

ELECTRONIC TUBE REFERENCE

EF80

Voltage - Pentode High Frequency (single) electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
PENTODE

High-frequency pentode widely used for wideband RF, IF, and television video amplification.

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	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	650000 Ω
TRANSCONDUCTANCE	0.0068 S
AMPLIFICATION FACTOR	50
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM SCREEN DISSIPATION	0.7 W
MAXIMUM CATHODE CURRENT	15 mA
Promoted ratings and characteristics are taken from the printed target-tube entry in the approved PDF.	

High-frequency pentode for wideband, RF, IF, and television video-amplifier service.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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
Application	Television amplifier or mixer	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode Voltage	170 V	—
Screen Voltage	170 V	—
Anode Current	10 mA	—
Transconductance	7400 μ S	AnodeVoltage=170V
Anode Voltage	250 V	—
Screen Voltage	250 V	—
Anode Current	10 mA	—
Transconductance	6800 μ S	AnodeVoltage=250V



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 · Pentode

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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7400 μ S	Typical



SOURCE OPERATING CONDITIONS

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1953 RFT Rundfunk Technik

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1953 RFT RUNDFUNK TECHNIK

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Screen Voltage	300 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Dissipation	2.5 W	—
Maximum Screen Dissipation	0.5 W	—
Maximum Cathode Current	25 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7400 μ S	Typical



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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 · Pentode

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



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195X Tesla

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

195X TESLA

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	250 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	2.5 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7400 μ S	Typical


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	Point1
Screen-grid voltage	170 V	Point1
Control-grid voltage	-2 V	Point1
Plate current	10 mA	Point1
Screen-grid current	2.5 mA	Point1
Transconductance	7400 μ S	Point1
Plate resistance	400000 Ohm	Point1
Screen-to-control-grid amplification factor	50 ratio	Point1


SOURCE DATA APPENDIX

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	RFIFVideoAmplifier
Screen voltage	250 V	RFIFVideoAmplifier
Control-grid voltage	-3.5 V	RFIFVideoAmplifier
Plate current	10 mA	RFIFVideoAmplifier
Screen current	2.8 mA	RFIFVideoAmplifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	65000 Ω	Section1
Transconductance	6500 μS	Section1
Amplification factor	50	Section1



SOURCE DATA APPENDIX

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 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	300 mA	Published heater rating
Transconductance	6800 μS	RF Amplifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	RFAmplifier
Screen voltage	250 V	RFAmplifier
Grid bias	-3.5 V	RFAmplifier
Plate current	10 mA	RFAmplifier
Screen current	2.8 mA	RFAmplifier


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cl n ig l) 7	0 pF	Published in approved EF80 target datasheet entry; Section1
C1!l(g2)	5.4 pF	Published in approved EF80 target datasheet entry; Section1
P g2 max	700 mW	Published in approved EF80 target datasheet entry; Section1
h, max	15 mA	Published in approved EF80 target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
gill	7.4 mA	Published in approved EF80 target datasheet entry; Section1


SOURCE DATA APPENDIX

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	2.5 W	—
Maximum Screen Dissipation	0.5 W	—
Maximum Cathode Current	25 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7400 μ S	Typical



SOURCE DATA APPENDIX

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Screen Voltage	300 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Dissipation	2.5 W	—
Maximum Screen Dissipation	0.7 W	—
Maximum Cathode Current	25 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7400 μ S	Typical


SOURCE DATA APPENDIX

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage Vh	63 V	—
Heater Current Ih	3 A	—
Maximum Anode Dissipation pa(max)	25 W	—
Maximum Screen Grid Dissipation pg2(max)	7 W	—
Maximum Anode Voltage Va(max)	300 V	—
Maximum Screen Grid Voltage Vg2(max)	300 V	—
Maximum Heater to Cathode Voltage (R.M.S.) Vh-k(r.m.\$)max	150 V	—
Maximum Cathode Current Ik(max)	15 mA	—


SOURCE DATA APPENDIX

1981 Russian Tubes Katsnelson and Larionov

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

1981 RUSSIAN TUBES KATSNELSON AND LARIONOV

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published nominal/basic-parameter heater condition.
Heater current	300 mA	Published heater current.
Plate current	10 mA	Published basic-parameter operating point.
Screen current	2.8 mA	Published basic-parameter operating point.
Transconductance	6800 μ S	Published basic-parameter value; normalized to μ S.
Plate resistance	650000 Ω	Published internal/plate resistance.
Amplification factor	50	Published amplification factor.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	300 V	Published limiting operating value.



SOURCE DATA APPENDIX

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Heating
Heater current	300 mA	Heating

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	300 V	Promoted published datasheet value
Maximum screen voltage	300 V	Promoted published datasheet value
Maximum screen dissipation	0.9 W	Promoted published datasheet value

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	500000 Ω	Promoted published datasheet value
Transconductance	7400 μS	Promoted published datasheet value
Amplification factor	50	Promoted published datasheet value

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