



ELECTRONIC TUBE REFERENCE

E91H

Heptode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

HEPTODE

Special-quality dual-control heptode for professional gated-amplifier, mixing, modulation, and industrial control applications.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	7
NOMINAL HEATER	6.3 V / 270 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Heptode	
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Promoted from clearly identified published ratings/characteristics; additional operating points, capacitances, detector data, microwave data, and special-quality limits are retained in TUBE_SECTION_PARAMETER.</i>	

E91H is listed in the supplied Amperex material as a dual-control heptode for gated amplifier service. Published ratings and characteristics were captured from the supplied table.



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

Section 1 · Heptode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament voltage	6.3 V	Published rating
Heater/filament current	270 mA	Published rating
Control-grid cutoff voltage	-10 V	GatedAmplifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	150 V	GatedAmplifier
Plate current both controls at zero	5.75 mA	GatedAmplifier



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 · Heptode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	270 mA	—
Application	Computer gating valve	—
LongLifeDesign	1 boolean	—



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 · Heptode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published rating
Heater current	270 mA	Published rating
Published characteristic value	3.4	GatedAmplifier
Published characteristic value 2	7.6	GatedAmplifier
Published characteristic value 3	1	GatedAmplifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	250 V	GatedAmplifier
Control-grid voltage	-100 V	GatedAmplifier



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 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	Mixer
Screen-grid voltage	60 V	Mixer
Signal-grid voltage	-5 V	Mixer
Oscillator voltage	10 V RMS	Mixer;OscillatorDrive
Plate current	3.3 mA	Mixer
Oscillator-grid current	530 μ A	Mixer
Screen-grid current	6.5 mA	Mixer
Peak cathode current maximum	70 mA	Section1
Grid-2/4 dissipation maximum	1 W	Section1
Grid-1 dissipation maximum	0.5 W	Section1
Grid-3 dissipation maximum	0.5 W	Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Conversion transconductance	450 μ S	Mixer
Plate resistance	0.65 M Ω	Mixer



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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 · Heptode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	270 mA	Published heater rating

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	150 V	GatedAmplifier
Screen supply voltage	75 V	GatedAmplifier
Control-grid voltage	-10 V	GatedAmplifier



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 1 · Heptode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
alimentation parallele $I_r =$	270 mA	Published datasheet value
$C_a =$	0.08 pF	Published datasheet value
$C_{gi} =$	0.45 pF	Published datasheet value
$C_{g3} =$	0.2 pF	Published datasheet value
Pour $V_{\phi} =$	6.3 V	Published datasheet value
Bei $V_e =$	6.3 V	Published datasheet value
zu ¥	14 mA	Published datasheet value
Isolation $E_{ka} =$	120 V	Published datasheet value
$V_{ba} =$	150 V	Published datasheet value
$V_o ($	5 V	Published datasheet value
$V_{gi} = \sim$	1.5 V	Published datasheet value
$V_{g3} =$	1.5 V	Published datasheet value
$R_a =$	20 kQ	Published datasheet value
$R_{ga,g4} =$	470 Q	Published datasheet value
$I_{gy} = \text{max}$	0.2 pA	Published datasheet value
$V_a =$	250 V	Published datasheet value
$V_{goigs} =$	100 V	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
$I_a =$	3.3 mA	Published datasheet value
$I_{g1} =$	530 pA	Published datasheet value
$I_{g2+g4} =$	6.5 mA	Published datasheet value
$S_c =$	450 pA	Published datasheet value
$R_i =$	0.85 MQ	Published datasheet value
$V_{ao} = \text{max}$	1 W	Published datasheet value
$V_a = \text{max}$	250 V	Published datasheet value
$V_{(g2+g4)o} = \text{max}$	0.5 W	Published datasheet value
$V_{g2+g4} = \text{max}$	0.5 W	Published datasheet value
$\sim V_{g3} = \text{max}$	20 mA	Published datasheet value
$+V_{g3} = \text{max. } 0V \quad I_{xp} = \text{max}$	70 mA	Published datasheet value
$V_{g3p} = \text{max}$	120 V	Published datasheet value
$+V_{g3p} = \text{max}$	0.5 MQ	Published datasheet value
$\sim V_{gi} = \text{max}$	100 V	Published datasheet value
$+V_{gi} = \text{max. } 0V \quad R_{g3} = \text{max}$	0.5 MQ	Published datasheet value
$B_3 = \text{max}$	0 V	Published datasheet value
sQ PHILIPS E9	1 h	Published datasheet value
$V_o =$	150 V	Published datasheet value
$V_{g1} =$	0 V	Published datasheet value
SQ PHILIPS (E9	1 h	Published datasheet value

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