**19CJP4**

Television Picture Tube

**PHILCO CORPORATION - LANSDALE DIVISION**

**CATHODE RAY TUBE**

**DATA SHEET**

Tentative

**Description**

The 19CJP4 is a directly viewed, rectangular glass picture tube having an aluminized screen. Other features include a relatively flat envelope, compound radius faceplate, a special internal contouring in the deflection yoke region to obtain 114° deflection with 110° components.

A short improved electron gun requiring no ion trap magnet and which also improves edge focus quality is also incorporated as well as external conductive coating and a new short integral glass button base having straight thru leads and an indexing lug.

**Electrical Data**

- Focusing Method .................. Electrostatic
- Deflecting Method .................. Magnetic
- Deflection Angle, approximate
  - Horizontal .................. 102 Degrees
  - Vertical .................. 85 Degrees
  - Diagonal .................. 114 Degrees
- Direct Interelectrode Capacitance, approximate
  - Cathode to All .................. 4 uuf
  - Grid #1 to All .................. 5 uuf
  - External Coating Capacitance .................. 1300 Min. uuf
  - .................................. 1700 Max. uuf
- Heater Voltage .................. 6.3 Volts
- Heater Current at 6.3 Volts .................. 600±30 ma.
- Heater Warm-up Time (Note 1) .................. 11 Seconds

**Optical Data**

- Phosphor Number .................. Aluminized P4
- Fluorescent Color .................. White
- Persistence ............................ Medium Short
- Faceplate
  - Light Transmission at Center, approximate ........ 78 Percent

from JEDEC release #4455, Oct, 14, 1963
Mechanical Data

Overall Length .......................... 11 5/16 ± 1/4 - 3/16 Inches
Neck Length .............................. 4 1/8 ± 1/16 - 1/8 Inches

Greatest Dimensions of Bulb

Diagonal ................................. 18 5/8 ± 1/8 Inches
Width .................................. 16 13/32 ± 1/8 Inches
Height .................................. 13 11/32 ± 1/8 Inches

Minimum Useful Screen Dimensions .... 172 Sq. Inches
(maximum assured dimensions)

Diagonal ................................ 17 9/16 Inches
Width .................................. 15 1/8 Inches
Height .................................. 12 Inches

Bulb .................................... J149A2
Base .................................... B7-208
Basing .................................. 8HR
Anode Contact .......................... J1-21

Anode Contact Aligns with Pin #4 ± 30°

GRID DRIVE SERVICE

Voltages are positive with respect to cathode unless indicated otherwise.

Maximum Ratings (Design Maximum Values)

Anode Voltage (Note 2) .................... 20,000 Max. Volts DC
Grid #4 Voltage ................... -550 Min. to +1100 Max. Volts DC
Grid #2 Voltage .................... 200 Min. to 550 Max. Volts DC

Grid #1 Voltage

Negative-Bias Value ..................... 154 Max. Volts DC
Negative-Peak Value .................... 220 Max. Volts
Positive-Bias Value .................... 0 Max. Volts DC
Positive-Peak Value .................... 2 Max. Volts

Peak-Heater-Cathode Voltage

Heater Negative with Respect to Cathode
During Warm-up Period not to Exceed
15 Seconds ................................ 450 Max. Volts
After Equipment Warm-up Period ........ 200 Max. Volts
Heater Positive with Respect to Cathode 200 Max. Volts

Typical Operating Conditions

Anode Voltage ............................ 16,000 Volts DC
Grid #4 Voltage for Focus ............... 0 to 400 Volts DC
Grid #2 Voltage .......................... 400 Volts DC
Grid #1 Voltage (Note 3) .............. -65 to -105 Volts DC

Maximum Circuit Values

Grid #1 Circuit Resistance .............. 1.5 Max. Megs
CATHODE DRIVE SERVICE

Voltages are positive with respect to Grid #1 unless indicated otherwise.

Maximum Ratings (Absolute Maximum Values)

Anode Voltage (Note 2) ............... 20,000 Max. Volts DC
Grid #4 Voltage .................. -400 Min. to +1250 Max. Volts DC
Grid #2 Voltage .................. 350 Min. to 700 Max. Volts DC
Cathode Voltage
Positive-Bias Value .................. 154 Max. Volts DC
Positive-Peak Value .................. 220 Max. Volts
Negative-Bias Value .................. 0 Max. Volts DC
Negative-Peak Value .................. 2 Max. Volts
Peak-Heater-Cathode Voltage
Heater Negative with Respect to Cathode
During Warm-up Period not to Exceed
15 Seconds ............... 450 Max. Volts
After Equipment Warm-up Period ........ 200 Max. Volts
Heater Positive with Respect to Cathode ........ 200 Max. Volts

Typical Operating Conditions

Anode Voltage .................. 16,000 Volts DC
Grid #4 Voltage for Focus .................. 0 to 400 Volts DC
Grid #2 Voltage .................. 400 Volts DC
Grid #1 Voltage .................. 0 Volts DC
Cathode Voltage (Note #3) .................. +56 to +84 Volts DC

Maximum Circuit Values

Grid #1 Circuit Resistance ............. 1.5 Max. Megs

Notes

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

2. Anode, Grid #3 and Grid #5 are connected together within the tube and are referred to herein as anode.

3. For visual extinction of the focused raster, For cutoff of the undeflected focus spot, the absolute value of the bias between cathode and grid will increase by about 5 volts.
MECHANICAL NOTES

1. The reference line is determined by reference line gauge JEDEC #126.
2. The area around the button is covered with an insulating coating.
3. Socket for this base should not be rigidly mounted; it should have flexible leads and be allowed to move freely. The design of the socket should be such that the circuit wiring cannot impress lateral strains through the socket contacts on the base pins. Bottom circumference of the base wafer will fall within a circle concentric with bulb axis and having a diameter of \(\frac{13}{4}\)".

WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at anode voltages higher than 16,000 volts.

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