

ELECTRONIC TUBE REFERENCE

50EH5

Power - Pentode Single (NOT beam) (under 10W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

High-transconductance series-heater audio power pentode delivering about 1.4 W from a 110 V plate supply.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7CV	BASE PINS	7
NOMINAL HEATER	50 V / 150 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7CV - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	11000 Ω
TRANSCONDUCTANCE	0.0146 S
MAXIMUM PLATE VOLTAGE	150 V
MAXIMUM SCREEN VOLTAGE	130 V
MAXIMUM PLATE DISSIPATION	5.5 W
MAXIMUM SCREEN DISSIPATION	2 W
MAXIMUM CATHODE CURRENT	50 mA
<i>Maximum ratings and Class A characteristics promoted from the printed tables.</i>	

Power pentode used in the audio output stage of television receivers. It is an explicit heater variant/co-designation in 25EH5.pdf.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	50 V	—
Heater current	150 mA	—
Plate supply voltage	110 V	ClassA1
Screen supply voltage	115 V	ClassA1
Maximum signal power output	1.4 W	ClassA1
Maximum signal power output	3.8 W	PushPull;ClassAB1;TwoTubes

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.65 pF	—
Input capacitance	17 pF	—
Output capacitance	9 pF	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1965 Westinghouse Data Book

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

1965 WESTINGHOUSE DATA BOOK

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate voltage	110 V	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical screen voltage	115 V	ClassA
Zero-signal screen current	11.5 mA	ClassA
Maximum-signal screen current	14.5 mA	ClassA
Power output	1.4 W	ClassA

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	14600 uS	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Audio output amplifier	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1966 Tung Sol Electronic Tubes 3 of 4

SOURCE PDF

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

1966 TUNG SOL ELECTRONIC TUBES 3 OF 4

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate voltage	110 V	ClassA
Typical screen voltage	115 V	ClassA
Zero-signal plate current	42 mA	ClassA
Load resistance	3000 ohm	ClassA
Maximum-signal power output	1.4 W	ClassA
Maximum plate voltage	150 V	PromotedValue
Maximum screen voltage	130 V	PromotedValue
Maximum plate dissipation	5.5 W	PromotedValue
Maximum screen dissipation	2 W	PromotedValue
Plate Voltage ->	150 V	PublishedTable

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid 2 (Screen-Grid) Voltage ~	130 V	PublishedTable
Plate Dissipation ~	5.5 W	PublishedTable
Grid 2 Input -►	2 W	PublishedTable
For Fixed-Bias Operation	0.1 Mohm	PublishedTable
For Cathode-Bias Operation	0.5 Mohm	PublishedTable
Plate Supply Voltage	110 V	PublishedTable
Grid 2 Supply Voltage	115 V	PublishedTable
Cathode Resistor	62 ohm	PublishedTable
Peak Af Grid 1 Voltage	3 V	PublishedTable
Signal Plate Current (Max.)	42 mA	PublishedTable
Zero-Signal Grid 2 Current	11.5 mA	PublishedTable

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	11000 ohm	PromotedValue
Transconductance	0.0146 A/V	PromotedValue
Grid 1 To Plate	0.65 pF	PublishedTable
Grid 1 To Cathode &Grid 3, Heater &Grid 2	17 pF	PublishedTable
Plate To Cathode &Grid 3, Heater &Grid 2	9 pF	PublishedTable
Average Characteristics 50 Volts	150 mA	PublishedTable
Current Operation 150 *	70 mA	PublishedTable
Heater Negative With Respect To Cathode	200 V	PublishedTable



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.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	110 V	ClassA
Screen Voltage	115 V	ClassA
Plate Current	42 mA	ClassA
Screen Current	11.5 mA	ClassA
Load Resistance	3000 ohm	ClassA
Power Output	1.4 W	ClassA
Total Harmonic Distortion	7 %	ClassA



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1971 RCA HB3 Binder 5 of 7

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

1971 RCA HB3 BINDER 5 OF 7

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	50 V	—
Heater current	150 mA	—
Plate voltage	110 V	ClassA
Screen voltage	115 V	ClassA
Cathode resistor	62 ohm	ClassA
Plate current	36 mA	ClassA
Screen current	10 mA	ClassA
Maximum plate voltage	150 V	—
Maximum screen voltage	130 V	—
Plate dissipation	5.5 W	—
Screen input	2 W	—

Characteristic		
Parameter	Published Value	Condition / Note
Plate resistance	17500 ohm	ClassA
Transconductance	13500 uS	ClassA

Capacitance		
Parameter	Published Value	Condition / Note
Grid-to-plate capacitance	0.65 pF	—
Input capacitance	17 pF	—
Output capacitance	9 pF	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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
Heater-Cathode Voltage	1.2 A	Other;PublishedValue1
Heater-Cathode Voltage	300 mA	Other;PublishedValue2
Heater-Cathode Voltage	150 mA	Other;PublishedValue3
Peak value	200 V	Other;PublishedValue1
Peak value	200 V	Other;PublishedValue2
Peak value	200 V	Other;PublishedValue3
Average value	100 V	Other;PublishedValue1
Average value	100 V	Other;PublishedValue2
Average value	100 V	Other;PublishedValue3
Plate Voltage	150 V	MaximumRating
Grid-No	2 V	MaximumRating;PublishedValue1
Grid-No	130 V	MaximumRating;PublishedValue2
Plate Dissipation	5.5 W	MaximumRating

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No	2 W	MaximumRating;PublishedValue1
Grid-No	2 W	MaximumRating;PublishedValue2
Plate Supply Voltage	110 V	TypicalOperation
Grid-No	2 V	TypicalOperation;PublishedValue1
Grid-No	115 V	TypicalOperation;PublishedValue2
Cathode-Bias Resistor	62 ohm	TypicalOperation
Peak AF Grid-No	1 V	TypicalOperation
Zero-Signal Plate Current	42 mA	TypicalOperation
Maximum-Signal Plate Current	42 mA	TypicalOperation
Zero-Signal Grid-No	2 mA	TypicalOperation;PublishedValue1
Zero-Signal Grid-No	11.5 mA	TypicalOperation;PublishedValue2
Maximum-Signal Grid-No	2 mA	TypicalOperation;PublishedValue1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to Plate	0.65 pF	Capacitance
Grid No.1 to Cathode, Heater. Grid No	2 pF	Capacitance;PublishedValue1
Grid No.1 to Cathode, Heater. Grid No	3 pF	Capacitance;PublishedValue2
Grid No.1 to Cathode, Heater. Grid No	17 pF	Capacitance;PublishedValue3
Plate to Cathode. Heater, Grid No	2 pF	Capacitance;PublishedValue1
Plate to Cathode. Heater, Grid No	3 pF	Capacitance;PublishedValue2
Plate to Cathode. Heater, Grid No	9 pF	Capacitance;PublishedValue3

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