

ELECTRONIC TUBE REFERENCE

6CB6A

Voltage - Pentode Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Sharp-cutoff high-transconductance pentode for television IF amplification and VHF tuner RF service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7CM	BASE PINS	7
NOMINAL HEATER	6.3 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7CM - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – G1	A	G1 – Control Grid	CONNECTED
PIN2 – K	A	K – Cathode	CONNECTED
PIN3 – H	–	H – Heater	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – P	A	P – Plate (Anode)	CONNECTED
PIN6 – G2	A	G2 – Screen Grid	CONNECTED
PIN7 – G3	A	G3 – Suppressor Grid	CONNECTED
PIN7 – IS	A	IS – Internal Screen	CONNECTED

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	280000 Ω
TRANSCONDUCTANCE	0.008 S
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM SCREEN VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	2.3 W
MAXIMUM SCREEN DISSIPATION	0.55 W
MAXIMUM CATHODE CURRENT	30 mA
<i>Published ratings and characteristics promoted from approved datasheet.</i>	

Sharp-cutoff pentode used as a television IF amplifier to about 45 MHz and as an RF amplifier in VHF television tuners.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1966 Tung Sol Electronic Tubes 2 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

Section 1 · Pentode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance without shield	0.025 pF	—
Grid-to-plate capacitance with shield	0.015 pF	—
Input capacitance	6.5 pF	—
Output capacitance without shield	2 pF	—
Output capacitance with shield	3 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	125 V	ClassA
Grid #2 voltage	125 V	ClassA
Cathode bias resistor	56 ohm	ClassA
Plate current	13 mA	ClassA
Grid #2 current	3.7 mA	ClassA
Heater warm-up time	11 s	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid #1 voltage at 20 uA plate current	-6.5 V	—

1971 RCA HB3 Binder 3 of 7

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

1971 RCA HB3 BINDER 3 OF 7

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Nominal
Heater current	300 mA	Nominal
Maximum plate voltage	330 V	Promoted published value
Maximum screen voltage	330 V	Promoted published value
Maximum plate dissipation	2.3 W	Promoted published value
Voltage (AC or DC)	6.3 V	Heater Characteristics and Ratings fAbsolute-Maximum Valuesl:
Current at heater volts =	300 V	Heater Characteristics and Ratings fAbsolute-Maximum Valuesl:
respect to cathode	200 V	Heater Characteristics and Ratings fAbsolute-Maximum Valuesl:
Grid No.1 to plate	0.015 mA	Direct Interelectrode Capacitances:
Plate Supply Voltage	125 V	Characteristics, Class AI pmol if ier:
Grid-No.2 Supply Voltage	125 V	Characteristics, Class AI pmol if ier:
Grid-No.1 Voltage	-3 V	Characteristics, Class AI pmol if ier:
Cathode Resistor	56 ohm	Characteristics, Class AI pmol if ier:
Plate Resistance (Approx)	0.28 megohm	Characteristics, Class AI pmol if ier:
Transconductance	8000 uS	Characteristics, Class AI pmol if ier:
Plate Current	13 mA	Characteristics, Class AI pmol if ier:
Grid-No.2 Current - •3.7 ma	3.7 mA	Characteristics, Class AI pmol if ier:
plate μ a =	-6.5 V	Characteristics, Class AI pmol if ier:
PLATE VOLTAGE	330 V	Maximum Ratings, Absolute-Maximum Values:
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE.	330 V	Maximum Ratings, Absolute-Maximum Values:
GRIC-No.2 VOLTAGE See Grid-No.a Input Rating Chart	2 V	Maximum Ratings, Absolute-Maximum Values:

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
GRID-No.1 (CONTROL~RID) VOLTAGE	1 V	Maximum Ratings, Absolute-Maximum Values:
For grid-No.2 voltages	2 V	Maximum Ratings, Absolute-Maximum Values:
For grid-No.2 voltages between	2 V	Maximum Ratings, Absolute-Maximum Values:
PLATE DISSIPATION	2.3 W	Maximum Ratings, Absolute-Maximum Values:
to voltage variations as great as	20 V	Maximum Ratings, Absolute-Maximum Values:
With heater volts =	125 V	Maximum Ratings, Absolute-Maximum Values:
No.3 connected to cathode at socket, grid-No.2 supply volts =	2 V	Maximum Ratings, Absolute-Maximum Values:
125, and cathode resistor (ohms) bypassed =	56 ohm	Maximum Ratings, Absolute-Maximum Values:

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	280000 ohm	Promoted published value
Transconductance	8000 uS	Promoted published value



SOURCE OPERATING CONDITIONS

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

1971 RCA HB3 BINDER 4 OF 7

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Warm-up time (Average)	11 s	—
Plate-Supply Voltage	125 V	Published table column 1 of 2
Plate-Supply Voltage	125 V	Published table column 2 of 2
Grid-No.1 Voltage	-3 V	—
Cathode Resistor	56 Ω	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance (Approx)	0.28 MΩ	—
Transconductance	8000 μS	—
Plate Current	2.8 mA	Published table column 1 of 2
Plate Current	13 mA	Published table column 2 of 2
for plate μ_a =	20 V	Published table column 1 of 2
for plate μ_a =	-6.5 V	Published table column 2 of 2
E f=	63 V	—
GRID-Ns	2 V	Published table column 1 of 2
GRID-Ns	125 V	Published table column 2 of 2
Ef=	6.3 V	—
PLATE VOLTS=	125 V	—
GRID-N~	2 V	Published table column 1 of 2
GRID-N~	125 V	Published table column 2 of 2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to plate	0.025 pF	Published table column 1 of 2
Grid No.1 to plate	0.015 pF	Published table column 2 of 2
No	2 pF	Published table column 1 of 3
No	2 pF	Published table column 2 of 3
No	3 pF	Published table column 3 of 3

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE VOLTAGE	330 V	—
Positive-bias value	0 V	—
to	165 W	Published table column 1 of 2
to	0.55 W	Published table column 2 of 2
tween	165 V	Published table column 1 of 2
tween	330 V	Published table column 2 of 2
PLATE DISSIPATION	2.3 W	—
respect to cathode	200 V	—
For fixed-bias operation	0.25 MΩ	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
For cathode-bias operation	1 MΩ	—
The do component must not exceed	100 V	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1975 RCA RC30

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

1975 RCA RC30

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
about	45 MHz	Published in approved 6CB6A target datasheet entry; Section1
Heater Voltage (ac/dc) 3.15 4.2	6.3 V	Published in approved 6CB6A target datasheet entry; Section1
Heater Current 0.6 0.45	300 mA	Published in approved 6CB6A target datasheet entry; Section1
Heater Warm-up Time (Average) 11 11	11 seconds	Published in approved 6CB6A target datasheet entry; Section1
Plate Voltage	330 V	Published in approved 6CB6A target datasheet entry; Section1
Grid-No.5 (Suppressor-Grid) Voltage, Positive value	0 V	Published in approved 6CB6A target datasheet entry; Section1
Grid-No.2 Supply Voltage	330 V	Published in approved 6CB6A target datasheet entry; Section1
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0 V	Published in approved 6CB6A target datasheet entry; Section1
For grid-No.2 voltages between 165 and	330 V	Published in approved 6CB6A target datasheet entry; Section1
Plate Supply Voltage	125 V	Published in approved 6CB6A target datasheet entry; Section1
Cathode-Sias Resistor	56 Ω	Published in approved 6CB6A target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.2 Current	3.7 mA	Published in approved 6CB6A target datasheet entry; Section1
Grid-No.1 V_{g1} (Approx.) for plate current of 20 μ A	-6.5 V	Published in approved 6CB6A target datasheet entry; Section1
Grid-No.1 Voltage (Approx.) for plate current of	2.8 mA	Published in approved 6CB6A target datasheet entry; Section1
Grid-No.1 Voltage (Approx.) for plate current of 2.8 mA	-3 V	Published in approved 6CB6A target datasheet entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No. 3. and Internal Shield 6.5	6.6 pF	Published in approved 6CB6A target datasheet entry; Section1

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