



engineering data service

SYLVANIA

19XP4 19AVP4

19AXP4 19AYP4

CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic
Deflection Method	Magnetic
Deflection Angles (Approx.)	
Horizontal	101 Degrees
Diagonal	114 Degrees
Vertical	86 Degrees
Phosphor	Aluminized P4
Fluorescence	White
Persistence	Short to Medium
Faceplate	Gray Filter Glass
Light Transmittance (Approx.)	78 Percent

ELECTRICAL DATA

	19AYP4 19AXP4	19XP4 19AVP4	
Heater Voltage	6.3	6.3	Volts
Heater Current $\pm 5\%$	0.45	0.60	Ampere
Heater Warm-up Time ¹	11	11	Seconds
Direct Interelectrode Capacitances (Approx.)			
Cathode to All Other Electrodes		5 μmf	
Grid No. 1 to All Other Electrodes		6 μmf	
External Conductive Coating to Anode ²		1500 μmf	Max.
		1000 μmf	Min.

MECHANICAL DATA

Minimum Useful Screen Dimensions (Maximum Assured)		
Height	12	Inches
Width	15 $\frac{1}{8}$	Inches
Diagonal	17 $\frac{9}{16}$	Inches
Minimum Useful Screen Area	172	Sq. Inches
Neck Length	4 $\frac{1}{8} \pm \frac{1}{8}$	Inches
Overall Length	11 $\frac{3}{8} \pm \frac{1}{4}$	Inches
Bulb	J149A	
Bulb Contact (Recessed Small Cavity Cap)	J1-21	
Base	B7-208	
Basing	8HR	
Weight (Approx.)	13 $\frac{1}{2}$	Pounds

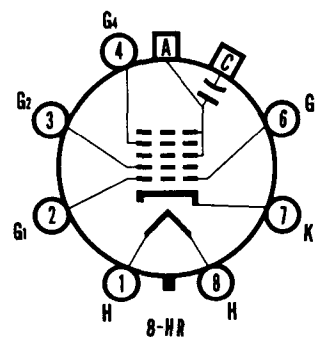
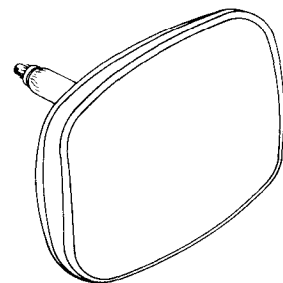
RATINGS

MAXIMUM RATINGS (Design Maximum Values)

	19AYP4 19AVP4	19AXP4	19XP4	
Grid Drive Service ³				
Maximum Anode Voltage	23,000	20,000	20,000	Volts dc
Minimum Anode Voltage	15,000	10,000	11,000	Volts dc
Grid No. 4 Voltage (Focusing Electrode)		-550 to	+1100	Volts dc
Maximum Grid No. 2 Voltage			550	Volts dc
Minimum Grid No. 2 Voltage			200	Volts dc
Grid No. 1 Voltage				
Negative Bias Value			154	Volts dc
Negative Peak Value			220	Volts dc
Positive Bias Value			0	Volts dc
Positive Peak Value			2	Volts dc
Peak Heater-Cathode Voltage				
Heater Negative with Respect to Cathode				
During Warm-up Period not to				
Exceed 15 Seconds			450	Volts
After Equipment Warm-up Period			200	Volts
Heater Positive with Respect to Cathode			200	Volts

QUICK REFERENCE DATA

Television Picture Tube
19" Direct Viewed
Rectangular Glass Type
Spherical Faceplate
Gray Filter Glass
Aluminized Screen
Electrostatic Focus
114° Magnetic Deflection
1 $\frac{1}{8}$ " Neck Diameter
No Ion Trap
External Conductive Coating



SYLVANIA ELECTRONIC TUBES

A Division of
Sylvania Electric Products Inc.

PICTURE TUBE OPERATIONS SENECA FALLS, NEW YORK

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File Under
TELEVISION PICTURE TUBES

MAXIMUM RATINGS (Design Maximum Values) Con't.

	19AYP4	19AVP4	19AXP4	19XP4	
Cathode Drive Service ⁴					
Maximum Anode Voltage	23,000	20,000	20,000	Volts	dc
Minimum Anode Voltage	15,000	10,000	11,000	Volts	dc
Grid No. 4 Voltage (Focusing Electrode)			-400 to +1250	Volts	dc
Maximum Grid No. 2 Voltage			700	Volts	dc
Minimum Grid No. 2 Voltage			350	Volts	dc
Cathode Voltage					
Positive Bias Value			154	Volts	dc
Positive Peak Value			220	Volts	
Negative Bias Value			0	Volts	dc
Negative Peak Value			2	Volts	
Peak Heater-Cathode Voltage					
Heater Negative with Respect to Cathode					
During Warm-up Period not to Exceed 15 Seconds			450	Volts	
After Equipment Warm-up Period			200	Volts	
Heater Positive with Respect to Cathode			200	Volts	

TYPICAL OPERATING CONDITIONS

	19AYP4	19AXP4	
Grid Drive Service ³	19AVP4	19XP4	
Anode Voltage	20,000	16,000	Volts dc
Grid No. 4 Voltage for Focus		0 to 400	Volts dc
Grid No. 2 Voltage		400	Volts dc
Grid No. 1 Voltage Required for Cutoff ⁵		-46 to -94	Volts dc
Cathode Drive Service ⁴	19AYP4	19AXP4	
	19AVP4	19XP4	
Anode Voltage	20,000	16,000	Volts dc
Grid No. 4 Voltage for Focus		0 to 400	Volts dc
Grid No. 2 Voltage		400	Volts dc
Cathode Voltage Required for Cutoff ⁵		42 to 78	Volts dc

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Megohms Max.
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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 the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.
2. External conductive coating must be grounded.
3. Voltages are positive with respect to cathode unless indicated otherwise.
4. Voltages are positive with respect to Grid No. 1 unless indicated otherwise.
5. Visual extinction of focused raster. For cutoff of the undeflected focused spot, the absolute value of the bias between cathode and grid will increase by about 5 volts.

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 higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

Technical drawing of a base component, showing top, side, and bottom views with dimensions and labels.

Top View:

- Overall width: $18\frac{5}{8} \pm \frac{1}{8}$
- Overall height: $12" \text{ MIN.}$
- Inner width: $15\frac{1}{8} \text{ MIN.}$
- Inner height: $16\frac{13}{32} \pm \frac{1}{8}$
- Corner radius: $15" \text{ R.}$
- Inner corner radius: $32\frac{5}{8} \text{ R.}$
- Inner corner radius: $2\frac{9}{16}$
- Inner corner radius: $17\frac{9}{16} \text{ MIN.}$
- Inner corner radius: $48" \text{ R.}$
- Inner corner radius: $1\frac{1}{2} \text{ R.}$
- USEFUL SCREEN AREA

Side View:

- Top width: $3\frac{5}{16} \pm \frac{1}{4}$
- Top width: $1\frac{1}{8} \pm \frac{1}{8}$
- Top radius: $3\frac{3}{8} \text{ R.}$
- Top angle: 5°
- Top height: $5\frac{1}{2} \pm \frac{1}{4}$
- Top height: $13\frac{11}{32} \pm \frac{1}{8}$
- Top height: $1\frac{1}{16} \text{ MAX.}$
- Top radius: $48" \text{ R.}$
- Top angle: 86°
- Top radius: $1\frac{9}{16} \pm \frac{1}{8}$
- Top width: $7\frac{1}{4} \pm \frac{1}{8}$
- Top width: $4\frac{1}{8} \pm \frac{1}{8}$
- Top width: $11\frac{3}{8} \pm \frac{1}{4}$
- Top radius: $1\frac{1}{16} \text{ MAX.}$
- EXTERNAL CONDUCTIVE COATING
- REF. LINE

Bottom View:

- Bottom width: $1\frac{23}{32}$
- Bottom angle: 5°
- Bottom radius: $48" \text{ R.}$
- Bottom radius: $3\frac{3}{8} \text{ R.}$
- Bottom angle: 101°
- Bottom radius: $2\frac{19}{32}$
- Bottom height: $7\frac{1}{16} \text{ MAX.}$
- Bottom height: $7\frac{1}{16} \text{ MAX.}$
- SEAL LINE
- REFERENCE LINE
- NOTE 1
- Y = $.575 X^2 + .576$
- 1.125" DIA. $+.043$ $-.025$
- BASE B7-208

Bottom View of Base (NOTE 2):

- Center Line A-A'
- 8
- 7
- 6
- 4
- 3
- 2
- 1
- 30°
- 30°

D60028A

1. Reference Line is determined by plane C-C' of JEDEC No. 126 Reference Line Gauge, when the gauge is seated against the bulb.
2. Base Pin No. 4 aligns with horizontal centerline (A-A') within 30° and is on same side as anode contact, J1-21.