

23DSP4

Television Picture Tube

PHILCO CORPORATION - LANSDALE DIVISION

CATHODE RAY TUBE

DATA SHEET

Tentative

Description

The 23DSP4 is a 23" - 92° direct view rectangular glass picture tube having an aluminized screen, spherical faceplate, non ion trap gun, internal shielding and is designed to operate with electrostatic focus and magnetic deflection.

It is a "HiGm" tube designed to operate in cathode drive service under low G2 voltage conditions. The tube base is short and provides straight through leads oriented by an indexing lug. Implosion protection is provided by means of a tension band, rim band and coated funnel.

Electrical Data

Focusing Method . . . . .	Electrostatic
Deflection Method . . . . .	Magnetic
Deflection Angle, approximate	
Horizontal . . . . .	81 Degrees
Vertical . . . . .	66 Degrees
Diagonal . . . . .	92 Degrees
Direct Interelectrode Capacitance, approximate	
Cathode to All. . . . .	4.0uuf
Grid #1 to All. . . . .	8.0uuf
External Coating Capacitance . . . . .	2000 Min. uuf 2500 Max. uuf
Heater Voltage . . . . .	6.3 Volts
Heater Current at 6.3 volts . . . . .	0.60 <sup>+</sup> 5% Amperes
Heater Warm-up Time (Note 1) . . . . .	11 Seconds

Optical Data

Phosphor Number . . . . .	Aluminized P4
Fluorescent Color . . . . .	White
Persistence . . . . .	Medium Short
Light transmission at Center, approximate . . . . .	42 Percent

Continued:

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Mechanical Data

Overall Length . . . . . 18 3/8<sup>±</sup>5/16 Inches  
Neck Length . . . . . 5 7/8<sup>±</sup>1/8 Inches  
Greatest Dimensions of Bulb (including banding)  
  Diagonal . . . . . 23.640 Inches  
  Width . . . . . 21.255 Inches  
  Height . . . . . 16.750 Inches  
Minimum Useful Screen Dimensions . . . . . 282 Sq. Inches  
(maximum assured dimensions)  
  Diagonal . . . . . 22 5/16 Inches  
  Width . . . . . 19 5/16 Inches  
  Height . . . . . 15 1/4 Inches  
Bulb . . . . . J187-J1  
Base . . . . . B7-208  
Basing . . . . . 8HR  
Anode Contact . . . . . J1-21  
Anode Contact Aligns with Pin #4 <sup>±</sup>30°

CATHODE DRIVE SERVICE

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

Maximum Ratings (Design Maximum Values)

Anode Voltage (Note 2) . . . . . 25,000 Volts DC  
Grid #4 Voltage . . . . . -550 Min. to +1100 Max. Volts DC  
Grid #2 Voltage . . . . . 80 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 . . . . .	18,000 Volts DC
Grid #4 Voltage for Focus . . . . .	-100 to +300 Volts DC
Grid #2 Voltage . . . . .	65 Volts DC
Cathode Voltage (Note 3) . . . . .	+41 to +56 Volts DC

Maximum Circuit Values

Grid #1 Circuit Resistance . . . . .	1.5 Max. Megs
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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 undeflected focus spot, the absolute value of the bias between cathode and grid will increase by about 4 volts.

