



ELECTRONIC TUBE REFERENCE

ECL82

Power - Pentode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

Combination valve incorporating a power-output pentode with diode or triode sections for audio-frequency amplification, detection, or driver service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9C12	BASE PINS	9
NOMINAL HEATER	6.3 V / 780 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Common cathode	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	28000 Ω
TRANSCONDUCTANCE	0.0025 S
AMPLIFICATION FACTOR	70
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	15 mA
<i>Published maximum ratings/characteristics promoted from source.</i>	

SECTION2 Pentode	
PLATE RESISTANCE	25000 Ω
TRANSCONDUCTANCE	0.0064 S
AMPLIFICATION FACTOR	9.5
MAXIMUM PLATE VOLTAGE	600 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	7 W
MAXIMUM SCREEN DISSIPATION	3.2 W
MAXIMUM CATHODE CURRENT	50 mA
<i>Published maximum ratings/characteristics promoted from source.</i>	

Triode-pentode for television vertical deflection and audio preamplifier/output stages.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1953 La Radiotechnique

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

1953 LA RADIOTECHNIQUE

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension de l'anode	100 V	Triode
Tension de la grille	0 V	Triode
Resistance interne	28 kohm	Triode
Tension anodique de pointe	600 V	Triode
Tension de l'anode	300 V	Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Capacite de la grille	2.7 pF	Triode
Capacite de l'anode	4.3 pF	Triode
Capacite anode-grille	4.2 pF	Triode
Capacite anode triode-anode pentode. Cara < 0,25 pF	0.25 pF	Triode
Capacite grille triode-grille 1 pentode. Cgg, <	0.025 pF	Triode
Capacite grille triode-anode pentode. Cga < 0,02 pF	0.02 pF	Triode
Capacite anode triode-grille1 pentode. Car g; < 0,02 pF	0.02 pF	Triode

1953 LA RADIOTECHNIQUE

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Indirect (cathodes isolees du filament)	63 V	Pentode

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Alimentation du filament en parallele V	780 mA	Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension de l'anode	200 V	Pentode
Tension de la grille 2	200 V	Pentode
Tension de la grille 1	16 V	Pentode
Courant anodique	35 mA	Pentode
Courant de la grille 2	7 mA	Pentode
Resistance interne	20 kohm	Pentode
Pente	64 mA/V	Pentode
Impedance de charge	5.6 kohm	Pentode
Puissance de sortie	35 W	Pentode
Capacite de la grille 41	9.3 pF	Pentode
Capacite de l'anode	8 pF	Pentode
Capacite anode grille 1	0.3 pF	Pentode
Tension de l'anode	300 V	Pentode
Tension de la grille 2	300 V	Pentode
Puissance dissipee sur l'anode . Pa	5 W	Pentode
Puissance dissipee sur la grille 2 Pgs _	1.8 W	Pentode
(pointe)	3.2 W	Pentode
Courant cathodique	50 mA	Pentode
Resistance du circuit de la grille 1 Rg,	2 Mohm	Pentode
Tension entre filament et cathode Vkf	109 V	Pentode
85 mA pour Va	170 V	Pentode



1958 Brimar Radio Valve No 7

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

1958 BRIMAR RADIO VALVE NO 7

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	100 V	TriodeSection
Plate Current	3.5 mA	TriodeSection

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	2500 μ S	TriodeSection
Amplification Factor	70	TriodeSection

1958 BRIMAR RADIO VALVE NO 7

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	170 V	PentodeSection
Screen Voltage	170 V	PentodeSection

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7500 μ S	PentodeSection
Plate Resistance	16000 ohm	PentodeSection
Application	Frame output / sound output	PentodeSection



SOURCE DATA APPENDIX

195X Tesla

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

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	780 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Plate Dissipation	1 W	—

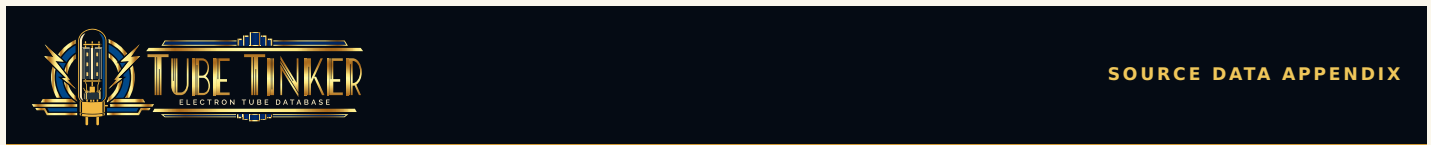
CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	2500 μ S	Typical
Amplification Factor	70	Typical

195X TESLA

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	780 mA	Nominal
Maximum Plate Voltage	600 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	7 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6400 μ S	Typical
Amplification Factor	9.5	Typical



SOURCE OPERATING CONDITIONS

SOURCE PDF

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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	780 mA	—

1961 FERRANTI TECHNICAL HANDBOOK

Section 2 · Pentode

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



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Amperex Condensed

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

1963 AMPEREX CONDENSED

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	780 mA	Published heater rating
Triode amplification factor	70	TriodeSection VoltageAmplifier
Triode plate resistance	28000 ohm	TriodeSection VoltageAmplifier

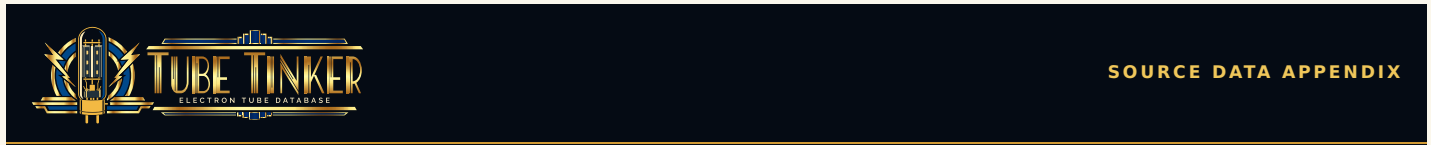
OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate voltage	100 V	TriodeSection VoltageAmplifier
Triode grid voltage	0 V	TriodeSection VoltageAmplifier
Triode plate current	3.5 mA	TriodeSection VoltageAmplifier

1963 AMPEREX CONDENSED

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode plate voltage	170 V	PentodeSection PowerOutput
Pentode screen voltage	115 V	PentodeSection PowerOutput
Pentode plate current	41 mA	PentodeSection PowerOutput
Pentode screen current	9 mA	PentodeSection PowerOutput
Pentode power output	7.5 W	PentodeSection PowerOutput

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode transconductance	7200 μ S	PentodeSection PowerOutput



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Philips Electron Tubes Handbook V1a

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V1A

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	780 mA	Published heater rating

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate voltage	100 V	TriodeSection
Triode plate current	3.5 mA	TriodeSection
Pentode plate voltage	170 V	PentodeSection
Pentode screen voltage	170 V	PentodeSection
Pentode grid bias	-11.5 V	PentodeSection

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	100 V	TriodeSection
Plate Current	3.5 mA	TriodeSection
Grid Voltage	0 V	TriodeSection
Transconductance	2500 μ S	TriodeSection
Plate Resistance	28000 ohm	TriodeSection
Amplification Factor	70	TriodeSection
Plate Resistance	28000 ohm	—
Transconductance	2500 μ S	—
Amplification Factor	70	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	300 V	—
Maximum Plate Dissipation	1 W	—
Maximum Cathode Current	15 mA	—

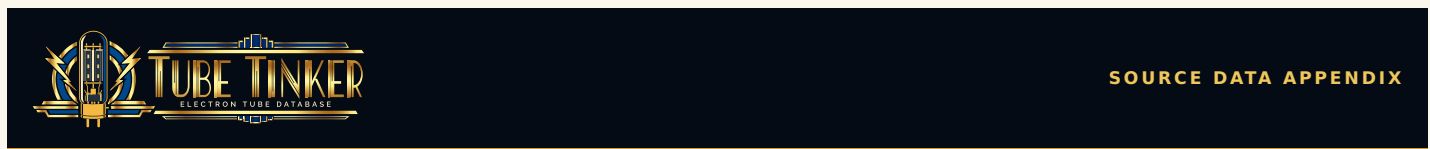
1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	PentodeSection
Screen Voltage	250 V	PentodeSection
Plate Current	28 mA	PentodeSection

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen Current	5.7 mA	PentodeSection
Grid Voltage	-22.5 V	PentodeSection
Transconductance	5000 uS	PentodeSection
Plate Resistance	25000 ohm	PentodeSection
Grid1-to-Grid2 Amplification Factor	9.5	PentodeSection
Plate Resistance	25000 ohm	—
Transconductance	5000 uS	—
Amplification Factor	9.5	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	300 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	7 W	—
Maximum Screen Dissipation	3.2 W	—
Maximum Cathode Current	50 mA	—
Interelectrode Capacitance Data Published	1	SourceTablePresent



SOURCE OPERATING CONDITIONS

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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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	780 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Plate Dissipation	1 W	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Cathode Current	15 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	2500 μ S	Typical
Amplification Factor	70	Typical
Plate Resistance	40000 ohm	Typical

1968 MAZDA BELVU

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	780 mA	Nominal
Maximum Plate Voltage	600 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	7 W	—
Maximum Screen Dissipation	2.5 W	—
Maximum Cathode Current	60 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6400 μ S	Typical
Amplification Factor	9.5	Typical
Plate Resistance	20000 ohm	Typical



TUBE TINKER
ELECTRON TUBE DATABASE

SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1972 Philips Receiving Tubes

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

1972 PHILIPS RECEIVING TUBES

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	780 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Plate Dissipation	1 W	—
Maximum Cathode Current	15 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	2500 μ S	Typical
Amplification Factor	70	Typical
Plate Resistance	40000 ohm	Typical

1972 PHILIPS RECEIVING TUBES

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	780 mA	Nominal
Maximum Plate Voltage	600 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	7 W	—
Maximum Screen Dissipation	2 W	—
Maximum Cathode Current	60 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6400 μ S	Typical
Amplification Factor	9.5	Typical
Plate Resistance	20000 ohm	Typical



SOURCE DATA APPENDIX

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
Heater Voltage Vh	6.3 V	—
Heater Current Ih	780 mA	—
Maximum Screen Grid Dissipation pg2(max) – 1'	8 W	—
Maximum Anode Supply Voltage (Ia=0) va(b)max 550	550 V	—
Maximum Anode Voltage Va(max) 300	300 V	—
Maximum Screen Grid Supply Voltage (Ig2=0) Vg2(b)max –	550 V	—
Maximum Screen Grid Voltage Vg2(max) –	300 V	—
Maximum Mean Cathode Current Ik(av)max 15	50 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
For Va ~250V 10	7 W	—
For Va >250V –	50 W	—
For speech and music –	32 W	—
Pulse Negative –	500 V	—



SOURCE DATA APPENDIX

1975 RCA RC30

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

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Resistance at frequency of	50 MHz	Published in approved ECL82 target datasheet entry; Section1
Equivalent Noise Resistance	1500 Ω	Published in approved ECL82 target datasheet entry; Section1
For fixed-bias operation 0.5	0.5 MΩ	Published in approved ECL82 target datasheet entry; Section1
For cathode-bias operation 0.5	1 MΩ	Published in approved ECL82 target datasheet entry; Section1
Heater Voltage 6.3	50 V	Published in approved ECL82 target datasheet entry; Section1
Heater Current 0.78	100 mA	Published in approved ECL82 target datasheet entry; Section1
Plate Supply Voltage 550	900 V	Published in approved ECL82 target datasheet entry; Section1
Plate Voltage 300	600 V	Published in approved ECL82 target datasheet entry; Section1
Grid-No.2 Supply Voltage	550 V	Published in approved ECL82 target datasheet entry; Section1
Plate Dissipation 1	7 W	Published in approved ECL82 target datasheet entry; Section1
Grid-No.2 Input	1.8 W	Published in approved ECL82 target datasheet entry; Section1

1975 RCA RC30

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Resistance at frequency of	50 MHz	Published in approved ECL82 target datasheet entry; Section2
Equivalent Noise Resistance	1500 Ω	Published in approved ECL82 target datasheet entry; Section2
For fixed-bias operation 0.5	0.5 MΩ	Published in approved ECL82 target datasheet entry; Section2
For cathode-bias operation 0.5	1 MΩ	Published in approved ECL82 target datasheet entry; Section2
Heater Voltage 6.3	50 V	Published in approved ECL82 target datasheet entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Current 0.78	100 mA	Published in approved ECL82 target datasheet entry; Section2
Plate Supply Voltage 550	900 V	Published in approved ECL82 target datasheet entry; Section2
Plate Voltage 300	600 V	Published in approved ECL82 target datasheet entry; Section2
Grid-No.2 Supply Voltage	550 V	Published in approved ECL82 target datasheet entry; Section2
Plate Dissipation 1	7 W	Published in approved ECL82 target datasheet entry; Section2
Grid-No.2 Input	1.8 W	Published in approved ECL82 target datasheet entry; Section2
Plate Voltage 100	200 V	Published in approved ECL82 target datasheet entry; Section2
For fixed-bias operation I	1 MΩ	Published in approved ECL82 target datasheet entry; Section2
For cathode-bias operation 2	2 MΩ	Published in approved ECL82 target datasheet entry; Section2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance (Approx.)	0.02 MΩ	Published in approved ECL82 target datasheet entry; Section2
Transconductance 2500	6400 μS	Published in approved ECL82 target datasheet entry; Section2
Plate Current 3.5	35 mA	Published in approved ECL82 target datasheet entry; Section2
Grid-No.2 Current	7 mA	Published in approved ECL82 target datasheet entry; Section2





TUBE TINKER

ELECTRON TUBE DATABASE

SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1999 Philips E-Z

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

1999 PHILIPS E-Z

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current I	3.5 mA	Published datasheet value
Transconductance S	2.2 mA/V	Published datasheet value
Anode peak voltage Vap max	2.5 kV	Published datasheet value
Anode current Ia	41 mA	Published datasheet value
Transconductance S	7.5 mA/V	Published datasheet value
Output power Wo	3.5 W	Published datasheet value
Heater voltage Vs	6.3 V	Published datasheet value
Heater current I ϕ	780 mA	Published datasheet value

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode to all except grid Ca(g)	4.3 pF	Published datasheet value
Grid to all except anode Cg(a)	2.7 pF	Published datasheet value
Anode to grid Cag	4.4 pF	Published datasheet value

TUBE TINKER

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