

ELECTRONIC TUBE REFERENCE

6BA8A

Voltage - Pentode Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

Medium-mu triode plus sharp-cutoff pentode for television video, AGC, reactance, oscillator, and phase-splitter service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9DX	BASE PINS	9
NOMINAL HEATER	6.3 V / 600 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

9DX - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – 2K	B	K – Cathode	CONNECTED
PIN2 – 2G1	B	G1 – Control Grid	CONNECTED
PIN3 – 2P	B	P – Plate (Anode)	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – H	–	H – Heater	CONNECTED
PIN6 – 1G3	A	G3 – Suppressor Grid	CONNECTED
PIN6 – IS	A	IS – Internal Screen	CONNECTED
PIN6 – 1K	A	K – Cathode	CONNECTED
PIN7 – 1G1	A	G1 – Control Grid	CONNECTED
PIN8 – 1G2	A	G2 – Screen Grid	CONNECTED
PIN9 – 1P	A	P – Plate (Anode)	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	6700 Ω
TRANSCONDUCTANCE	0.0027 S
AMPLIFICATION FACTOR	18
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	2 W
MAXIMUM HEATER-CATHODE VOLTAGE	200 V
WARM-UP TIME	11 s
<i>Published promoted fields populated semantically; identical repeated sections compressed where applicable.</i>	

SECTION2 Pentode	
PLATE RESISTANCE	400000 Ω
TRANSCONDUCTANCE	0.009 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	3.25 W
MAXIMUM SCREEN DISSIPATION	1 W
MAXIMUM HEATER-CATHODE VOLTAGE	200 V
WARM-UP TIME	11 s
<i>Published promoted fields populated semantically; identical repeated sections compressed where applicable.</i>	

Medium-mu triode plus sharp-cutoff pentode for television video/AGC/reactance service and low-frequency oscillator/phase-splitter circuits.



SOURCE OPERATING CONDITIONS

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1950 Sylvania

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

1950 SYLVANIA

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage . 8.4 Volts	8.4 V	Heater Voltage . 8.4 Volts
Heater Current 600 450 Volts The 8BA8A is identical to the	8 A	Heater Current 600 450 Volts The 8BA8A is identical to the
Output: p to Ch + k) 1.9 0.4 uuf 23 Te;	0.4 pF	Output: p to Ch + k) 1.9 0.4 uuf 23 Te;
Output: p to (h+k+g2+g3+ 1.S.) . 4.5 3.6 uuf	3.6 pF	Output: p to (h+k+g2+g3+ 1.S.) . 4.5 3.6 uuf
Plate Voltage 200 200 Volts	200 V	Plate Voltage 200 200 Volts
Grid No. 2 Voltage 150 Volts	150 V	Grid No. 2 Voltage 150 Volts
Grid No. 1 Voltage -8 0 Volts	0 V	Grid No. 1 Voltage -8 0 Volts
Plate Current 8.0 13 Ma	13 mA	Plate Current 8.0 13 Ma
Transconductance 2700 9000 umhos	9000 umhos	Transconductance 2700 9000 umhos
Plate Resistance (approx.) . . Ce 6700 400,000 Ohms	400 Ohms	Plate Resistance (approx.) . . Ce 6700 400,000 Ohms
Grid No. 1 Voltage for Ib = 10 pa (approx) Co -16 -10 Volts	-10 V	Grid No. 1 Voltage for Ib = 10 pa (approx) Co -16 -10 Volts
Plate Current 42 Ma	42 mA	Plate Current 42 Ma

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No. 2 Current 12.5 Ma	12.5 mA	Grid No. 2 Current 12.5 Ma
GRID NO.2 VOLTAGE EXPRESSED AS PER CENT	2 V	GRID NO.2 VOLTAGE EXPRESSED AS PER CENT

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage . . . 300 300 Volts Max.	300 V	Plate Voltage . . . 300 300 Volts Max.
Grid No. 2 Supply Voltage . 300 Volts Max.	300 V	Grid No. 2 Supply Voltage . 300 Volts Max.
Grid No. 2 Voltage : . See Rating Chart	2 V	Grid No. 2 Voltage : . See Rating Chart
Plate Dissipation . . 2.0 3.25 Watts Max.	3.25 W	Plate Dissipation . . 2.0 3.25 Watts Max.
Grid No. 2 Dissipation . . . 1.0 Watt Max.	1 W	Grid No. 2 Dissipation . . . 1.0 Watt Max.
Negative Grid No. 1 Voltage . 50 Volts Max.	50 V	Negative Grid No. 1 Voltage . 50 Volts Max.
Positive Grid No. 1 Voltage 0 Volts Max.	0 V	Positive Grid No. 1 Voltage 0 Volts Max.



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SOURCE OPERATING CONDITIONS

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1961 Tung Sol

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1961 TUNG SOL
Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Warmup Time	11 s	—

1961 TUNG SOL

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PentodeTransconductance	9000 μS	Section2



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SOURCE OPERATING CONDITIONS

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1966 Tung Sol Electronic Tubes 1 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 1 OF 4

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	150 V	TriodeSection
Plate current	10 mA	TriodeSection

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	6000 Ω	TriodeSection
Transconductance	6500 μS	TriodeSection
Amplification factor	40	TriodeSection

1966 TUNG SOL ELECTRONIC TUBES 1 OF 4

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	125 V	PentodeSection
Screen voltage	125 V	PentodeSection
Plate current	12 mA	PentodeSection
Screen current	3.5 mA	PentodeSection

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	250000 Ω	PentodeSection
Transconductance	9000 μS	PentodeSection
Cutoff characteristic	Sharp	PentodeSection



SOURCE OPERATING CONDITIONS

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1971 RCA HB3 Binder 4 of 7

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1971 RCA HB3 BINDER 4 OF 7

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage ac or dc	6.3 V	Section1
Current	600 mA	Section1
Warmup time (Average)	11 s	Section1
PTate-Supply Voltage	65 V	Section1;PublishedColumn1
PTate-Supply Voltage	200 V	Section1;PublishedColumn2
Grid-No. Supply Voltage	150 V	Section1;PublishedColumn1
Grid-No.1 Voltage	0 V	Section1;PublishedColumn1
Cathode Resistor	180 ohm	Section1
(Approx.)	6700 ohm	Section1;PublishedColumn1
(Approx.)	400000 ohm	Section1;PublishedColumn2
Plate Current ' '	42 mA	Section1;PublishedColumn1
Plate Current ' '	13 mA	Section1;PublishedColumn2
Grid-No. Current - ' '	12.5 mA	Section1;PublishedColumn1
Grid-No. Current - ' '	3.5 mA	Section1;PublishedColumn2
current of μa	-16 V	Section1;PublishedColumn1
current of μa	-10 V	Section1;PublishedColumn2
PLATE VOLTAGE max. max	300 V	Section1;PublishedColumn1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
SUPPLY VOLTAGE - max	300 V	Section1
Negative bias value - max	50 V	Section1
Positive bias value - max	0 V	Section1
PLATE DISSIPATION max. max	2 W	Section1;PublishedColumn1
PLATE DISSIPATION max. max	3.25 W	Section1;PublishedColumn2
up to	150 V	Section1
respect to cathode. max. max,	200 V	Section1;PublishedColumn1
respect to cathode. max. max	200 V	Section1;PublishedColumn1
operation max. max	0.5 Mohm	Section1;PublishedColumn1
operation max. max	0.25 Mohm	Section1;PublishedColumn2
operation max. max	1 Mohm	Section1;PublishedColumn1
The do component must nat exceed	100 V	Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to plate	2.2 pF	Section1;PublishedColumn1
heater	2.5 pF	Section1;PublishedColumn1
heater	2.7 pF	Section1;PublishedColumn2
heater	0.4 pF	Section1;PublishedColumn1
heater	1.9 pF	Section1;PublishedColumn2
Grid No.1 to plate	0.04 pF	Section1;PublishedColumn1
Grid No.1 to plate	0.03 pF	Section1;PublishedColumn2
and heater	10 pF	Section1;PublishedColumn1
and heater	3.6 pF	Section1;PublishedColumn1
and heater	4.5 pF	Section1;PublishedColumn2
plate	0.016 pF	Section1;PublishedColumn1
plate	0.006 pF	Section1;PublishedColumn2
triode plate	0.006 pF	Section1;PublishedColumn1
triode plate	0.003 pF	Section1;PublishedColumn2
triode plate	0.15 pF	Section1;PublishedColumn1
triode plate	0.023 pF	Section1;PublishedColumn2

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage ac or dc	6.3 V	Section2
Current	600 mA	Section2
Warmup time (Average)	11 s	Section2
PTate-Supply Voltage	65 V	Section2;PublishedColumn1
PTate-Supply Voltage	200 V	Section2;PublishedColumn2
Grid-No. Supply Voltage	150 V	Section2;PublishedColumn1
Grid-No.1 Voltage	0 V	Section2;PublishedColumn1
Cathode Resistor	180 ohm	Section2
(Approx.)	6700 ohm	Section2;PublishedColumn1
(Approx.)	400000 ohm	Section2;PublishedColumn2
Plate Current '1	42 mA	Section2;PublishedColumn1
Plate Current '2	13 mA	Section2;PublishedColumn2
Grid-No. Current - '1	12.5 mA	Section2;PublishedColumn1
Grid-No. Current - '2	3.5 mA	Section2;PublishedColumn2
current of μ a	-16 V	Section2;PublishedColumn1
current of μ a	-10 V	Section2;PublishedColumn2
PLATE VOLTAGE max. max	300 V	Section2;PublishedColumn1
SUPPLY VOLTAGE - max	300 V	Section2
Negative bias value - max	50 V	Section2
Positive bias value - max	0 V	Section2
PLATE DISSIPATION max. max	2 W	Section2;PublishedColumn1
PLATE DISSIPATION max. max	3.25 W	Section2;PublishedColumn2
up to	150 V	Section2
respect to cathode. max. max,	200 V	Section2;PublishedColumn1
respect to cathode. max. max	200 V	Section2;PublishedColumn1
operation max. max	0.5 Mohm	Section2;PublishedColumn1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to plate	2.2 pF	Section2;PublishedColumn1
heater	2.5 pF	Section2;PublishedColumn1
heater	2.7 pF	Section2;PublishedColumn2
heater	0.4 pF	Section2;PublishedColumn1
heater	1.9 pF	Section2;PublishedColumn2
Grid No.1 to plate	0.04 pF	Section2;PublishedColumn1
Grid No.1 to plate	0.03 pF	Section2;PublishedColumn2
and heater	10 pF	Section2;PublishedColumn1
and heater	3.6 pF	Section2;PublishedColumn1
and heater	4.5 pF	Section2;PublishedColumn2
plate	0.016 pF	Section2;PublishedColumn1
plate	0.006 pF	Section2;PublishedColumn2
triode plate	0.006 pF	Section2;PublishedColumn1
triode plate	0.003 pF	Section2;PublishedColumn2
triode plate	0.15 pF	Section2;PublishedColumn1
triode plate	0.023 pF	Section2;PublishedColumn2


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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 6.3	8.4 V	Published in approved 8BA8A target datasheet entry; Section1
Heater Current 0.3	450 mA	Published in approved 8BA8A target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Warm-up Time (Average)	11 seconds	Published in approved 8BA8A target datasheet entry; Section1
Pentode Plate to Triode Plate 0.15	0.023 pF	Published in approved 8BA8A target datasheet entry; Section1
Plate Voltage 300	300 V	Published in approved 8BA8A target datasheet entry; Section1
Grid-No.2 (Screen-Grid) Supply Voltage	300 V	Published in approved 8BA8A target datasheet entry; Section1
Negative-bias value	-60 V	Published in approved 8BA8A target datasheet entry; Section1
Positive-bias value	0 V	Published in approved 8BA8A target datasheet entry; Section1
For grid-No.2 voltages up to	150 V	Published in approved 8BA8A target datasheet entry; Section1
For grid-No.2 voltages up to 150 volts	1 W	Published in approved 8BA8A target datasheet entry; Section1
For grid-No.2 voltages between 150 and	300 V	Published in approved 8BA8A target datasheet entry; Section1
Plate-Supply Voltage 200	200 V	Published in approved 8BA8A target datasheet entry; Section1
For fixed-bias operation 0.5	0.25 MΩ	Published in approved 8BA8A target datasheet entry; Section1
For cathode-bias operation 1	1 MΩ	Published in approved 8BA8A target datasheet entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate 2.2	2.2 pF	Published in approved 8BA8A target datasheet entry; Section1
Grid to Cathode and Heater 2.5	2.7 pF	Published in approved 8BA8A target datasheet entry; Section1
Plate to Cathode and Heater 0.4	1.9 pF	Published in approved 8BA8A target datasheet entry; Section1
Grid No.1 to Plate 0.06	0.05 pF	Published in approved 8BA8A target datasheet entry; Section1
No.3. and Internal Shield 10	10 pF	Published in approved 8BA8A target datasheet entry; Section1
and Internal Shield 3.6 4	5 pF	Published in approved 8BA8A target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode Grid to Pentode Plate 0.016	0.006 pF	Published in approved 8BA8A target datasheet entry; Section1
Pentode Grid No.1 to Triode Plate 0.006	0.003 pF	Published in approved 8BA8A target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.2 Supply Voltage	150 V	Published in approved 8BA8A target datasheet entry; Section1
Grid-No.1 Voltage	-8 V	Published in approved 8BA8A target datasheet entry; Section1
Cathode-Bias Resistor	180 Ω	Published in approved 8BA8A target datasheet entry; Section1
Plate Resistance (Approx.) 6700	400000 Ω	Published in approved 8BA8A target datasheet entry; Section1
Plate Current 8	13 mA	Published in approved 8BA8A target datasheet entry; Section1
Grid-No.2 Current	3.5 mA	Published in approved 8BA8A target datasheet entry; Section1
10 n A -16	-10 V	Published in approved 8BA8A target datasheet entry; Section1

1975 RCA RC30

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 6.3	8.4 V	Published in approved 8BA8A target datasheet entry; Section2
Heater Current 0.3	450 mA	Published in approved 8BA8A target datasheet entry; Section2
Heater Warm-up Time (Average)	11 seconds	Published in approved 8BA8A target datasheet entry; Section2
Pentode Plate to Triode Plate 0.15	0.023 pF	Published in approved 8BA8A target datasheet entry; Section2
Plate Voltage 300	300 V	Published in approved 8BA8A target datasheet entry; Section2
Grid-No.2 (Screen-Grid) Supply Voltage	300 V	Published in approved 8BA8A target datasheet entry; Section2
Negative-bias value	-60 V	Published in approved 8BA8A target datasheet entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Positive-bias value	0 V	Published in approved 8BA8A target datasheet entry; Section2
For grid-No.2 voltages up to	150 V	Published in approved 8BA8A target datasheet entry; Section2
For grid-No.2 voltages up to 150 volts	1 W	Published in approved 8BA8A target datasheet entry; Section2
For grid-No.2 voltages between 150 and	300 V	Published in approved 8BA8A target datasheet entry; Section2
Plate-Supply Voltage 200	200 V	Published in approved 8BA8A target datasheet entry; Section2
For fixed-bias operation 0.5	0.25 MΩ	Published in approved 8BA8A target datasheet entry; Section2
For cathode-bias operation 1	1 MΩ	Published in approved 8BA8A target datasheet entry; Section2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate 2.2	2.2 pF	Published in approved 8BA8A target datasheet entry; Section2
Grid to Cathode and Heater 2.5	2.7 pF	Published in approved 8BA8A target datasheet entry; Section2
Plate to Cathode and Heater 0.4	1.9 pF	Published in approved 8BA8A target datasheet entry; Section2
Grid No.1 to Plate 0.06	0.05 pF	Published in approved 8BA8A target datasheet entry; Section2
No.3. and Internal Shield 10	10 pF	Published in approved 8BA8A target datasheet entry; Section2
and Internal Shield 3.6 4	5 pF	Published in approved 8BA8A target datasheet entry; Section2
Triode Grid to Pentode Plate 0.016	0.006 pF	Published in approved 8BA8A target datasheet entry; Section2
Pentode Grid No.1 to Triode Plate 0.006	0.003 pF	Published in approved 8BA8A target datasheet entry; Section2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.2 Supply Voltage	150 V	Published in approved 8BA8A target datasheet entry; Section2
Grid-No.1 Voltage	-8 V	Published in approved 8BA8A target datasheet entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode-Bias Resistor	180 Ω	Published in approved 8BA8A target datasheet entry; Section2
Plate Resistance (Approx.) 6700	400000 Ω	Published in approved 8BA8A target datasheet entry; Section2
Plate Current 8	13 mA	Published in approved 8BA8A target datasheet entry; Section2
Grid-No.2 Current	3.5 mA	Published in approved 8BA8A target datasheet entry; Section2
10 n A -16	-10 V	Published in approved 8BA8A target datasheet entry; Section2

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