

Large P4 monochrome television picture tube designed for high-voltage direct-view service, using manufacturer-specified focusing, magnetic deflection, and beam-control arrangements for type 23SP4.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / 600 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Cathode Ray	
MAXIMUM PLATE VOLTAGE	22000 V
Direct-view CRT; maximum anode voltage promoted. Source warns of possible X-radiation exposure above specified voltage conditions.	

23-inch 110-degree Twin-Panel monochrome television CRT with electrostatic focus and magnetic deflection.



SOURCE OPERATING CONDITIONS

1950 Sylvania

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1950 SYLVANIA

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Phosphor	P4	—
Deflection method	Magnetic	—
Focusing method	Electrostatic	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1965 Sylvania Electronic Tubes Vol3

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1965 SYLVANIA ELECTRONIC TUBES VOL3

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Focusing method	Electrostatic	—
Deflection method	Magnetic	—
Horizontal deflection angle	99 deg	—
Diagonal deflection angle	110 deg	—
Vertical deflection angle	82 deg	—
Fluorescence	White	—
Persistence	Short to medium	—
Heater voltage	6.3 V	—
Heater current	600 mA	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Phosphor	Aluminized P4	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum anode voltage	22000 V	—
Typical anode voltage	16000 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical focus-electrode voltage maximum	400 V	—
Typical grid2 voltage	300 V	—
Cutoff voltage range	-35 to -72 V	—
Grid1 circuit resistance maximum	1.5 Mohm	—
Focus-electrode voltage minimum	-550 V	—
Focus-electrode voltage maximum	1100 V	—
Grid2 voltage maximum	550 V	—
X-radiation precaution	Operate within published maximum anode-voltage rating; source carries X-radiation warning at elevated EHT.	

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid1-to-all capacitance	6 pF	—
External conductive coating to anode capacitance maximum	2500 pF	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Monochrome television picture display	—



SOURCE DATA APPENDIX

1965 Westinghouse Data Book

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1965 WESTINGHOUSE DATA BOOK

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	600 mA	—
Focusing Method	Low Voltage Electrostatic text	—
Deflection Method	Magnetic text	—
Horizontal Deflection Angle	85 deg	Approximate

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Vertical Deflection Angle	68 deg	Approximate
Diagonal Deflection Angle	90 deg	Approximate
Phosphor	Aluminized P4 text	—
Fluorescence	White text	—
Light Transmittance	73 percent	Approximate
Cathode-to-All Capacitance	5 pF	Approximate
Grid1-to-All Capacitance	6 pF	Approximate
External Coating-to-Anode Capacitance Minimum	2000 pF	—
External Coating-to-Anode Capacitance Maximum	2500 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Anode Voltage	20000 V	—
Minimum Anode Voltage	11000 V	—
Maximum Focus Electrode Positive Voltage	1100 V	Grid4
Maximum Focus Electrode Negative Voltage	-550 V	Grid4
Maximum Grid2 Voltage	500 V	—
Minimum Grid2 Voltage	200 V	—
Maximum Heater-Cathode Voltage During Warmup	450 V	Duration<=15s
Maximum Heater-Cathode Voltage After Warmup	200 V	—
Typical Anode Voltage	16000 V	CathodeDrive
Typical Focus Voltage Minimum	0 V	Grid4
Typical Focus Voltage Maximum	400 V	Grid4
Typical Grid2 Voltage	450 V	CathodeDrive
Cathode Voltage for Raster Cutoff Minimum	45 V	CathodeDrive
Cathode Voltage for Raster Cutoff Maximum	105 V	CathodeDrive
Maximum Grid1 Circuit Resistance	1.5 Mohm	—

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes,
and their source documents.

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