



ELECTRONIC TUBE REFERENCE

17RP4C

Specialized - Cathode Ray electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
CATHODERAY

High-voltage P4 cathode-ray picture-display tube using magnetic deflection, with manufacturer data supporting wide-angle scanning and typical anode operation in the 12-14 kV range.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	5
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	16 V
MAXIMUM SCREEN VOLTAGE	5 V
<i>CRT-specific electrode/focus/deflection data retained as parameter rows.</i>	

17RP4C — Direct-View Cathode Ray Picture Tube

The **17RP4C** is a direct-view cathode ray picture tube designed specifically for television applications. It features a rectangular glass construction, electrostatic focusing, and magnetic deflection. The tube is built with a unipotential cathode, an external conductive coating, a grey filter faceplate, and requires an external single field ion trap.

The 17RP4C is identical to the [17RP4](#) except that the 17RP4C incorporates an aluminized screen.

Mechanical and Physical Specifications

The physical structure of the 17RP4C is defined by its rectangular bulb and specific alignment requirements.

Dimensions

- **Overall Length:** 19 1/4 ± 3/8 inches
- **Greatest Bulb Dimensions:**
 - Diagonal: 16 5/8 ± 1/8 inches
 - Width: 15 3/8 ± 1/8 inches
 - Height: 12 1/4 ± 1/8 inches
- **Minimum Useful Screen Dimensions:**
 - Diagonal: 15 1/2 inches
 - Width: 14 1/4 inches
 - Height: 10 3/4 inches

Base and Bulb Connections

The tube utilizes a **small shell duodecal 6-pin base (B6-63)** with a **12L** basing arrangement. The high-voltage anode connection is made via a **recessed small cavity cap (J1-21)**. This bulb contact is aligned with pin position #6 within a tolerance of ± 30 degrees.

Pin Number	Connection
Pin 1	Heater
Pin 2	Grid No. 1
Pin 6	Grid No. 4
Pin 10	Grid No. 2
Pin 11	Cathode
Pin 12	Heater
Anode Cap	Grid No. 3, Anode

Optical and Deflection Characteristics

The 17RP4C utilizes magnetic deflection to sweep the electron beam across its rectangular screen.

- **Deflection Angles:**
 - Horizontal: 66°
 - Diagonal: 70°

Optical Properties

The screen is coated with **Phosphor No. 4**, which produces a white fluorescent and white phosphorescent output with medium persistence. The grey filter faceplate provides a light transmission of approximately 66% at the center of the screen.

Direct Interelectrode Capacitances

The approximate capacitances of the tube's electrodes are as follows:

- **Cathode to all other electrodes:** 5 μf
- **Grid No. 1 to all other electrodes:** 6 μf
- **External conductive coating to anode:** 750 μf (minimum) to 1,500 μf (maximum)

Electrical Ratings and Operating Conditions

The ratings for the 17RP4C are established under the Design Center system. Operating the tube beyond these limits may impair performance or cause permanent damage.

Design Center Maximum Ratings

- **Heater Voltage:** 6.3 Volts
- **Heater Current:** 0.6 Ampere
- **Maximum DC Anode and Grid No. 3 Voltage:** 16,000 Volts
- **Maximum DC Anode No. 1 Voltage:** -500 to +1000 Volts
- **Maximum DC Grid No. 2 Voltage:** 500 Volts
- **Maximum Grid No. 1 Voltage:**
 - DC Negative-Bias Value: 125 Volts
 - DC Positive-Bias Value: 0 Volts
 - Positive-Peak Value: 2 Volts
- **Maximum DC Peak Heater-Cathode Voltage:**
 - Heater negative to cathode (during warm-up $\leq$ 15 seconds): 410 Volts
 - Heater negative to cathode (after warm-up): 180 Volts
 - Heater positive to cathode: 180 Volts
- **Maximum Grid No. 1 Circuit Resistance:** 1.5 Megohms

Typical Operating Conditions

Under typical operating conditions, the focusing electrode (Anode No. 1) is operated at ground potential but can be modulated to optimize overall focus across the screen area.

- **DC Anode and Grid No. 3 Voltage:** 12,000 Volts
- **DC Anode No. 1 Voltage (Focusing Electrode):** 0 Volts (modulation permitted for improved focus)
- **DC Grid No. 2 Voltage:** 300 Volts
- **DC Grid No. 1 Voltage:** -33 to -77 Volts (for visual extinction of the undeflected focused spot)

- **DC Ion Trap Current:** $75 \pm 50\%$ mA (using Standard Coil No. 111)



SOURCE OPERATING CONDITIONS

1961 Tung Sol

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

1961 TUNG SOL

Section 1 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Anode Voltage	18000 V	—
Typical Anode Voltage	14000 V	—
Maximum Grid2 Voltage	500 V	—
Typical Grid2 Voltage	300 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FocusingMethod	Magnetic	—
DeflectingMethod	Magnetic	—
DeflectionAngleApproximate	90 degree	—
PhosphorNumber	4	—
FluorescentColor	White	—
Variant	Published faceplate/screen variant on shared datasheet	—



SOURCE OPERATING CONDITIONS

SOURCE PDF

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

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CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FACEPLATE LIGHT TRANSMISSION	65 percent	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
HEATER POSITIVE WITH RESPECT TO CATHODE	1 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
DC ANODE S GRID #} VOLTAGE	12 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
DC ANODE #1 VOLTAGE (FOCUSING ELECTRODE)A	1 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
DC GRID #2 VOLTAGE – value 1	2 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
DC GRID #2 VOLTAGE – value 2	3 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
DC ION TRAP CURRENT STANDARD COIL #111 (APPROX.) – value 1	111 mA	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
DC ION TRAP CURRENT STANDARD COIL #111 (APPROX.) – value 2	75 mA	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
DC ION TRAP CURRENT STANDARD COIL #111 (APPROX.) – value 3	5 mA	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
MAXIMUM OC ANODE, GRID #} VOLTAGE	16 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
MAXIMUM DC ANODE #1 VOLTAGE – value 1	1 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
MAXIMUM DC ANODE #1 VOLTAGE – value 2	-5 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
MAXIMUM DC GRID #2 VOLTAGE – value 1	2 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
MAXIMUM DC GRID #2 VOLTAGE – value 2	5 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
MAXIMUM GRID #1 VOLTAGE	1 V	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
MAXIMUM GRID #1 CIRCUIT RESISTANCE – value 1	1 mA	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
MAXIMUM GRID #1 CIRCUIT RESISTANCE – value 2	1 mA	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.
MAXIMUM GRID #1 CIRCUIT RESISTANCE – value 3	5 mA	Published CRT datasheet value; multiple values on a row correspond to separate source-table conditions or limits.

TUBE TINKER

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