



ELECTRONIC TUBE REFERENCE

24YP4

Specialized - Cathode Ray electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
CATHODERAY

Twenty-four-inch direct-view monochrome television picture tube with a P4 screen and magnetic deflection. Manufacturer documentation provides the high-voltage operating, focusing, optical, and capacitance characteristics required for receiver display service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	12L	BASE PINS	6
NOMINAL HEATER	6.3 V / 600 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 0 Cathode Ray	
MAXIMUM PLATE VOLTAGE	20000 V
MAXIMUM SCREEN VOLTAGE	500 V
<i>Picture-tube anode maximum 20 kV; source includes X-ray shielding warning above 16 kV.</i>	

Direct-view cathode-ray picture tube intended for television display service. The supplied Tung-Sol datasheet provides electrical ratings, operating conditions, capacitances, optical characteristics, focusing and deflection information. Features an aluminized screen where specified by this designation.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1950 Sylvania

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

1950 SYLVANIA

Section 0 · Cathode Ray

CHARACTERISTICS

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



SOURCE OPERATING CONDITIONS

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1961 Tung Sol

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

1961 TUNG SOL

Section 0 · Cathode Ray

OTHER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Anode Voltage	20000 V	—
Typical Anode Voltage	18000 V	—
Maximum Grid2 Voltage	500 V	—
Typical Grid2 Voltage	200 V	—

CHARACTERISTIC

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FocusingMethod	LowVoltageElectrostatic	—
DeflectingMethod	Magnetic	—
DiagonalDeflectionAngleApproximate	90 degree	—
PhosphorNumber	4	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FluorescentColor	White	—
Faceplate	Gray filter; aluminized screen	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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 0 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum anode voltage	18000 V	Published maximum anode voltage
Anode voltage	20000 V	Anode voltage 20,000 Volts dc
After Equipment Warm-Up Period 180 VoltsHeaterPositivewithRespecttoCathode	180 V	After Equipment Warm-Up Period 180 VoltsHeaterPositivewithRespecttoCathode.....180Volts
Anode voltage	18000 V	Anode voltage 18,000 Volts dcGridNo.4Voltage. T72to+396VoltsdcGridNo2Voltage. 300VoltsdcGridNo.1VoltageRequiredforcutoff3. . .-28to-72VoltsdcJfuIonTrapMagnetstrength(approx.). 40Gausses

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater voltage
Faceplate Gray Filter GlassLightTransmittance(approx.)	68 %	Faceplate Gray Filter GlassLightTransmittance(approx.).....68Percent
Heater warm-up Time]	11 s	Heater warm-up Time] 11 Seconds

CIRCUITVALUE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
I. Heater ouaran-ttp lime il the tii'ne iegquired_for lbe Voltage acrgSS the beater terminals lo increase to	5 V	I. Heater ouaran-ttp lime il the tii'ne iegquired_for lbe Voltage acrgSS the beater terminals lo increase to 5.0 Volts in lbe

SOURCE OPERATING CONDITIONS

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1966 Tung Sol Electronic Tubes 4 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 4 OF 4

Section 0 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
LOH VOLTAGE ELECTROSTATIC FOCUS – value 1	10 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
LOH VOLTAGE ELECTROSTATIC FOCUS – value 2	10 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
FOCUSI N.G METHOD	10 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
DIRECT INTERELECTRODE CAPACITANCES (APPR OX.) – value 1	1	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
DIRECT INTERELECTRODE CAPACITANCES (APPR OX.) – value 2	0	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
GRID #1 TO ALL OTHER ELECTRODES – value 1	1	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
GRID #1 TO ALL OTHER ELECTRODES – value 2	0	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
GRID #1 TO ALL OTHER ELECTRODES – value 3	6	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	1200	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
PHOSPHOR NUMBER	4	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
HEATER VOLTAGE	7.3 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HEATER CURRENT	600 mA	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
HEATER POSITIVE WITH RESPECT TO CATHODE	180 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
AC ATNODE SHOULD BE RETURNED TO ONE SIDE OR TO THE MID-TAP OF THE HEATER TRANSFORMER WINDING. – value 1	0	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
AC ATNODE SHOULD BE RETURNED TO ONE SIDE OR TO THE MID-TAP OF THE HEATER TRANSFORMER WINDING. – value 2	0	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
AC ATNODE SHOULD BE RETURNED TO ONE SIDE OR TO THE MID-TAP OF THE HEATER TRANSFORMER WINDING. – value 3	0	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
BVIAL EXTINCTION OF UNDEFLECTED FOCUSED SPOT.	0	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
PIN gp	2	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	1500	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM OC ANODE, GRID #3 VOLTAGE – value 1	0 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM OC ANODE, GRID #3 VOLTAGE – value 2	3 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM OC ANODE, GRID #3 VOLTAGE – value 3	20000 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM DC GRID #4 VOLTAGE – value 1	4 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM DC GRID #4 VOLTAGE – value 2	0 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
MAXIMUM DC GRID #4 VOLTAGE – value 3	1000 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM DC GRID #2 VOLTAGE – value 1	2 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM DC GRID #2 VOLTAGE – value 2	500 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM GRID #1 VOLTAGE	1 V	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM GRID #1 CIRCUIT RESISTANCE – value 1	1 Mohm	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.
MAXIMUM GRID #1 CIRCUIT RESISTANCE – value 2	1.5 Mohm	Published CRT datasheet value; multiple values on one source row represent separate conditions, limits, or nominal values.



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1968 General Electric Co

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

1968 GENERAL ELECTRIC CO

Section 0 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid Number 2 Voltage Maximum	500 V	—
Typical Anode Voltage	16000 V	Typical Operation