

ELECTRONIC TUBE REFERENCE

EF184

Voltage - Pentode electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
PENTODE

Frame-grid high-transconductance pentode designed for wideband and television IF amplification. Its specialized grid construction provides high gain and bandwidth for demanding television and broadband signal stages.

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	380000 Ω
TRANSCONDUCTANCE	0.015 S
AMPLIFICATION FACTOR	60
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM SCREEN DISSIPATION	0.9 W
MAXIMUM CATHODE CURRENT	25 mA
Promoted ratings and characteristics are taken from the printed target-tube entry in the approved PDF.	

Frame-grid high-transconductance pentode for wideband and television IF amplification.

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	IFAmplifier
Screen voltage	200 V	IFAmplifier
Control-grid voltage	-2.5 V	IFAmplifier
Plate current	10 mA	IFAmplifier
Screen current	4.1 mA	IFAmplifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	350000 Ω	IFAmplifier
Transconductance	15000 μS	IFAmplifier
Amplification factor	60	IFAmplifier

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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	300 mA	Published heater rating
Transconductance	15000 μ S	IFAmplifier
Plate resistance	380000 ohm	IFAmplifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	IFAmplifier
Screen voltage	200 V	IFAmplifier
Grid bias	-2.5 V	IFAmplifier
Plate current	10 mA	IFAmplifier
Screen current	4.1 mA	IFAmplifier



SOURCE DATA APPENDIX

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ci n	10 pF	Published in approved EF184 target datasheet entry; Section1
Co ut	3 pF	Published in approved EF184 target datasheet entry; Section1
Cg l - g 2	2.8 pF	Published in approved EF184 target datasheet entry; Section1
P g2 max	900 mW	Published in approved EF184 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
T b u l b max	180 °C	Published in approved EF184 target datasheet entry; Section1
gm =2	2 mA	Published in approved EF184 target datasheet entry; Section1


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

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	0.6 W	—
Maximum Cathode Current	30 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	15600 μ S	Typical
Plate Resistance	250000 ohm	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	—
Maximum Plate Dissipation	2.5 W	—
Maximum Screen Dissipation	0.9 W	—
Maximum Cathode Current	30 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	15600 μ S	Typical
Plate Resistance	250000 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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage Vh	63 V	—
Heater Current Ih	3 A	—
Maximum Anode Dissipation pa(max)	25 W	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Screen Grid Dissipation pS2(max)	9 W	—
Maximum Anode Supply Voltage Va(b)max	550 V	—
Maximum Anode Voltage Va(max)	250 V	—
Maximum Screen Grid Supply Voltage Vg2(b)max	550 V	—
Maximum Screen Grid Voltage Vg2(max)	250 V	—
Maximum Peak Negative Grid Voltage -vgl (pk)max	50 V	—
Maximum Heater to Cathode Voltage (R.M.S.) Vh-k(max)r.m.s	150 V	—
Maximum Cathode Current Ik(max)	25 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input cmn 10 104	115 pF	—
Output tout 30 34	4.5 pF	—
Anode to Grid 1 Ca-gl <00055 <00065 <	75 pF	—
Grid 1 to Grid 2 cgl-g2 28 28	28 pF	—



SOURCE DATA APPENDIX

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 3.4 4.4	6.3 V	Published in approved XF184 target datasheet entry; Section1
Heater Current 0.6 0.45	300 mA	Published in approved XF184 target datasheet entry; Section1
Plate Supply Voltage B	50 V	Published in approved XF184 target datasheet entry; Section1
Plate Voltage	250 V	Published in approved XF184 target datasheet entry; Section1
Grid-No.2 (Screen-Grid) Supply Voltage	550 V	Published in approved XF184 target datasheet entry; Section1
Grid-No.2 Voltage	250 V	Published in approved XF184 target datasheet entry; Section1
Cathode Current	25 mA	Published in approved XF184 target datasheet entry; Section1
Plate Dissipation	2.5 W	Published in approved XF184 target datasheet entry; Section1
Grid-No.2 Input	0.9 W	Published in approved XF184 target datasheet entry; Section1
Plate Voltage 190	200 V	Published in approved XF184 target datasheet entry; Section1
Grid-No.2 Voltage 190	200 V	Published in approved XF184 target datasheet entry; Section1
Grid-No. 1 Voltage -2.35	-2.5 V	Published in approved XF184 target datasheet entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Internal Shield	10 pF	Published in approved XF184 target datasheet entry; Section1
Internal Shield	3 pF	Published in approved XF184 target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance (Approx.) 0.35	0.35 MΩ	Published in approved XF184 target datasheet entry; Section1

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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	4.1 mA	Published basic-parameter operating point.
Transconductance	15000 μ S	Published basic-parameter value; normalized to μ S.
Plate resistance	380000 Ω	Published internal/plate resistance.
Amplification factor	60	Published amplification factor.
Input capacitance	10 pF	Published in the filename-designated tube entry.
Output capacitance	3 pF	Published in the filename-designated tube entry.
Grid-to-plate capacitance	0.0055 pF	Published in the filename-designated tube entry.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	250 V	Published limiting operating value.
Maximum screen voltage	250 V	Published limiting operating value.
Maximum cathode current	25 mA	Published limiting cathode-current value.
Maximum plate dissipation	2.5 W	Published limiting plate-dissipation value.
Maximum screen dissipation	0.9 W	Published limiting screen-dissipation value.

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

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	300 mA	—
Typical plate voltage	200 V	—
Typical screen voltage	200 V	—
Typical grid voltage	-2.5 V	—
Typical plate current	10 mA	—
Typical screen current	4.1 mA	—
Transconductance	15000 uS	—
Plate resistance	380000 ohm	—
Equivalent noise resistance at 40 MHz	330 ohm	—
Amplification factor	60	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid input capacitance	10 pF	—
Plate output capacitance	3 pF	—
Plate-grid capacitance maximum	0.0055 pF	—

TUBE TINKER

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