



ELECTRONIC TUBE REFERENCE

5654

Voltage Pentode - Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Sharp-cutoff pentode designed for RF, VHF/UHF, wide-band, or voltage-amplifier service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	E7-1	BASE PINS	7
NOMINAL HEATER	6.3 V / 175 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Pentode	
PLATE RESISTANCE	340000 Ω
TRANSCONDUCTANCE	0.005 S
AMPLIFICATION FACTOR	32.5
MAXIMUM PLATE VOLTAGE	200 V
MAXIMUM SCREEN VOLTAGE	155 V
MAXIMUM PLATE DISSIPATION	1.65 W
MAXIMUM SCREEN DISSIPATION	0.55 W
MAXIMUM CATHODE CURRENT	20 mA
MAXIMUM HEATER-CATHODE VOLTAGE	135 V
<i>Absolute maxima and Class-A characteristics promoted.</i>	

Ruggedized RF voltage pentode designed for severe mechanical service and repeated heater cycling.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1940 RCA

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

1940 RCA

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	175 mA	Nominal
Maximum Plate Voltage	200 V	—
Maximum Screen Voltage	155 V	—
Maximum Plate Dissipation	1.85 W	—
Maximum Cathode Current	20 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5100 μ S	Typical
Plate Resistance	500000 ohm	Typical

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1957 Philips Receiving and Amplifying Tubes

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

1957 PHILIPS RECEIVING AND AMPLIFYING TUBES

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	120 V	—
Screen Voltage	120 V	—

[SOURCE DATA APPENDIX](#)

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1958 Compagnie General

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

1958 COMPAGNIE GENERAL

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Operating Frequency Maximum	400 MHz	—
Plate Resistance	500000 ohm	—
Transconductance	5100 uS	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipation	1.65 W	—

[SOURCE DATA APPENDIX](#)

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1961 Tung Sol

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

1961 TUNG SOL

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Nominal
Heater current	175 mA	Nominal
Plate voltage	180 V	Published operating table; OperatingPoint1
Plate voltage	120 V	Published operating table; OperatingPoint1
Plate voltage	200 V	Published operating table; OperatingPoint1
Plate voltage	120 V	Published operating table; OperatingPoint1
Screen voltage	40 V	Published operating table; OperatingPoint1
Screen voltage	120 V	Published operating table; OperatingPoint1
Screen voltage	155 V	Published operating table; OperatingPoint1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	7.5 mA	Published operating table; OperatingPoint1
Plate current	7.5 mA	Published operating table; OperatingPoint1



SOURCE DATA APPENDIX

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 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published rating
Heater current	175 mA	Published rating
Transconductance	5000 μ S	Published table
Published characteristic value	340	Published table

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	120 V	Published table
Screen voltage	120 V	Published table
Cathode resistor	100 ohm	Published table
Published current value	2.5 mA	Published table



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Philips Electron Tubes Handbook V1

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V1

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	120 V	WideBandAmplifier
Screen voltage	120 V	WideBandAmplifier
Grid voltage	-2 V	WideBandAmplifier
Screen current	2.5 mA	WideBandAmplifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	3800–6200 uS	—
Plate resistance	0.34 MOhm	—
Grid cutoff voltage	-8.5 V	AtPlateCurrent=10uA

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-other-elements capacitance	3.4–4.6 pF	ExternalShield
Anode capacitance	2.45–3.25 pF	ExternalShield
Anode-to-grid capacitance	—0.02 pF	Maximum

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid1-to-grid2 capacitance	1.4 pF	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Philips Electron Tubes Handbook V3

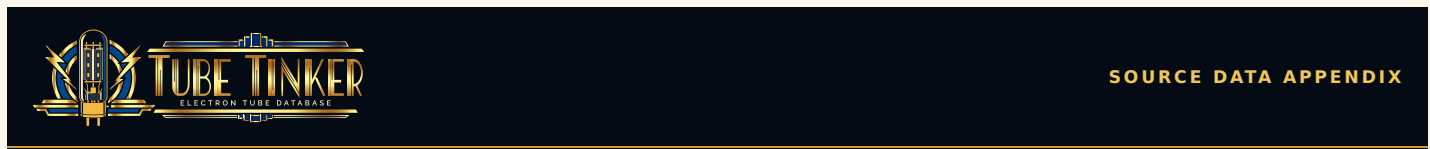
Published test conditions and operating points. Values on this page are preserved as reported by this source.

1963 PHILIPS ELECTRON TUBES HANDBOOK V3

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	120 V	Section1
Screen voltage	120 V	Section1
Control-grid voltage	-2 V	Section1
Screen current	2.5 mA	Section1
Transconductance	5000 μ S	Section1
Plate resistance	340000 Ω	Section1
Cutoff grid voltage	-8.5 V	Section1
Grid current maximum	0.1 μ A	Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate capacitance	2.85 pF	Section1
Grid capacitance	4 pF	Section1



1963 Siemens

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

1963 SIEMENS

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	175 mA	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5000 μ S	Nominal/Bogey
Amplification factor	32.5	Nominal/Bogey



SOURCE DATA APPENDIX

1966 Tung Sol Electronic Tubes 3 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 3 OF 4

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	175 mA	—
Plate voltage	120 V	ClassA
Screen voltage	120 V	ClassA
Cathode bias resistor	200 ohm	ClassA
Plate current	7.5 mA	ClassA
Screen current	2.5 mA	ClassA
Maximum plate voltage	200 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum screen voltage	155 V	—
Maximum plate dissipation	1.65 W	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1968 General Electric Co

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

1968 GENERAL ELECTRIC CO

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	120 V	ClassA
Screen Voltage	120 V	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	7.5 mA	ClassA



SOURCE DATA APPENDIX

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 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DesignFeature	ShockAndVibrationResistant text	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 RCA HB3 Binder 3 of 7

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

1971 RCA HB3 BINDER 3 OF 7

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	—200 V	—
Maximum screen voltage	—155 V	—
Maximum plate dissipation	—1.85 W	—
Maximum screen dissipation	—0.55 W	—
Maximum cathode current	—20 mA	—
Plate voltage	120 V	ClassA
Plate voltage	180 V	ClassA
Grid No.2 voltage	120 V	ClassA
Cathode-bias resistor	180 Ω	ClassA

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	500000 Ω	—
Transconductance	5100 μS	—



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

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.02 pF	Max
Input capacitance	4 pF	—
Output capacitance	2.85 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	180 V	ClassA
Screen-grid voltage	120 V	ClassA
Plate current	7.7 mA	ClassA
Screen-grid current	2.4 mA	ClassA



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1999 Philips 0-D

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

1999 PHILIPS 0-D
Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	175 mA	—
Plate voltage	120 V	—
Screen voltage	120 V	—
Plate current	7.5 mA	—
Screen current	2.5 mA	—
Transconductance	5000 uS	—
Plate resistance	340000 ohm	—

CAPACITANCE

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	4 pF	—
Output capacitance	2.85 pF	—