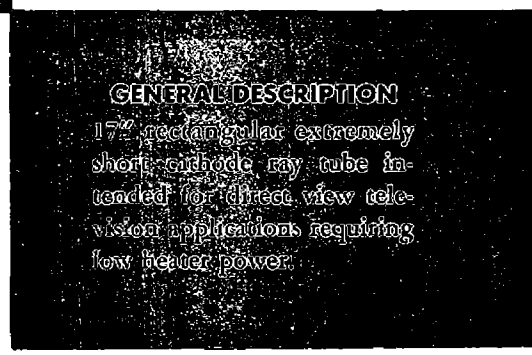
PHILCO
CATHODE RAY TUBE DATA SHEET

TENTATIVE

17DAP4/SF17
TELEVISION PICTURE TUBE



DESCRIPTION

The 17DAP4/SF17 is an extremely short electrostatic focus and magnetic deflection, 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 milliampere 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 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	105 Degrees
Vertical	87 Degrees
Diagonal	110 Degrees
Direct Interelectrode Capacitance, approximate	
Cathode to All	3.65 $\mu\mu$f
Grid #1 to All	4.15 $\mu\mu$f
External Coating Capacitance	900 Min. $\mu\mu$f 1400 Max. $\mu\mu$f
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	$10\frac{11}{16}\pm\frac{3}{16}$ Inches
Neck Length	$3\frac{9}{16}\pm\frac{1}{16}$ Inches
Greatest Dimensions of Bulb	
Diagonal	$16\frac{9}{16}\pm\frac{1}{8}$ Inches
Width	$15\frac{5}{8}\pm\frac{1}{8}$ Inches
Height	$12\frac{3}{4}\pm\frac{1}{8}$ Inches
Minimum Useful Screen Dimensions (maximum assured dimensions)	
Diagonal	$15\frac{3}{4}$ Inches
Width	$14\frac{3}{4}$ Inches
Height	$11\frac{11}{16}$ Inches
Base	B7-208
Basing	8JK
Anode Contact	J1-21
Anode Contact Aligns with Center 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	
Negative-Bias Value	155 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	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
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

from JETEC release #2218, June 16, 1958

TYPICAL OPERATING CONDITIONS

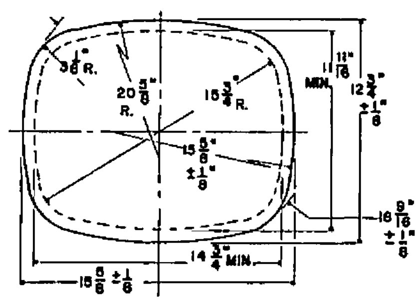
Anode Voltage	14,000 Volts DC
Grid #4 Voltage for Focus	150 to 550 Volts DC
Grid #2 Voltage	300 Volts DC
Grid #1 Voltage	0 Volts DC
Cathode Voltage (Note #3)	+34 to +60 Volts DC

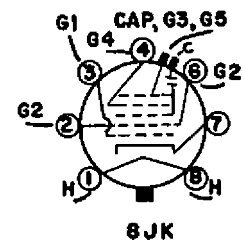
MAXIMUM CIRCUIT VALUES

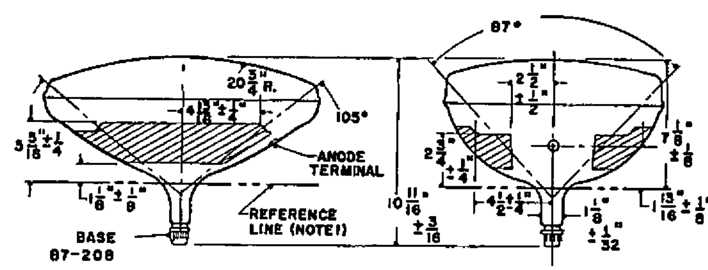
Grid #1 Circuit Resistance	1.5 Max. Megs.

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 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 1¾".

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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