

ELECTRONIC TUBE REFERENCE

ECC81

Voltage - Dual Triode (similar high frequency) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

TRIODE-TRIODE

Medium-mu twin triode for oscillator and AF/RF amplifier service, widely suited to high-frequency amplification, frequency generation, and general voltage-amplifier applications.

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	11000 Ω
TRANSCONDUCTANCE	0.0055 S
AMPLIFICATION FACTOR	60
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM CATHODE CURRENT	15 mA
<i>A.F. double triode with 6.3/12.6 V series-parallel heater arrangement.</i>	

SECTION2 Triode	
PLATE RESISTANCE	11000 Ω
TRANSCONDUCTANCE	0.0055 S
AMPLIFICATION FACTOR	60
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM CATHODE CURRENT	15 mA
<i>Second physical triode restored.</i>	

Twin triode for oscillator and AF/RF amplifier service; source also designates ECC81.



SOURCE OPERATING CONDITIONS

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1951 Philips Receiving Tubes for Television

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

1951 PHILIPS RECEIVING TUBES FOR TELEVISION

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode Voltage	170 V	Each section
Anode Current	10 mA	Each section
Transconductance	6000 μ S	AnodeVoltage=170V
Amplification Factor	62 ratio	AnodeVoltage=170V
Anode Voltage	250 V	Each section
Anode Current	10 mA	Each section
Transconductance	4900 μ S	AnodeVoltage=250V
Amplification Factor	43 ratio	AnodeVoltage=250V

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Anode Voltage at Zero Current	550 V	Each section



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1953 RFT Rundfunk Technik

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1953 RFT RUNDFUNK TECHNIK

Section 1 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	VoltageAmplifier text	—



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1958 Amperex Industrial

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1958 AMPEREX INDUSTRIAL

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	Published table
Plate current	10 mA	Published table
Control-grid bias	-2 V	VoltageAmplifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5500 μ S	Published table
Amplification factor	55	Published table
Heater/filament voltage	6.3 V	Published rating
Heater/filament current	300 mA	Published rating
Series heater voltage	12.6 V	SeriesHeater
Series heater current	150 mA	SeriesHeater



1961 Ferranti Technical Handbook

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1961 FERRANTI TECHNICAL HANDBOOK

Section 1 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	RF amplifier / frequency changer	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum intended frequency	300 MHz	—



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1963 Amperex Condensed

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1963 AMPEREX CONDENSED

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	300 mA	Published heater rating
Amplification factor	55	VoltageAmplifier
Transconductance	5500 μ S	VoltageAmplifier
Series heater voltage	12.6 V	SeriesHeater
Series heater current	150 mA	SeriesHeater

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	VoltageAmplifier
Control-grid bias	-2 V	VoltageAmplifier

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	10 mA	VoltageAmplifier


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1963 Philips Electron Tubes Handbook V1a

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1963 PHILIPS ELECTRON TUBES HANDBOOK V1A

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	—
Plate current	8.5 mA	—
Maximum plate voltage	300 V	—
Maximum plate dissipation	2.5 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5900 μ S	—
Amplification factor	66	—
Plate resistance	11 kohm	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid capacitance	2.3 pF	—
Plate capacitance	0.45 pF	—
Grid-plate capacitance	1.6 pF	—


SOURCE DATA APPENDIX

1967 Mullard Receiving and Amplifying Valves

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1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	3 mA	EachSection;Va=100V
Transconductance	3750 uS	EachSection;Va=100V
Amplification Factor	62	EachSection;Va=100V
Plate Resistance	16500 ohm	EachSection;Va=100V
Plate Current	8.5 mA	EachSection;Va=170V
Transconductance	5900 uS	EachSection;Va=170V
Amplification Factor	66	EachSection;Va=170V
Plate Resistance	11000 ohm	EachSection;Va=170V
Plate Current	11.5 mA	EachSection;Va=200V
Transconductance	6700 uS	EachSection;Va=200V
Amplification Factor	70	EachSection;Va=200V



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1968 Mazda Belvu

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1968 MAZDA BELVU

Section 1 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Oscillator_RF_AF_Amplifier text	—

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1972 Philips Receiving Tubes

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1972 PHILIPS RECEIVING TUBES

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current I	10 mA	—
Transconductance S	5.5 mA/V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to all except anode C _{gla})	2.3 pF	—
C _g '(a')	2.3 pF	—
Anode to all except grid C _{a(g)}	0.45 pF	—
Anode to grid C _{ag}	1.6 pF	—
C _a 'g'	1.6 pF	—
Anode to cathode C _{ak}	0.2 pF	—
C _a 'k'	0.2 pF	—
Cathode to heater C _{xf}	2.5 pF	—
C _k 'f	2.5 pF	—

SOURCE OPERATING CONDITIONS

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1973 Mazda Valves Binder 2

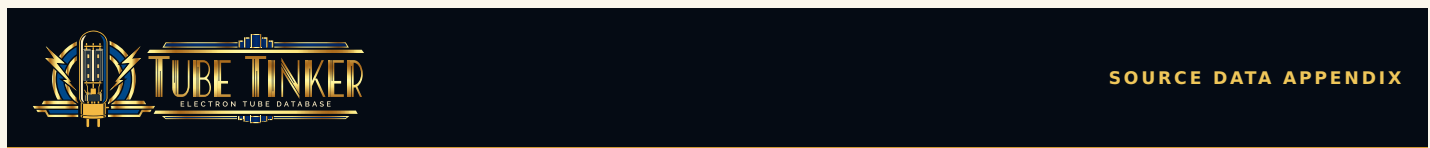
Published test conditions and operating points. Values on this page are preserved as reported by this source.

1973 MAZDA VALVES BINDER 2

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Plate Dissipation	2.5 W	—
Maximum Cathode Current	20 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5500 μ S	Typical
Amplification Factor	55	Typical
Plate Resistance	10000 ohm	Typical



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) 12.6	6.3 V	Published in approved ECC81 target datasheet entry; Section1
Heater Current 0.15	300 mA	Published in approved ECC81 target datasheet entry; Section1
Plate Voltage	300 V	Published in approved ECC81 target datasheet entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Cathode and Heater (Each unit)	2.2 pF	Published in approved ECC81 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Unit No.1	0.5 pF	Published in approved ECC81 target datasheet entry; Section1
Unit No.2	0.4 pF	Published in approved ECC81 target datasheet entry; Section1
Cathode to Plate (Each unit)	0.2 pF	Published in approved ECC81 target datasheet entry; Section1
Cathode to Grid and Heater (Each unit)	4.6 pF	Published in approved ECC81 target datasheet entry; Section1
Plate to Grid and Heater (Each unit)	1.8 pF	Published in approved ECC81 target datasheet entry; Section1
Heater to Cathode (Each Unit)	2.4 pF	Published in approved ECC81 target datasheet entry; Section1


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1999 Philips E-Z

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1999 PHILIPS E-Z

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
1) In case of series supply & current-limiting device	1 V	1) In case of series supply & current-limiting device


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199X JJ

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

199X JJ

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical Plate Voltage	250 V	—
TypicalGridVoltage	-2 V	—
Typical Plate Current	10 mA	—



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2026 Genalex Rebrand

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2026 GENALEX REBRAND

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	4500–6500 μS	Plate 250 V; grid -2 V
Plate Current	9–12 mA	Plate 250 V; grid -2 V



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2026 JJ Electronic

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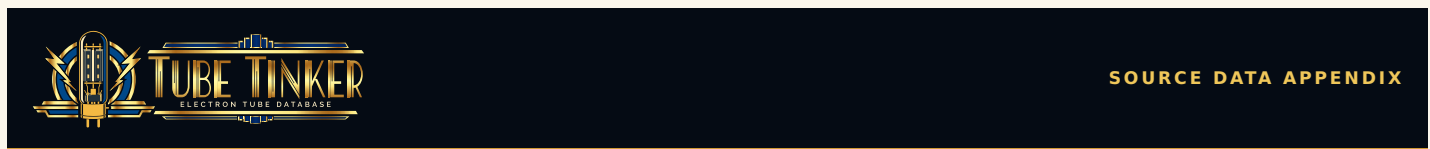
2026 JJ ELECTRONIC

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ua	250 V	Published value
Ia	10 mA	Published value
Ug	-2 V	Published value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
S	5500 μ S	Published value
μ	60	Published value
Ri	11 k Ω	Published value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ua	300 V	Published value
Wa	2.5 W	Published value
Ik	15 mA	Published value
Ug	-50 V	Published value
Uk/f	90 V	Published value



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2026 Mullard Rebrand

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

2026 MULLARD REBRAND Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater current at 6.3 V	350–390 mA	Published min/max range
Heater current at 12.6 V	175–195 mA	Published min/max range

TUBE TINKER

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