

ECL80

Voltage Triode Pentode electronic tube

Triode-pentode for television synchronization, oscillator, mixer, and low-power amplifier circuits.

GENERAL CHARACTERISTICS

BASE DESIGNATION	B9A	BASE PINS	9
NOMINAL HEATER	6.3 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Common cathode	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	150000 Ω
TRANSCONDUCTANCE	0.0033 S
AMPLIFICATION FACTOR	14
MAXIMUM PLATE VOLTAGE	400 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	3.5 W
MAXIMUM SCREEN DISSIPATION	1.2 W
MAXIMUM CATHODE CURRENT	25 mA
Pentode section; values semantically promoted from published characteristics/maximum-ratings tables where present.	

SECTION2 Triode	
PLATE RESISTANCE	12500 Ω
TRANSCONDUCTANCE	0.0019 S
AMPLIFICATION FACTOR	17.5
MAXIMUM PLATE VOLTAGE	200 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	8 mA
<i>Triode section; values semantically promoted from published characteristics/maximum-ratings tables where present.</i>	

Triode-pentode for television sync, oscillator, mixer, and low-power amplifier circuits.



SOURCE OPERATING CONDITIONS

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1951 Mullard Valve and Service Manual

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

1951 MULLARD VALVE AND SERVICE MANUAL

Section 1 · Pentode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Service	Output pentode	—

1951 MULLARD VALVE AND SERVICE MANUAL

Section 2 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Service	Oscillator / voltage amplifier	—



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1951 Philips Receiving Tubes for Television

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1951 PHILIPS RECEIVING TUBES FOR TELEVISION

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode Voltage	200 V	SoundOutput
Screen Voltage	200 V	SoundOutput
Anode Current	17.5 mA	SoundOutput
Screen Current	3.3 mA	SoundOutput
Matching Resistance	11000 ohm	SoundOutput
Power Output	1.4 W	SoundOutput

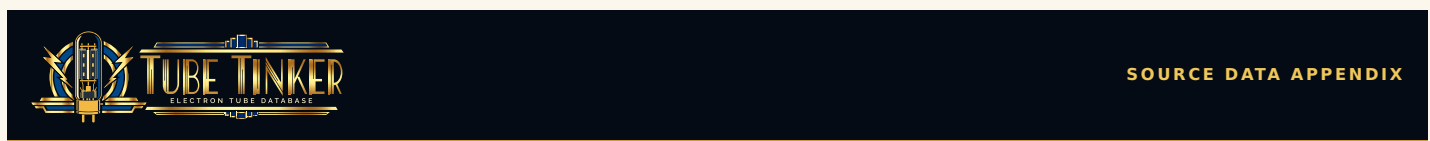
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Positive Peak Anode Voltage	1200 V	PulseDuration<=2ms
Negative Peak Anode Voltage	500 V	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	3300 uS	AnodeVoltage=200V

1951 PHILIPS RECEIVING TUBES FOR TELEVISION

Section 2 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode Voltage	100 V	—
Anode Current	8 mA	—
Transconductance	1900 uS	—



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1953 La Radiotechnique

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1953 LA RADIOTECHNIQUE

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Alimentation du filament en serie ou en parallele. ' If	300 mA	Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Haute tension	250 V	Pentode
Tension de l'anode	2560 V	Pentode
Tension de la grille 2	200 V	Pentode
grille 2	4.7 kohm	Pentode
Tension de la grille 1	122 V	Pentode
Courant anodique	14 mA	Pentode
Courant de la grille 2	256 mA	Pentode

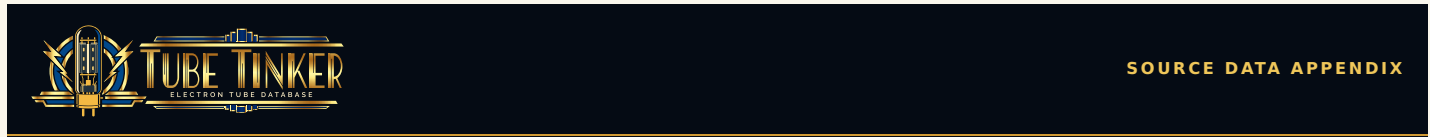
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Impedance de charge	18 kohm	Pentode
Puissance de sortie	1.555 W	Pentode
Tension d'entree	5.3 V	Pentode
Tension de l'anode	20 V	Pentode
Tension de la grille 3	0 V	Pentode
Tension de la grille 2	12 V	Pentode
Tension de la grille 1	1.45 V	Pentode
Courant anodique	1 mA	Pentode
Capacite de la grille 1	4.9 pF	Pentode
Capacite anode-grille 1	0.2 pF	Pentode
Courant cathodique	25 mA	Pentode
Resistance du circuit de la grille 1	1 Mohm	Pentode
– 50 V et Vg»	26 mA	Pentode
Vap – 60 V et Vg, – 200 V la crete < 31 mA	31 mA	Pentode
Vap – 70 V et Vg, – 250 V la crete < 42 mA	42 mA	Pentode

1953 LA RADIOTECHNIQUE

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension de l'anode	100 V	Triode
Tension de la grille	23 V	Triode
Courant anodique	4 mA	Triode
Puissance dissipee sur l'anode	1 W	Triode
Courant cathodique	8 mA	Triode
Resistance du cireuit de la grille	1 Mohm	Triode
Resistance entre filament et cathode	20 kohm	Triode
Tension entre filament et cathode	150 V	Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Capacite de la grille	3.3 pF	Triode
Capacite de l'anode	3.3 pF	Triode
Capacite anode-grille	0.9 pF	Triode



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1958 Brimar Radio Valve No 7

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1958 BRIMAR RADIO VALVE NO 7

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	FrameOutputSyncSeparatorOrAudioOutput	—

1958 BRIMAR RADIO VALVE NO 7

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	300 mA	—
Application	FrameBlockingOscillatorOrAFAmplifier	—



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1961 Ferranti Technical Handbook

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

1961 FERRANTI TECHNICAL HANDBOOK

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Frame output sync separator audio output	—

1961 FERRANTI TECHNICAL HANDBOOK

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	300 mA	—
Application	Frame blocking oscillator line blocking oscillator audio voltage amplifier	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1963 Philips Electron Tubes Handbook V1a

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1963 PHILIPS ELECTRON TUBES HANDBOOK V1A

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	300 mA	Published heater rating
Triode transconductance	1900 μ S	TriodeSection
Triode amplification factor	20	TriodeSection

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate voltage	100 V	TriodeSection
Triode plate current	8 mA	TriodeSection
Pentode plate voltage	170 V	PentodeSection AudioOutput
Pentode screen voltage	170 V	PentodeSection AudioOutput

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1967 Mullard Receiving and Amplifying Valves

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

1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	200 V	PentodeSection
Screen Voltage	200 V	PentodeSection
Plate Current	17.5 mA	PentodeSection
Screen Current	3.3 mA	PentodeSection
Grid Voltage	-8 V	PentodeSection
Transconductance	3300 uS	PentodeSection
Plate Resistance	150000 ohm	PentodeSection
Grid1-to-Grid2 Amplification Factor	14	PentodeSection
Plate Resistance	150000 ohm	—
Transconductance	3300 uS	—
Amplification Factor	14	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	400 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	3.5 W	—
Maximum Screen Dissipation	1.2 W	—
Maximum Cathode Current	25 mA	—
Interelectrode Capacitance Data Published	1	SourceTablePresent

1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	100 V	TriodeSection
Plate Current	4 mA	TriodeSection
Grid Voltage	-2.3 V	TriodeSection
Transconductance	1400 uS	TriodeSection
Plate Resistance	12500 ohm	TriodeSection
Amplification Factor	17.5	TriodeSection
Plate Resistance	12500 ohm	—
Transconductance	1400 uS	—
Amplification Factor	17.5	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Dissipation	1 W	—
Maximum Cathode Current	8 mA	—
Interelectrode Capacitance Data Published	1	SourceTablePresent



SOURCE DATA APPENDIX

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1968 Mazda Belvu

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1968 MAZDA BELVU

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	3.5 W	—
Maximum Screen Dissipation	0.7 W	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Cathode Current	30 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6500 μ S	Typical
Plate Resistance	300000 ohm	Typical

1968 MAZDA BELVU

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Plate Dissipation	1.5 W	—
Maximum Cathode Current	15 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	3500 μ S	Typical
Amplification Factor	20	Typical
Plate Resistance	18000 ohm	Typical



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1973 Mazda Valves Binder 2

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1973 MAZDA VALVES BINDER 2

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage V6 6	-3 V	—
Heater Current Ih	300 mA	—
Maximum Anode Dissipation pa(max) 1.0	35 w	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Screen Grid Dissipation $p_{g2(max)}$	12 W	—
Maximum Anode Supply Voltage $V_{a(b)max}$ 550	550 V	—
Maximum Anode Voltage $V_{a(max)}$ 200	400 V	—
Maximum Screen Grid Supply Voltage $V_{g2(b)max}$	550 V	—
Maximum Screen Grid Voltage $V_{g2(max)}$	250 V	—
Maximum Cathode Current $I_{k(max)}$ 8.0	25 mA	—
Maximum Heater to Cathode Voltage $V_{h-k(max)}$	150 V	—
Control Grid to Heater c_{gt-h} <0.05	25 pF	—
Heater to Cathode c_{h-k}	3.7 pF	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
$I_{kp} =$	12 mA	—
$I_{kp} =$	20 mA	—
Anode to Grid c_{a-g} 0.9	2 pF	—
Triode Grid to Pentode Anode c_{gt-ap}	0.12 pF	—
Triode Anode to Pentode Anode c_{at-up}	1.2 pF	—
Triode Grid to Pentode Grid 1 c_{gt-g1}	-2 pF	—
Triode Anode to Pentode Grid 1 c_{at-g1}	2 pF	—
Pentode Input C_{inlp1}	4.5 pF	—
Pentode Output $C_{out(p)}$	5 pF	—
Triode Grid to Cathode c_{gt-k}	20 pF	—
Triode Anode to Cathode c_{at-k}	3 pF	—
Anode Voltage V_a 100 170	200 V	—



1999 Philips 0-D

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1999 PHILIPS 0-D
Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	300 mA	—
Transconductance	3400 uS	Pentode
Plate resistance	150000 ohm	Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	Pentode;PowerAmplifier
Screen voltage	200 V	Pentode;PowerAmplifier
Plate current	17.5 mA	Pentode;PowerAmplifier
Screen current	3.3 mA	Pentode;PowerAmplifier
Plate load resistance	11000 ohm	Pentode;PowerAmplifier
Maximum plate dissipation	3.9 W	Pentode
Maximum screen dissipation	0.75 W	Pentode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode input capacitance	4.6 pF	—
Pentode output capacitance	4.7 pF	—

1999 PHILIPS 0-D
Section 2 · Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate-grid capacitance	1 pF	—
Triode grid-cathode capacitance	2.3 pF	—
Triode plate-cathode capacitance	1.1 pF	—

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1999 Philips E-Z

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1999 PHILIPS E-Z

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Chauffage: indirect par C.A. ou C.C.; V_e	6.3 V	Published datasheet value
ou en série Ir	300 mA	Published datasheet value

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cg	2.1 pF	Published datasheet value
Cg = 2,1 pF Cgl	4.3 pF	Published datasheet value
Ca	0.8 pF	Published datasheet value
Ca = 0,8 pF Ca	4.8 pF	Published datasheet value
Cag	0.9 pF	Published datasheet value
Cag = 0,9 pF Cagl <	0.2 pF	Published datasheet value
Cgf <	0.05 pF	Published datasheet value
CaT-glP ¢	0.2 pF	Published datasheet value
CgT-aP <	0.12 pF	Published datasheet value
CgT-g'LP <	0.2 pF	Published datasheet value
CaT-aP <	1.2 pF	Published datasheet value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Va=Vp = 170 200	250 v	Published datasheet value
S = 3,2 3,3	2.6 ma/V	Published datasheet value
Wo (d	10 %	Published datasheet value
Wo (d = 10%) = 1,0 1,4	1.55 w	Published datasheet value
Vi (d	10 %	Published datasheet value
Vi (d = 10%) = 3,7 4,1	5.3 v	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Wio (q	50 %	Published datasheet value
Wio (q = 50%) = 1,27 1,75	1.75 W	Published datasheet value
Vi (p	50 %	Published datasheet value
Vi (p = 50%) = 4,4 5,1	5.9 v	Published datasheet value
Vi (Wo	50 mW	Published datasheet value