

ELECTRONIC TUBE REFERENCE

ECL85

Power - TV Vertical Output electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

Combination triode-pentode power tube designed primarily for television vertical/frame-deflection output service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9LY	BASE PINS	9
NOMINAL HEATER	6.3 V / 900 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

9LY - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1	B	P – Plate (Anode)	CONNECTED
PIN2	B	G1 – Control Grid	CONNECTED
PIN3	B	K – Cathode	CONNECTED
PIN4	–	H – Heater	CONNECTED
PIN5	–	H – Heater	CONNECTED
PIN6	A	P – Plate (Anode)	CONNECTED
PIN7	A	G2 – Screen Grid	CONNECTED
PIN8	A	G3 – Suppressor Grid	CONNECTED
PIN8	A	K – Cathode	CONNECTED
PIN8	–	IS – Internal Screen	CONNECTED
PIN9	A	G1 – Control Grid	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	18000 Ω
TRANSCONDUCTANCE	0.0055 S
AMPLIFICATION FACTOR	50
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Published ratings/characteristics promoted from the approved source.</i>	

SECTION2 Pentode	
PLATE RESISTANCE	15000 Ω
TRANSCONDUCTANCE	0.011 S
AMPLIFICATION FACTOR	50
MAXIMUM PLATE VOLTAGE	550 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	7 W
MAXIMUM SCREEN DISSIPATION	2.5 W
MAXIMUM CATHODE CURRENT	80 mA
<i>Published ratings/characteristics promoted from the approved source.</i>	

Triode-pentode power tube for 110-degree television vertical-deflection service.

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
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	900 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Plate Dissipation	1 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5500 μS	Typical
Amplification Factor	50	Typical

1953 LA RADIOTECHNIQUE

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	900 mA	Nominal
Maximum Plate Voltage	550 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	7 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	11000 μS	Typical

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	900 mA	Published heater rating
Driver amplification factor	50	TriodeSection Driver
Driver plate resistance	7600 ohm	TriodeSection Driver

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Driver plate voltage	100 V	TriodeSection Driver
Driver control-grid bias	-0.8 V	TriodeSection Driver
Driver plate current	5 mA	TriodeSection Driver

1963 AMPEREX CONDENSED

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Vertical-output plate voltage	170 V	PentodeSection VerticalDeflection
Vertical-output screen voltage	170 V	PentodeSection VerticalDeflection
Vertical-output plate current	41 mA	PentodeSection VerticalDeflection
Vertical-output screen current	27 mA	PentodeSection VerticalDeflection

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Vertical-output amplification factor	7	PentodeSection VerticalDeflection
Vertical-output transconductance	7500 μ S	PentodeSection VerticalDeflection



SOURCE DATA APPENDIX

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	900 mA	Published heater rating
Triode transconductance	5500 μ S	TriodeSection

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate voltage	100 V	TriodeSection
Triode plate current	10 mA	TriodeSection
Pentode plate voltage	65 V	PentodeSection
Pentode screen voltage	210 V	PentodeSection
Pentode peak plate current	285 mA	PentodeSection VerticalDeflection
Triode maximum plate voltage	250 V	TriodeSection
Pentode maximum plate voltage	250 V	PentodeSection
Pentode maximum plate dissipation	7 W	PentodeSection

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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	875 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Plate Dissipation	1.5 W	—
Maximum Cathode Current	20 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5500 μ S	Typical
Amplification Factor	50	Typical
Plate Resistance	18000 ohm	Typical

1968 MAZDA BELVU

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	875 mA	Nominal
Maximum Plate Voltage	550 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	7 W	—
Maximum Screen Dissipation	2.5 W	—
Maximum Cathode Current	80 mA	—

Characteristic		
Parameter	Published Value	Condition / Note
Transconductance	11000 μ S	Typical
Plate Resistance	15000 ohm	Typical



SOURCE DATA APPENDIX

Source Operating Conditions

[Source PDF](#)

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	875 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Plate Dissipation	1.5 W	—
Maximum Cathode Current	20 mA	—

Characteristic		
Parameter	Published Value	Condition / Note
Transconductance	5500 μ S	Typical
Amplification Factor	50	Typical
Plate Resistance	18000 ohm	Typical

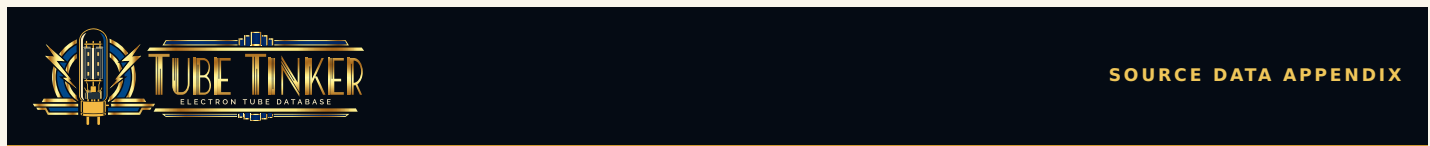
1972 Philips Receiving Tubes

Section 2 · Pentode

Other		
Parameter	Published Value	Condition / Note
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	875 mA	Nominal
Maximum Plate Voltage	550 V	—
Maximum Screen Voltage	250 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Dissipation	7 W	—
Maximum Screen Dissipation	2.5 W	—
Maximum Cathode Current	80 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	11000 μ S	Typical
Plate Resistance	15000 ohm	Typical



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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/de) 6.3 9.5 11.6	18 V	Published in approved ECL85 target datasheet entry; Section1
Heater Current 0.9 0.6 0.45	300 mA	Published in approved ECL85 target datasheet entry; Section1
IMate Supply Voltage 550	550 V	Published in approved ECL85 target datasheet entry; Section1
Peak Plate Voltage 0	2000 V	Published in approved ECL85 target datasheet entry; Section1
DC Plate Voltage 250	250 V	Published in approved ECL85 target datasheet entry; Section1
Grid-No.2 (Screen-Grid) Supply Voltage	550 V	Published in approved ECL85 target datasheet entry; Section1
Grid-No. 2 Voltage	250 V	Published in approved ECL85 target datasheet entry; Section1
Peak Cathode Current"	200 mA	Published in approved ECL85 target datasheet entry; Section1
Average Cathode Current 15	75 mA	Published in approved ECL85 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipation 0.5	7 W	Published in approved ECL85 target datasheet entry; Section1
Crid-No.2 Input	2 W	Published in approved ECL85 target datasheet entry; Section1
Plate Voltage 100 50 65	170 V	Published in approved ECL85 target datasheet entry; Section1
Grid-No.2 Voltage 170 210	170 V	Published in approved ECL85 target datasheet entry; Section1
Grid-No. 1 Voltage -0.8 - -1	-15 V	Published in approved ECL85 target datasheet entry; Section1
For fixed-bias operation 1	1 MΩ	Published in approved ECL85 target datasheet entry; Section1
For cathode-bias operation 3.3	2.2 MΩ	Published in approved ECL85 target datasheet entry; Section1
Maximum pulse duration	5 %	Published in approved ECL85 target datasheet entry; Section1
Maximum pulse duration 5 per cent of a cycle with a maximum of	1 millisecond	Published in approved ECL85 target datasheet entry; Section1
Maximum pulse duration	200 microseconds	Published in approved ECL85 target datasheet entry; Section1
be reduced to 100 mAwith a maximum pulse duration of	400 microseconds	Published in approved ECL85 target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance (Appro*.) 7600	-25000 Ω	Published in approved ECL85 target datasheet entry; Section1
Transccnductance 6500	7500 μS	Published in approved ECL85 target datasheet entry; Section1
Plate Current 5 200" 240	41 mA	Published in approved ECL85 target datasheet entry; Section1
Grid-No.2 Current 40« 50*	2.7 mA	Published in approved ECL85 target datasheet entry; Section1

1975 RCA RC30

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/de) 6.3 9.5 11.6	18 V	Published in approved ECL85 target datasheet entry; Section2
Heater Current 0.9 0.6 0.45	300 mA	Published in approved ECL85 target datasheet entry; Section2
IMate Supply Voltage 550	550 V	Published in approved ECL85 target datasheet entry; Section2
Peak Plate Voltage 0	2000 V	Published in approved ECL85 target datasheet entry; Section2
DC Plate Voltage 250	250 V	Published in approved ECL85 target datasheet entry; Section2
Grid-No.2 (Screen-Grid) Supply Voltage	550 V	Published in approved ECL85 target datasheet entry; Section2
Grid-No. 2 Voltage	250 V	Published in approved ECL85 target datasheet entry; Section2
Peak Cathode Current"	200 mA	Published in approved ECL85 target datasheet entry; Section2
Average Cathode Current 15	75 mA	Published in approved ECL85 target datasheet entry; Section2
Plate Dissipation 0.5	7 W	Published in approved ECL85 target datasheet entry; Section2
Crid-No.2 Input	2 W	Published in approved ECL85 target datasheet entry; Section2
Plate Voltage 100 50 65	170 V	Published in approved ECL85 target datasheet entry; Section2
Grid-No.2 Voltage 170 210	170 V	Published in approved ECL85 target datasheet entry; Section2
Grid-No. 1 Voltage -0.8 - -1	-15 V	Published in approved ECL85 target datasheet entry; Section2
For fixed-bias operation 1	1 MΩ	Published in approved ECL85 target datasheet entry; Section2
For cathode-bias operation 3.3	2.2 MΩ	Published in approved ECL85 target datasheet entry; Section2
Maximum pulse duration	5 %	Published in approved ECL85 target datasheet entry; Section2
Maximum pulse duration 5 per cent of a cycle with a maximum of	1 millisecond	Published in approved ECL85 target datasheet entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum pulse duration	200 microseconds	Published in approved ECL85 target datasheet entry; Section2
be reduced to 100 mA with a maximum pulse duration of	400 microseconds	Published in approved ECL85 target datasheet entry; Section2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance (Appro*.) 7600	-25000 Ω	Published in approved ECL85 target datasheet entry; Section2
Transconductance 6500	7500 μS	Published in approved ECL85 target datasheet entry; Section2
Plate Current 5 200" 240	41 mA	Published in approved ECL85 target datasheet entry; Section2
Grid-No.2 Current 40« 50*	2.7 mA	Published in approved ECL85 target datasheet entry; Section2


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

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage Vi	6.3 V	Published datasheet value
Heater current If	875 mA	Published datasheet value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published value	50 Hz	Published datasheet value
50 Hz)£ 0.5 M2 and Cgl'f	0.2 pF	Published datasheet value
Cathode to heater voltage Vit max	100 V	Published datasheet value
D.C. component during warming up Vs (k pos) max	315 V	Published datasheet value