



ELECTRONIC TUBE REFERENCE

EF85

Voltage Pentode - Remote Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Variable-mu high-frequency pentode for RF and IF amplification with automatic gain control.

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

SECTION 1 Pentode	
PLATE RESISTANCE	1000000 Ω
TRANSCONDUCTANCE	0.006 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM SCREEN DISSIPATION	0.65 W
MAXIMUM CATHODE CURRENT	15 mA
<i>Published ratings/characteristics promoted from the approved source.</i>	

Variable-mu high-frequency pentode for RF and IF amplification with automatic gain control.



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	6000 μ S	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 · Pentode

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

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 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	300 mA	Published heater rating
Transconductance	5000 μ S	RForIFAmplifier
Plate resistance	340000 ohm	RForIFAmplifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	RForIFAmplifier
Screen voltage	120 V	RForIFAmplifier
Plate current	7.5 mA	RForIFAmplifier
Screen current	2.5 mA	RForIFAmplifier
Maximum plate voltage	180 V	Published limit
Maximum plate dissipation	1.7 W	Published limit
Maximum screen voltage	140 V	Published limit

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
h,	300 mA	Published in approved EF85 target datasheet entry; Section1
Ci n	7.2 pF	Published in approved EF85 target datasheet entry; Section1
Cuu t	3.7 pF	Published in approved EF85 target datasheet entry; Section1
Ca -eg I <	0.007 pF	Published in approved EF85 target datasheet entry; Section1
Cg l - l1 <	0.15 pF	Published in approved EF85 target datasheet entry; Section1
la 11.8 9.2 9.6	10 mA	Published in approved EF85 target datasheet entry; Section1
gm 6.0 5.7 5.8	6 mA	Published in approved EF85 target datasheet entry; Section1
Itotal 15 23.5 20.5	18.5 mA	Published in approved EF85 target datasheet entry; Section1
I" 10.7 11.3	11.7 mA	Published in approved EF85 target datasheet entry; Section1
Ig2 2.5 2.7	2.8 mA	Published in approved EF85 target datasheet entry; Section1
gm 6.0 6.2	6 mA	Published in approved EF85 target datasheet entry; Section1
Itotal 17. 5 16 .5	16 mA	Published in approved EF85 target datasheet entry; Section1
V g	2 mA	Published in approved EF85 target datasheet entry; Section1
P g 2 max	650 mW	Published in approved EF85 target datasheet entry; Section1
Ik max	15 mA	Published in approved EF85 target datasheet entry; Section1

Characteristic		
Parameter	Published Value	Condition / Note
I _a	10 mA	Published in approved EF85 target datasheet entry; Section1
I _{g2}	2.5 mA	Published in approved EF85 target datasheet entry; Section1
g _m	6 mA	Published in approved EF85 target datasheet entry; Section1



SOURCE DATA APPENDIX

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 · Pentode

Other		
Parameter	Published Value	Condition / Note
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	2.5 W	—
Maximum Screen Dissipation	0.5 W	—
Maximum Cathode Current	15 mA	—

Characteristic		
Parameter	Published Value	Condition / Note
Transconductance	6000 μ S	Typical
Plate Resistance	1000000 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	0.65 W	—
Maximum Cathode Current	15 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6000 μ S	Typical
Plate Resistance	1000000 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 pg2(max)	65 W	—
Maximum Anode Voltage Va(max)	300 V	—
Maximum Screen Grid Voltage Vg2(max)	300 V	—
Maximum Cathode Current Ik(max)	15 mA	—
Grid 1 to Heater cgl_h <	15 pF	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Earth c; 5	72 pF	—
Anode to Earth coot	37 pF	—
Grid 1 to Anode cgl.a <	7 pF	—
Anode Voltage Va 250	250 V	—
Screen Grid Voltage Vg2 100	250 V	—
Control Grid Voltage Vg1 —	2 V	—
Anode Current Ia	10 mA	—
Screen Grid Current Ig2	25 mA	—
Mutual Conductance gm	6 mA	—
60 μ A/V Vgi	-35 V	—
(Va=250V, Vg3=0V, Vh=	6.3 V	—
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(Va 250V, Vg3=0V, Vh	6.3 V	—



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.

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Heating
Heater current	300 mA	Heating
Maximum plate voltage	300 V	Promoted published datasheet value
Maximum screen voltage	250 V	Promoted published datasheet value
Maximum plate dissipation	2.5 W	Promoted published datasheet value
Anode to grid No.1 Cagl .. max	0.007 pF	Limiting values
Grid No.1 to heater Cglf max	0.15 pF	Limiting values
Anode voltage Va, max	530 V	Limiting values
A max	250 V	Limiting values
Anode dissipation Wa max	2.5 W	Limiting values
Grid No.2 voltage Vgzo max	550 V	Limiting values
Vg2 max	250 V	Limiting values
Grid No.2 dissipation Wgz max	0.65 W	Limiting values
Cathode current I max	15 mA	Limiting values
Heater to cathode voltage Vit max	150 V	Limiting values

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	600000 Ω	Promoted published datasheet value
Transconductance	6000 μS	Promoted published datasheet value
Amplification factor	26	Promoted published datasheet value
Anode and supply voltage Va=Vp	250 v	Published datasheet value
Grid No.1 voltage Vgl ~2 =	35 v	Published datasheet value
Y, =250	-300 V	Published datasheet value
Vo3 =	0 V	Published datasheet value
E Vs =	250 V	Published datasheet value