

ELECTRONIC TUBE REFERENCE

E81L

Power - Pentode Single (NOT beam) (under 10W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Special-quality long-life power/output pentode designed for stable professional, industrial, or wideband amplifier service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	Novol	BASE PINS	9
NOMINAL HEATER	6.3 V / 375 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	300000 Ω
TRANSCONDUCTANCE	0.011 S
MAXIMUM PLATE VOLTAGE	210 V
MAXIMUM SCREEN VOLTAGE	210 V
MAXIMUM PLATE DISSIPATION	4.5 W
MAXIMUM SCREEN DISSIPATION	1.2 W
MAXIMUM CATHODE CURRENT	30 mA
Long-life output pentode ratings from shared source sheet.	

E81L is listed in the supplied Amperex material as a premium-quality power pentode. Published ratings and characteristics were captured from the supplied table.

SOURCE OPERATING CONDITIONS

1953 RFT Rundfunk Technik

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

1953 RFT RUNDFUNK TECHNIK

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	210 V	—
Screen-grid voltage	210 V	—
Cathode resistance	120 Ω	—
Plate current	20 mA	—
Screen-grid current	5.3 mA	—
Cold plate voltage maximum	550 V	—
Cold screen-grid voltage maximum	550 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	11 mA/V	—
Equivalent noise resistance	1.2 k Ω	—
Voltage gain, preamplifier	175	Preamplifier

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

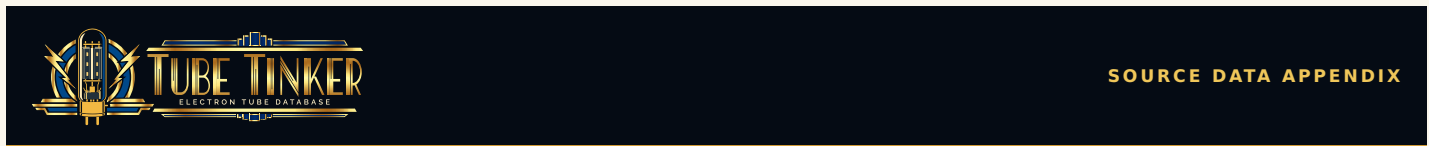
1958 Amperex Industrial

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

1958 AMPEREX INDUSTRIAL

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	210 V	Published table
Plate voltage	210 V	Published table
Screen voltage	210 V	Published table
Plate current	30 mA	Published table
Power output	36 W	Published table

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	11000 ohm	Published table
Heater/filament voltage	6.3 V	Published rating
Heater/filament current	375 mA	Published rating



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1958 Mullard Receiving Tubes

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

1958 MULLARD RECEIVING TUBES

Section 1 · Pentode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Telephone-equipment output amplifier	—



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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published rating
Heater current	375 mA	Published rating
Published characteristic value	11.5	PremiumQuality
Published characteristic value 2	6.5	PremiumQuality

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	210 V	PremiumQuality
Plate voltage	210 V	PremiumQuality
Plate current	30 mA	PremiumQuality



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

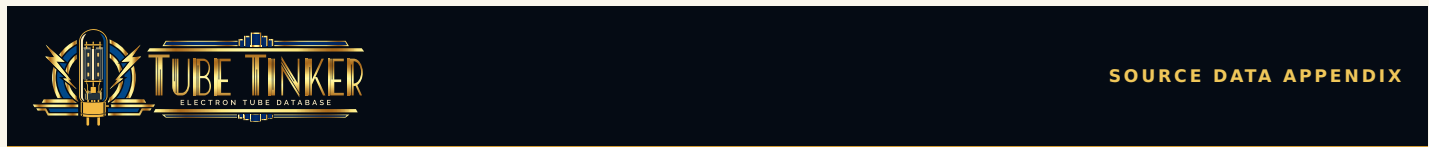
1963 Philips Electron Tubes Handbook V1a

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V1A

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	210 V	—
Screen voltage	210 V	—
Plate current	20 mA	—
Screen current	5.3 mA	—
Output power	1 W	Output

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	11000 μ S	—
Plate resistance	0.3 M Ω m	—



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
Heater voltage	6.3 V	Published heater rating
Heater current	375 mA	Published heater rating
Transconductance	11000 μ S	Published characteristic point
Plate resistance	300000 Ω m	Published characteristic point
Amplification factor	36	Published characteristic point

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	210 V	Published characteristic point
Screen voltage	210 V	Published characteristic point
Plate current	20 mA	Published characteristic point
Screen current	5.3 mA	Published characteristic point



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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Life test	10000 h	Published datasheet value
Heater voltage V_e	6.3 V	Published datasheet value
Heater current I	375 mA	Published datasheet value
Anode current I,	20 mA	Published datasheet value
Heater current I	395 mA	Published datasheet value
Grid No	0 V	Published datasheet value
Grid No	210 V	Published datasheet value
Grid No	3.1 mA	Published datasheet value
Internal resistance R	0.2 MΩ	Published datasheet value
heater $V_{if} =$	120 V	Published datasheet value
cathode heater and screen $C_g, / k_{is} $	14.3 pF	Published datasheet value
I =	25 mA	Published datasheet value
Cathode to heater C_{is}	4.2 pF	Published datasheet value
The tube is subjected during	32 h	Published datasheet value
under the following conditions during	10 h	Published datasheet value
Anode voltage $V_{ao} \max$	550 V	Published datasheet value
$V_a \max$	210 V	Published datasheet value
Anode dissipation $W_y \max$	4.5 W	Published datasheet value
Grid No	550 V	Published datasheet value
$V_{gz} \max$	210 V	Published datasheet value
Grid No	1.2 W	Published datasheet value
Cathode current $I_y \max$	30 mA	Published datasheet value
automatic bias $R_{gl} \max$	0.5 MΩ	Published datasheet value
fixed bias $R_{gl} \max$	0.25 MΩ	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage between cathode and heater Vs max	120 V	Published datasheet value
Heater voltage: The average heater voltage should be	6.3 V	Published datasheet value
heater voltage exceeding the range of	6.6 V	Published datasheet value
Anode current Iy	20 mA	Published datasheet value
Grid No	5.3 mA	Published datasheet value
Anode current I	15 mA	Published datasheet value
Grid No	4 mA	Published datasheet value
Vp =	210 V	Published datasheet value
Vo3=	0 V	Published datasheet value
(oF) Uy =	210 V	Published datasheet value
Vp3=	0 V	Published datasheet value
(mA)	3 V	Published datasheet value
] –	5 V	Published datasheet value
y v	6 V	Published datasheet value

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