

ELECTRONIC TUBE REFERENCE

12AU7A

Voltage - Dual Triode (similar) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

TRIODE-TRIODE

Controlled-warm-up medium-mu twin triode documented for AF preamplifier service, combining moderate voltage gain with relatively low plate resistance and useful current-driving capability.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9A	BASE PINS	9
NOMINAL HEATER	12.6 V / 150 mA	PARALLEL HEATER	6.3 V / 300 mA
HEATING	Indirect	SERIES OPERATION	Capable
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

9A - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – 2P	B	P – Plate (Anode)	CONNECTED
PIN2 – 2G1	B	G1 – Control Grid	CONNECTED
PIN3 – 2K	B	K – Cathode	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – H	–	H – Heater	CONNECTED
PIN6 – 1P	A	P – Plate (Anode)	CONNECTED
PIN7 – 1G1	A	G1 – Control Grid	CONNECTED
PIN8 – 1K	A	K – Cathode	CONNECTED
PIN9 – HCT	–	HCT – Heater Center Tap	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	7700 Ω
TRANSCONDUCTANCE	0.0022 S
AMPLIFICATION FACTOR	17
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	2.75 W
MAXIMUM CATHODE CURRENT	22 mA
<i>Each identical triode section.</i>	

SECTION2 Triode	
PLATE RESISTANCE	7700 Ω
TRANSCONDUCTANCE	0.0022 S
AMPLIFICATION FACTOR	17
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	2.75 W
MAXIMUM CATHODE CURRENT	22 mA
<i>Published promoted values applied where semantically applicable; additional table values retained in section parameters.</i>	

Twin triode with separate cathodes for AF preamplifier service; source also designates ECC82.



SOURCE OPERATING CONDITIONS

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1960 RCA Industrial and Communications Types

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

1960 RCA INDUSTRIAL AND COMMUNICATIONS TYPES

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterOrFilamentVoltage	12.6 V	—
HeaterOrFilamentCurrent	150 mA	—



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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	7700 ohm	AlternateOperatingPoint
Transconductance	2200 uS	AlternateOperatingPoint



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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	12.6 V	—
Heater Current	150 mA	—
Plate Current	10.5 mA	—
Plate Resistance	7700 ohm	—
Transconductance	2200 uS	—
Amplification Factor	17	—
Grid To Plate Capacitance	2.4 pF	—
Input Capacitance	3.3 pF	—
Output Capacitance	0.5 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	EachUnit
Grid Voltage	-8.5 V	EachUnit



SOURCE DATA APPENDIX

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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	ClassA;EachSection

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	10.5 mA	ClassA;EachSection
Grid voltage	-24 V	ClassA;EachSection
Heater warm-up time	11 s	BothSections

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	7700 ohm	ClassA;EachSection
Transconductance	2200 uS	ClassA;EachSection
Amplification factor	17	ClassA;EachSection

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	1.7 pF	EachSection
Input capacitance	1.8 pF	EachSection
Output capacitance	1.8 pF	EachSection


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SOURCE OPERATING CONDITIONS

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1968 General Electric Co

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1968 GENERAL ELECTRIC CO

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	EachSection
Amplification Factor	17	EachSection
Plate Resistance	7700 ohm	EachSection
Transconductance	2200 uS	EachSection


SOURCE DATA APPENDIX

1968 Mazda Belvu

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

1968 MAZDA BELVU
Section 1 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	AF_Preamplifier text	—



SOURCE DATA APPENDIX

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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Nominal
Heater current	300 mA	Nominal
Heater voltage series	12.6 V	Series
Heater current series	150 mA	Series
Heater voltage parallel	6.3 V	Parallel
Heater current parallel	300 mA	Parallel
Maximum plate voltage	330 V	Promoted published value
Maximum plate dissipation	3 W	Promoted published value
PLATE VOLTAGE	330 V	Maximum RatingsE Design-Maximum Values:
PLATE DISSIPATION	3 W	Maximum RatingsE Design-Maximum Values:
to cathode	200 V	Maximum RatingsE Design-Maximum Values:
For cathode-bias operation	1 megohm	Maximum RatingsE Design-Maximum Values:

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	7700 ohm	Promoted published value
Transconductance	2200 uS	Promoted published value
Amplification factor	17	Promoted published value
Voltage	20 V	—
Plate Voltage	250 V	—
Grid Voltage	8.5 V	—
Amplification Factor	17 A	—
Plate Resistance (Approx.)	7700 ohm	—
Transconductance	2200 uS	—
Plate Current	10.5 mA	—
Grid Voltage (Approx.) for plate μ =	24 V	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage series	12.6 V	SeriesHeater
Heater current series	150 mA	SeriesHeater
Heater voltage parallel	6.3 V	ParallelHeater
Heater current parallel	300 mA	ParallelHeater
Plate voltage	100 V	ClassA1;PublishedPoint1
Plate voltage	250 V	ClassA1;PublishedPoint2
Grid voltage	0 V	ClassA1;PublishedPoint1
Grid voltage	-8.5 V	ClassA1;PublishedPoint2
Amplification factor	19.5	ClassA1;PublishedPoint1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	17	ClassA1;PublishedPoint2
Plate resistance	6250 ohm	ClassA1;PublishedPoint1
Plate resistance	7700 ohm	ClassA1;PublishedPoint2
Transconductance	3100 μ S	ClassA1;PublishedPoint1
Transconductance	2200 μ S	ClassA1;PublishedPoint2
Plate current	11.8 mA	ClassA1;PublishedPoint1
Plate current	10.5 mA	ClassA1;PublishedPoint2

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	330 V	ClassA1
Maximum cathode current	22 mA	ClassA1
Maximum plate dissipation	2.75 W	ClassA1
Peak heater-cathode voltage	200 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	1.5 pF	—
Grid-to-cathode-and-heater capacitance	1.6 pF	—
Plate-to-cathode-and-heater capacitance	0.5 pF	—

1971 RCA HB3 BINDER 5 OF 7

Section 2 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage series	12.6 V	SeriesHeater
Heater current series	150 mA	SeriesHeater
Heater voltage parallel	6.3 V	ParallelHeater
Heater current parallel	300 mA	ParallelHeater
Plate voltage	100 V	ClassA1;PublishedPoint1
Plate voltage	250 V	ClassA1;PublishedPoint2
Grid voltage	0 V	ClassA1;PublishedPoint1
Grid voltage	-8.5 V	ClassA1;PublishedPoint2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	19.5	ClassA1;PublishedPoint1
Amplification factor	17	ClassA1;PublishedPoint2
Plate resistance	6250 ohm	ClassA1;PublishedPoint1
Plate resistance	7700 ohm	ClassA1;PublishedPoint2
Transconductance	3100 μ S	ClassA1;PublishedPoint1
Transconductance	2200 μ S	ClassA1;PublishedPoint2
Plate current	11.8 mA	ClassA1;PublishedPoint1
Plate current	10.5 mA	ClassA1;PublishedPoint2

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	330 V	ClassA1
Maximum cathode current	22 mA	ClassA1
Maximum plate dissipation	2.75 W	ClassA1
Peak heater-cathode voltage	200 V	—
Peak negative-pulse grid voltage	660 V	HorizontalDeflectionOscillator
Peak cathode current	330 mA	HorizontalDeflectionOscillator
Peak negative-pulse grid voltage	440 V	VerticalDeflectionOscillator
Peak cathode current	66 mA	VerticalDeflectionOscillator
Peak positive-pulse plate voltage	1200 V	VerticalDeflectionAmplifier

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	1.5 pF	—
Grid-to-cathode-and-heater capacitance	1.6 pF	—
Plate-to-cathode-and-heater capacitance	0.35 pF	—



SOURCE DATA APPENDIX

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
Plate Supply Voltage 100	250 V	Published in approved ECC82 target datasheet entry; Section1
Cathode-Bias Resistor 270	200 Ω	Published in approved ECC82 target datasheet entry; Section1
Plate Resistance (Approx.) 15000	10900 Ω	Published in approved ECC82 target datasheet entry; Section1
Transconductance 4000	5500 μS	Published in approved ECC82 target datasheet entry; Section1
Grid Voltage (Approx.) for plate current of 10 /iA −5	12 V	Published in approved ECC82 target datasheet entry; Section1
Plate Current 3.7	10 mA	Published in approved ECC82 target datasheet entry; Section1
Series 7 9.4	12.6 V	Published in approved ECC82 target datasheet entry; Section1
Parallel 3.5 4.7	6.3 V	Published in approved ECC82 target datasheet entry; Section1
Series 0.3 0.225	150 mA	Published in approved ECC82 target datasheet entry; Section1
Parallel 0.6 0.45	300 mA	Published in approved ECC82 target datasheet entry; Section1
Heater Warm-up Time (Parallel, Average) 11	11 seconds	Published in approved ECC82 target datasheet entry; Section1
Plate Voltage	330 V	Published in approved ECC82 target datasheet entry; Section1
Cathode Current	22 mA	Published in approved ECC82 target datasheet entry; Section1
Each Plate	2.75 W	Published in approved ECC82 target datasheet entry; Section1
Both Plates (Both units operating)	5.5 W	Published in approved ECC82 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance (Approx.) 6250	7700 Ω	Published in approved ECC82 target datasheet entry; Section1
Transconductance 3100	2200 μS	Published in approved ECC82 target datasheet entry; Section1
For fixed-bias operation	0.25 M Ω	Published in approved ECC82 target datasheet entry; Section1
For cathode-bias operation	1 M Ω	Published in approved ECC82 target datasheet entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate 1.5	1.5 pF	Published in approved ECC82 target datasheet entry; Section1
Grid to Cathode and Heater 1.6	1.6 pF	Published in approved ECC82 target datasheet entry; Section1
Plate to Cathode and Heater 0.5	0.35 pF	Published in approved ECC82 target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current 11.8	10.5 mA	Published in approved ECC82 target datasheet entry; Section1



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

2026 Electro Harmonix Gold

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

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2026 ELECTRO HARMONIX GOLD

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	7.5–13.5 mA	Plate 250 V; Grid -8.5 V

TUBE TINKER

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