

ELECTRONIC TUBE REFERENCE

12AY7

Voltage - Dual Triode (similar) electronic tube

CONSOLIDATED TECHNICAL DATA
2 SECTIONS
CONSTRUCTION
TRIODE-TRIODE

Medium-high-mu twin triode designed especially for low-noise voltage amplification, widely suited to low-level audio and other resistance-coupled amplifier stages.

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	25000 Ω
TRANSCONDUCTANCE	0.00175 S
AMPLIFICATION FACTOR	44
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	1.5 W
MAXIMUM CATHODE CURRENT	10 mA
<i>Each identical triode section.</i>	

SECTION2 Triode	
PLATE RESISTANCE	25000 Ω
TRANSCONDUCTANCE	0.00175 S
AMPLIFICATION FACTOR	44
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	1.5 W
MAXIMUM CATHODE CURRENT	10 mA
<i>Second physical triode section; electrically identical twin section.</i>	

Miniature type used in the first stages of high-gain audio-frequency amplifiers. Outlines section, 6B; requires miniature 9-contact socket. Each triode unit is independent of the other except for the common heater. Use of the 12.6-volt connection with an ac heater supply is not recommended for applications involving low PT 2 Hm hum. For typical operation as a resistance-coupled amplifier, refer to Resistance-Coupled Amplifier section. Heater Arrangement: Series Parallel



SOURCE OPERATING CONDITIONS

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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

OTHER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	—

CHARACTERISTIC

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	3 mA	—



SOURCE OPERATING CONDITIONS

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1966 Tung Sol Electronic Tubes 2 of 4

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1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

Section 1 · Triode

CAPACITANCE

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
GRID TO PLATE; (G TO P)	1.3 pF	Published datasheet
INPUT: G TO (H)K)	1.3 pF	Published datasheet

CHARACTERISTIC

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HEATER VOLTAGE	12.6 V	Published datasheet; operating column 1
HEATER VOLTAGE	6.3 V	Published datasheet; operating column 2
HEATER CURRENT	150 mA	Published datasheet; operating column 1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HEATER CURRENT	300 mA	Published datasheet; operating column 2
PLATE VOLTAGE	250 V	Published datasheet
GRID VOLTAGE	-4 V	Published datasheet
PLATE CURRENT	3 mA	Published datasheet
PLATE RESISTANCE (APPROX.)	25 ohm	Published datasheet; operating column 1
PLATE RESISTANCE (APPROX.)	0 ohm	Published datasheet; operating column 2
Plate resistance	25000 ohm	Published datasheet; promoted section value
Transconductance	0.00175 A/V	Published datasheet; promoted section value
Amplification factor	44	Published datasheet; promoted section value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
MAXIMUM DC HEATER-CATHODE VOLTAGE	90 V	Published datasheet
MAXIMUM PLATE DISSIPATION	1.5 W	Published datasheet
MAXIMUM CATHODE CURRENT	10 mA	Published datasheet
HEATER SUPPLY VOLTAGE	150 V	Published datasheet
PLATE LOAD RESISTOR	20 ohm	Published datasheet; operating column 1
PLATE LOAD RESISTOR	0 ohm	Published datasheet; operating column 2
CATHODE RESISTOR	2 ohm	Published datasheet; operating column 1
CATHODE RESISTOR	700 ohm	Published datasheet; operating column 2
CATHODE RESISTOR	0 ohm	Published datasheet; operating column 3



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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	44	EachSection
Plate Resistance	25000 ohm	EachSection
Transconductance	1760 uS	EachSection

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Cathode Current	10 mA	EachSection



SOURCE OPERATING CONDITIONS

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1971 RCA HB3 Binder 5 of 7

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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	250 V	ClassA1
Grid voltage	-4 V	ClassA1
Amplification factor	40	ClassA1
Plate resistance	22800 ohm	ClassA1
Transconductance	1750 uS	ClassA1
Plate current	3 mA	ClassA1
Grid voltage at plate current 10 uA	-11 V	ClassA1

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	300 V	ClassA1
Maximum negative grid bias	50 V	ClassA1
Maximum plate dissipation	1.5 W	ClassA1
Maximum cathode current	10 mA	ClassA1
Peak heater-cathode voltage	90 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	1.3 pF	—
Input capacitance	1.3 pF	—
Output capacitance	0.6 pF	—



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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
connection),	6.3 volts	Published value from supplied target entry
9A plifier, refer to Resistance-Coupled Amplifier section.	9	Published value from supplied target entry
Heater Voltage (ac/dc)	6.3 volts	Published value from supplied target entry
Heater Current	0.3 ampere	Published value from supplied target entry
Plate Voltage	300 volts	Published value from supplied target entry
Cathode Current	10 mA	Published value from supplied target entry
Plate Dissipation	1.5 watts	Published value from supplied target entry
Plate Voltage	250 volts	Published value from supplied target entry
Plate Resistance	22800 ohms	Published value from supplied target entry

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	1750	Published value from supplied target entry
Plate Current	3 mA	Published value from supplied target entry
Grid Voltage (Approx.) for plate current of	11 mA	Published value from supplied target entry

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
100- μ F capacitor ; grid resistor, 0 ohms ; and amplifier covering frequency range between	0 ohms	Published value from supplied target entry
Grid to Plate	1.3 pF	Published value from supplied target entry
Grid to Cathode and Heater	1.3 pF	Published value from supplied target entry
Plate to Cathode and Heater	0.6 pF	Published value from supplied target entry

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PT	2	Published value from supplied target entry
Peak Heater-Cathode Voltage $\pm$	90 volts	Published value from supplied target entry



SOURCE OPERATING CONDITIONS

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2026 JJ Electronic

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2026 JJ ELECTRONIC

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ua	250 V	Published value
Ia	3 mA	Published value
f μ	40	Published value
Ua	300 V	Published value
Ug	-50 V	Published value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Wa	1.5 W	Published value
Ik	10 mA	Published value

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
cg/k	1.6	Published value
ca	0.33	Published value
cg/a	1.7	Published value

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