

ELECTRONIC TUBE REFERENCE

UBF89

Voltage Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA
3 SECTIONS
CONSTRUCTION
DIODE-DIODE-PENTODE

Series-heater double-diode variable-mu pentode for high-gain RF/IF amplification, AM detection, and automatic volume control. Paired diodes provide detector and AVC rectification.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	9
NOMINAL HEATER	19 V / 100 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Common cathode	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION1 Diode	
MAXIMUM CATHODE CURRENT	0.8 mA
PEAK INVERSE VOLTAGE	200 V
NOMINAL OUTPUT CURRENT	0.8 mA
PEAK FORWARD CURRENT	5 mA
Representative section for two diode systems sharing the common cathode.	

SECTION2 Diode	
No fixed ratings recorded.	
Second physical detector diode section added in approved reconciliation.	

SECTION3 Pentode	
PLATE RESISTANCE	600000 Ω
TRANSCONDUCTANCE	0.005 S
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	200 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	2.25 W
MAXIMUM SCREEN DISSIPATION	0.45 W
MAXIMUM CATHODE CURRENT	16.5 mA
<i>Published ratings and characteristics promoted from the approved source.</i>	

Double-diode variable-mu pentode for detection and intermediate-frequency amplification. The supplied French datasheet was translated to English for descriptive output.



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

Section 3 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cutoff characteristic	Variable-mu	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	RF / IF amplifier	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

195X Tesla

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

195X TESLA

Section 3 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	12 mA	Plate 170 V



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 · Diode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	AM detector / AVC	—

1961 FERRANTI TECHNICAL HANDBOOK

Section 3 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cutoff characteristic	Variable-mu	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	RF / IF / AF amplifier	—



SOURCE DATA APPENDIX

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 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum inverse voltage	350 V	—
Maximum average diode current	0.8 mA	—
Maximum peak diode current	5 mA	—

Section 3 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	RF/IF amplifier
Screen voltage	100 V	RF/IF amplifier
Plate current	12 mA	RF/IF amplifier
Screen current	3.3 mA	RF/IF amplifier
Maximum plate voltage	250 V	—
Maximum screen voltage	250 V	—
Maximum plate dissipation	2 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5000 uS	RF/IF amplifier
Plate resistance	0.4 Mohm	RF/IF amplifier



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	19 V	Nominal
HeaterCurrentNominal	100 mA	Nominal
Maximum Cathode Current	0.8 mA	—
Maximum Peak Inverse Voltage	200 V	—
Rectified Output Current	0.8 mA	—
PeakForwardCurrent	5 mA	—

1972 PHILIPS RECEIVING TUBES

Section 3 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	19 V	Nominal
HeaterCurrentNominal	100 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	2.25 W	—
Maximum Screen Dissipation	0.45 W	—
Maximum Cathode Current	16.5 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	4500 μ S	Typical
Amplification Factor	20	Typical
Plate Resistance	600000 ohm	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 · Diode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater or filament voltage	19 V	Published nominal value
Heater or filament current	100 mA	Published nominal value

1973 MAZDA VALVES BINDER 2

Section 3 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater or filament voltage	19 V	Published nominal value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater or filament current	100 mA	Published nominal value
Transconductance	4500 μ S	Published operating characteristic

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate dissipation	2.25 W	Published maximum rating



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 3 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical anode current	11 mA	Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	4500 μ S	Pentode
Amplification factor g ₂ -g ₁	20	Pentode