PHILCO
CATHODE RAY TUBE
DATA SHEET
TENTATIVE

DESCRIPTION
The 17DAP4/SF17 is an extremely short electrostatic focus and magnetic deflec-
tion, direct view picture tube specifically intended for television applications.
Special features of the tube are its very short overall length and unusually low
heater power. The heater is a 450 milliamper 2.68 volt design with controlled
warm-up time for series string application. Other features of the tube are a metal
backed screen, a new straight gun requiring no ion trap magnet, external con-
ductive 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 ......................................... 105 Degrees
Vertical ........................................... 87 Degrees
Diagonal .......................................... 110 Degrees
Direct Inter-electrode Capacitance, approximate
Cathode to all ..................................... 3.65 μF
Grid #1 to all ..................................... 4.15 μF
Extraneous Capacitance ......................... 900 Min. μF
..................................................... 1400 Max. μF
Heater Voltage .................................. 2.68 ± 5% Volts
Heater Current at 2.68 Volts .................. 0.45 Amperes
Heater Warm-up Time (Note 1) ............. 11 Seconds

OPTICAL DATA
Phosphor Number .................................. P4
Fluorescent Color .................................. White
Persistence ....................................... Medium
Faceplate
Light Transmission at Center, approximate . . . 77 Percent

MECHANICAL DATA
Overall Length .................................. 10 7/16 ± 3/16 Inches
Neck Length ...................................... 33/16 ± 1/16 Inches
Greatest Dimensions of Bulb
Diagonal ........................................... 163/16 ± 1/16 Inches
Width .............................................. 153/16 ± 1/16 Inches
Height ............................................. 12 3/4 ± 1/8 Inches
Minimum Useful Screen Dimensions
(maximum assured dimensions)
Diagonal ........................................... 15 3/4 Inches
Width .............................................. 14 3/4 Inches
Height ............................................. 11 3/16 Inches
Base ................................................. B7-208
Anode Contact Aligns with Center
Anode Contact ................................... J1-21
Basing .............................................. 8J8K
Line between Pin #6 and #7 ± 30°

GRID DRIVE SERVICE
Voltages are positive with respect to cathode unless indicated otherwise.

MAXIMUM RATINGS (Absolute Maximum Values)
Anode Voltage (Note 2) ....................... 17,600 Max. Volts DC
Grid #4 Voltage ................................. -700 to +950 Max. Volts DC
Grid #2 Voltage ................................. 550 Max. Volts DC
Grid #1 Voltage
Positive-Bias Value ........................... 155 Max. Volts DC
Negative-Bias Value ......................... 220 Max. Volts
Positive-Peak 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 .................................. 14,000 Volts DC
Grid #4 Voltage for Focus ................... 100 to 500 Volts DC
Grid #2 Voltage ................................ 300 Volts DC
Grid #1 Voltage (Note 3) ...................... 35 to -72 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) ....................... 17,600 Max. Volts DC
Grid #4 Voltage ................................. -550 to +1100 Max. Volts DC
Grid #2 Voltage ................................ 700 Max. Volts DC
Cathode Voltage
Positive-Bias Value ........................... 155 Max. Volts DC
Negative-Bias Value ......................... 220 Max. Volts
Positive-Peak 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

from JETEC release #2218, June 16, 1958
TYPICAL OPERATING CONDITIONS

Anode Voltage .................................. 14,000 Volts DC
Grid #4 Voltage for Focus .................. 150 to 550 Volts DC
Grid #2 Voltage ................................. 300 Volts DC
Grid #1 Voltage ................................... 0 Volts DC
Cathode Voltage (Note #3) ....... +34 to +60 Volts DC

MAXIMUM CIRCUIT VALUES

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

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 the 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 JETEC #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 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.