current at 6.3 volts . . . . . . . . . . 450 ± 22 ma.
Heater Warm-up time . . . . . . . . . . . . . . 11 sec.

OPTICAL DATA

Phosphor Number . . . . . . . . . . . . P4 Aluminized
Light transmittance at center, approx. . . . . . . . . . . . 42 percent

CATHODE RAY TUBE DEPARTMENT

GENERAL ELECTRIC

Syracuse, N.Y.

from JEDEC release #4804, Sept. 21, 1964
MECHANICAL DATA

Overall Length ........................................ 14-7/8 ± 5/16 inches
Greatest Dimensions of Tube
   Diagonal ........................................ 23-1/2 ± 1/8 inches
   Width ........................................... 20-5/8 ± 1/8 inches
   Height ......................................... 16-5/8 ± 1/8 inches
Minimum Useful Screen Dimensions (Projected)
   Diagonal ........................................ 22-5/16 inches
   Horizontal Axis ............................... 19-1/4 inches
   Vertical Axis ................................ 15-1/8 inches
   Area ............................................ 282 square inches
Neck Length .......................................... 5-1/8 ± 1/8 inches
Bulb ................................................ J187K1
Bulb Contact ....................................... JEDEC No. J1-21
Base ................................................ JEDEC No. B7-208
Basing ................................................ 8HR
Bulb Contact Alignment
   Anode Contact Aligns with base pin No. 4 ± 30 degrees

RATINGS (Design Maximum System)

Unless otherwise specified, voltage values are positive and measured with respect to cathode.

Maximum Anode Voltage .............................. 22,000 volts
Minimum Anode Voltage .............................. 15,000 volts
Maximum Grid #4 (Focusing Electrode) Voltage .... -500 to +1000 volts
Minimum Grid #2 Voltage ............................ 100 volts
Maximum Grid #2 Voltage ............................ 550 volts
Grid #1 Voltage
   Maximum Negative Value ......................... 140 volts DC
   Maximum Negative Peak Value .................. 200 volts
   Maximum Positive Value ....................... 0 volts DC
   Maximum Positive Peak Value .................. 2 volts
Maximum Heater Voltage ........................... 6.9 volts
Minimum Heater Voltage ........................... 5.7 volts
Maximum Heater-Cathode Voltage
Heater negative with respect to cathode
  During warm-up period not to exceed 15 sec. . . . . 410 volts
  After equipment warm-up period . . . . . . . . . . . 300 volts
Heater positive with respect to cathode. . . . . . . . 180 volts

TYPICAL OPERATING CONDITIONS (Cathode Drive Service)

Anode Voltage. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 18,000 volts DC
Grid #4 Voltage (Focusing Electrode-Notes 2 & 3) . . . 250 volts DC
Grid #2 Voltage. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 300 volts DC
Cathode to Grid #1 Voltage (Note 1). . . . . . . . . . . . . . . . . . . 36 to 54 volts DC

MAXIMUM CIRCUIT VALUES

Maximum Grid #1 Circuit Resistance . . . . . . . . . . . . . . . . . . . 1.5 max. megohm
Grid #2 Circuit Resistance . . . . . . . . . . . . . . . . . . . . . . . . . 0.1 min. megohm
Focusing Electrode Circuit Resistance . . . . . . . . . . . . . . . . . . 0.1 min. megohm

Protective resistance in Grid #2 and focusing electrical circuits is advisable to prevent damage to tube. If applicable, one resistor common to both circuits may be used.

NOTES:

1. Visual extinction of focused raster.

2. With the combined Grid #1 bias voltage and video-signal voltage adjusted to give an anode current of 150 μA on a 19-1/4" x 15-1/8" pattern from RCA 2F21 monoscope or equivalent.

3. Individual tubes will have satisfactory focus at some value between 0 and 500 volts.
OUTLINE NOTES

1. The reference line is determined by the intersection of the plane C-C of gage (EIA No. 126) with the glass funnel.

2. Deflection angle on the diagonal is 110°.

3. Anode terminal aligns with pin no. 4 ± 30 degrees.

4. Use a non-rigidly mounted socket with flexible leads. Bottom circumference of base wafer will fall within 1-3/4 inch diameter circle concentric with the bulb axis.

BASING DIAGRAM

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Syracuse, N. Y.