

ELECTRONIC TUBE REFERENCE

23FRP4

Specialized - Cathode Ray electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
CATHODERAY

Large aluminized P4 monochrome television picture tube for high-voltage direct-view service, using electrostatic focusing and magnetic deflection with manufacturer-specified operating characteristics for type 23FRP4.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	7
NOMINAL HEATER	6.9 V / 20 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Cathode Ray	
MAXIMUM PLATE VOLTAGE	23000 V
MAXIMUM SCREEN VOLTAGE	10 V
CRT-specific ratings, operating conditions, capacitances, focus/deflection, cutoff, optical, and screen data are retained in section parameters.	

23-inch 110-degree filled-rim monochrome television CRT with short neck and low-grid-2 cathode drive.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1964 RMA EIA

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

1964 RMA EIA

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Focusing method	Electrostatic	—
Deflection method	Magnetic	—
Horizontal deflection angle	99 deg	—
Vertical deflection angle	82 deg	—
Diagonal deflection angle	110 deg	—
Heater voltage	6.3 V	—
Heater current	450 mA	—
Heater warm-up time	11 s	—
External coating-to-implosion hardware resistance minimum	50 Mohm	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode-to-all capacitance	5 pF	—
Grid1-to-all capacitance	6 pF	—
External coating capacitance minimum	1700 pF	—
External coating capacitance maximum	2500 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode voltage maximum	23000 V	—
Anode voltage minimum	12000 V	—
Typical anode voltage	16000 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical focus-electrode voltage	250 V	—
Typical grid2 voltage	50 V	—
Grid2 voltage minimum	25 V	—
Heater voltage maximum	6.9 V	—
Heater voltage minimum	5.8 V	—

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



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 RCA HB3 Binder 1 of 7

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

1971 RCA HB3 BINDER 1 OF 7

Section 1 · Cathode Ray

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
1 10° MAGNETIC DEFLECTION – published value 1	1 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
1 10° MAGNETIC DEFLECTION – published value 2	10 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid No.1 to all other electrodes	6 pF	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
External conductive coating to anodes 1700 min-2500 max pF – published value 1	1700 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
External conductive coating to anodes 1700 min-2500 max pF – published value 2	2500 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Current at 6.3 V – published value 1	6.3	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater Current at 6.3 V – published value 2	450	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater Current at 6.3 V – published value 3	20	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Light transmission at center (Approx.)	42	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Projected Area of Screen	282	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Anode Voltage – published value 1	1 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Anode Voltage – published value 2	1000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Anode Voltage – published value 3	23000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.2 Voltage – published value 1	25 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.2 Voltage – published value 2	60 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater Voltage – published value 1	5.7 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater Voltage – published value 2	6.9 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Combines ~C & DC voltage	200 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Anode Voltage	16000 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.4 Voltage – published value 1	0 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.4 Voltage – published value 2	400 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.2 Voltage	50 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Cathode Voltage – published value 1	32 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Cathode Voltage – published value 2	50 V	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No. 1 Circuit Resistance	1.5 mA	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
MINIMUM SCREEN – published value 1	1	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
MINIMUM SCREEN – published value 2	200	Published CRT datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

TUBE TINKER

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

[Catalog](#) [Tube types](#) [Full books](#) [Blog](#) [Feedback & corrections](#)

© 2026 Tube Tinker