



## ELECTRONIC TUBE REFERENCE

## EL41

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

CONSOLIDATED TECHNICAL  
DATA

**1 SECTION**  
CONSTRUCTION  
**PENTODE**

High-sensitivity receiving power pentode for audio-frequency loudspeaker output.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | B8A               | BASE PINS            | 8             |
| NOMINAL HEATER      | 6.3 V / 710 mA    | PARALLEL HEATER      | – / –         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

| SECTION 1 Pentode                                                           |                |
|-----------------------------------------------------------------------------|----------------|
| PLATE RESISTANCE                                                            | 40000 $\Omega$ |
| TRANSCONDUCTANCE                                                            | 0.01 S         |
| AMPLIFICATION FACTOR                                                        | 400            |
| MAXIMUM PLATE VOLTAGE                                                       | 300 V          |
| MAXIMUM SCREEN VOLTAGE                                                      | 300 V          |
| MAXIMUM PLATE DISSIPATION                                                   | 9 W            |
| MAXIMUM SCREEN DISSIPATION                                                  | 3.3 W          |
| MAXIMUM CATHODE CURRENT                                                     | 55 mA          |
| <i>Published ratings/characteristics promoted from the approved source.</i> |                |

Power pentode for AF output amplification. Indirectly heated Mazda/Belvu receiving tube; descriptive text translated to English from the French source.



## SOURCE OPERATING CONDITIONS

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# 1951 Mullard Valve and Service Manual

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

## 1951 MULLARD VALVE AND SERVICE MANUAL

## Section 1 · Pentode

| APPLICATION |                    |                  |
|-------------|--------------------|------------------|
| PARAMETER   | PUBLISHED VALUE    | CONDITION / NOTE |
| Service     | Audio power output | —                |



## SOURCE OPERATING CONDITIONS

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# 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      | 710 mA          | Nominal          |
| Maximum Plate Voltage     | 300 V           | —                |
| Maximum Screen Voltage    | 300 V           | —                |
| Maximum Plate Dissipation | 9 W             | —                |

| CHARACTERISTIC       |                 |                  |
|----------------------|-----------------|------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
| Transconductance     | 10000 $\mu$ S   | Typical          |
| Amplification Factor | 400             | Typical          |
|                      |                 |                  |

| PARAMETER        | PUBLISHED VALUE | CONDITION / NOTE |
|------------------|-----------------|------------------|
| Plate Resistance | 40000 ohm       | Typical          |



SOURCE DATA APPENDIX

#### SOURCE OPERATING CONDITIONS

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# 1958 Brimar Radio Valve No 7

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

1958 BRIMAR RADIO VALVE NO 7

## Section 1 · Pentode

| CHARACTERISTIC |                 |                  |
|----------------|-----------------|------------------|
| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE |
| Heater Voltage | 6.3 V           | —                |
| Heater Current | 700 mA          | —                |

| OTHER         |                 |                  |
|---------------|-----------------|------------------|
| PARAMETER     | PUBLISHED VALUE | CONDITION / NOTE |
| Plate Voltage | 250 V           | ClassA           |
| Plate Current | 36 mA           | ClassA           |
| Power Output  | 4.2 W           | ClassA           |



SOURCE DATA APPENDIX

#### SOURCE OPERATING CONDITIONS

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# 1963 Mullard

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

1963 MULLARD

## Section 1 · Pentode

| CHARACTERISTIC |                 |                                             |
|----------------|-----------------|---------------------------------------------|
| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE                            |
| Anode current  | 36 mA           | V <sub>a</sub> =250V; V <sub>g2</sub> =250V |
| Screen current | 5.2 mA          | V <sub>a</sub> =250V; V <sub>g2</sub> =250V |

| OTHER                  |                 |                    |
|------------------------|-----------------|--------------------|
| PARAMETER              | PUBLISHED VALUE | CONDITION / NOTE   |
| Output power           | 4.2 W           | ClassA; Pentode    |
| Push-pull output power | 13 W            | PushPull; TwoTubes |


SOURCE DATA APPENDIX

#### SOURCE OPERATING CONDITIONS

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# 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   | 710 mA          | Published heater rating |
| Transconductance | 10000 $\mu$ S   | ClassA                  |
| Plate resistance | 40000 ohm       | ClassA                  |

| OTHER                  |                 |                           |
|------------------------|-----------------|---------------------------|
| PARAMETER              | PUBLISHED VALUE | CONDITION / NOTE          |
| Plate voltage          | 250 V           | ClassA                    |
| Screen voltage         | 250 V           | ClassA                    |
| Plate current          | 36 mA           | ClassA                    |
| Screen current         | 5.2 mA          | ClassA                    |
| Load resistance        | 7000 ohm        | ClassA                    |
| Power output           | 3.9 W           | ClassA                    |
| Push-pull power output | 9.4 W           | ClassAB PushPull TwoTubes |


SOURCE DATA APPENDIX

# 1967 Mullard Receiving Tubes for Maintenance

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

1967 MULLARD RECEIVING TUBES FOR MAINTENANCE

Section 1 · Pentode

| CHARACTERISTIC           |                 |                  |
|--------------------------|-----------------|------------------|
| PARAMETER                | PUBLISHED VALUE | CONDITION / NOTE |
| Output pentode rated for | 9               | Characteristic   |
| Va                       | 250 V           | CHARACTERISTICS  |
| Vg                       | 250 V           | CHARACTERISTICS  |
| Vg I                     | -7 V            | CHARACTERISTICS  |
| gm                       | 10 mA           | CHARACTERISTICS  |

| OTHER                    |                 |                                                 |
|--------------------------|-----------------|-------------------------------------------------|
| PARAMETER                | PUBLISHED VALUE | CONDITION / NOTE                                |
| Va                       | 250 V           | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| Vg                       | 250 V           | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| Vg I                     | -7 V            | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| Ra                       | 7               | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| Ra                       | 3.5             | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| Output pentode rated for | 9               | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| Vg Z                     | 300 V           | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| D Ia l                   | 1               | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| Vg • ( b ) max           | 550 V           | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| Vg • max                 | 300 V           | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
|                          |                 |                                                 |

| PARAMETER       | PUBLISHED VALUE | CONDITION / NOTE                                |
|-----------------|-----------------|-------------------------------------------------|
| Vg1 max. (lg1 = | 3 V             | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |
| EL4             | 9               | OPERATING CONDITIONS AS SINGLE VALVE CLASS " A" |



## 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 |
| Tension filament ... .. Vf                                       | 6.3 V           | —                |
| Courant filament ... .. If                                       | 710 mA          | —                |
| Capacité anode/ grille n° 1 .....s C@/ B1                        | 1 pF            | —                |
| Capacité grille n° 1/ filament ..... C8,/f                       | 0.15 pF         | —                |
| Tension d'anode à courant nul ... .. Vabl                        | 550 V           | —                |
| Tension d'anode ..... .. Va                                      | 300 V           | —                |
| Tension de grille n° 2 à courant nul ..... Vabl                  | 550 V           | —                |
| Tension de grille n°2 ... VeE,                                   | 300 V           | —                |
| à signal nul ..... crorererecorrensersensencerrcrrse... P82 SIZ0 | 1.4 W           | —                |
| e ienenees PB0SigMax                                             | 3.3 W           | —                |
| Tension entre filament et cathode ..... VfK                      | 100 V           | —                |

| CHARACTERISTIC    |                 |                  |
|-------------------|-----------------|------------------|
| PARAMETER         | PUBLISHED VALUE | CONDITION / NOTE |
| Capacité d'entrée | 10.2 pF         | —                |

| PARAMETER                                                            | PUBLISHED VALUE | CONDITION / NOTE |
|----------------------------------------------------------------------|-----------------|------------------|
| Capacité de sortie ..... T,                                          | 8 pF            | —                |
| Tension d'anod@ .....<br>eerrerrriereesecennecrenreese<br>VA         | 250 V           | —                |
| Tension de grille n°2<br>.....<br>iasioceserseorecamressorccee<br>VZ | 250 V           | —                |
| Courant d'anode ..... Ia                                             | 36 mA           | —                |
| Courant de grille n° 2 ... .. 18                                     | 5.2 mA          | —                |
| Pente .....c ... S                                                   | 10 mA           | —                |



## SOURCE OPERATING CONDITIONS

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# 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 |
| EL 41                                                                       | 9 W             | —                |
| The EL 41 is an indirectly heated output pentode having a slope of [1]      | 10 mA/V         | —                |
| The EL 41 is an indirectly heated output pentode having a slope of [2]      | 9 W             | —                |
| for an A.C. grid voltage of only 3.8 Vg5, the output power is               | 3.9 W           | —                |
| at an A.C. voltage of this value (the grid bias is                          | 7 V             | —                |
| distortion. Grid current does not commence to flow until the output reaches | 4.8 W           | —                |

| PARAMETER                                                           | PUBLISHED VALUE | CONDITION / NOTE |
|---------------------------------------------------------------------|-----------------|------------------|
| As previously stated, the maximum anode dissipation of the EL 41 is | 9 W             | —                |
| exceed                                                              | 9 W             | —                |
| b) to allow the anode dissipation to exceed the specified           | 9 W             | —                |
| of the EL 41 in a receiver shall be                                 | 9 W             | —                |
| dissipation should be adjusted to                                   | 9 W             | —                |
| lator voltage of [1]                                                | 7 V             | —                |
| lator voltage of [2]                                                | 8 V             | —                |
| The lower limit specified for the accumulator voltage should be     | 5.5 V           | —                |
| Heater voltage . . . . . F                                          | 6.3 V           | —                |
| Output power at 109, dIstortIon Wo(dipr=10%,)                       | 39 W            | —                |
| starting point . . . . . Wy(lu=403ud)                               | 4.8 W           | —                |
| Sensitivity e e e o V(                                              | 50 mW           | —                |
| Screen grid current . . . . . I, =2x52                              | 2x8 mA          | —                |

| OTHER                                             |                 |                  |
|---------------------------------------------------|-----------------|------------------|
| PARAMETER                                         | PUBLISHED VALUE | CONDITION / NOTE |
| In a class A push-pull amplifier, with V,=V,, [1] | 250 V           | ClassA;PushPull  |
| In a class A push-pull amplifier, with V,=V,, [2] | 4.4 W           | ClassA;PushPull  |
| deliver [1]                                       | 1.55 W          | ClassA;PushPull  |
| deliver [2]                                       | 250 V           | ClassA;PushPull  |
| Control grid bias . . . . . Vg = —                | 7 V             | ClassA           |
| Anode current .o a                                | 36 mA           | ClassA           |
| Screen grid current . . . . . Ip                  | 52 mA           | ClassA           |
|                                                   |                 |                  |

| PARAMETER                                     | PUBLISHED VALUE  | CONDITION / NOTE |
|-----------------------------------------------|------------------|------------------|
| Screen grid voltage . . . .<br>TV,            | <b>250 v</b>     | ClassA;PushPull  |
| Matching resistance . . . .<br>R <sub>y</sub> | <b>7 ko</b>      | ClassA;PushPull  |
| A.C. input voltage N 2 = 0                    | <b>3.6 Vs</b>    | ClassA;PushPull  |
| Anode current . N = 2X36                      | <b>2x39.5 mA</b> | ClassA;PushPull  |

| CAPACITANCE                                      |                     |                  |
|--------------------------------------------------|---------------------|------------------|
| PARAMETER                                        | PUBLISHED VALUE     | CONDITION / NOTE |
| Input capacitance . . . .<br>C <sub>ot</sub>     | <b>10.2 pF</b>      | —                |
| Output capacitance R o                           | <b>7.8 pF</b>       | —                |
| Anode-control grid oo C <sub>op</sub>            | <b>&lt; 1 pF</b>    | —                |
| Control grid-heater . . . .<br>. C <sub>yy</sub> | <b>&lt; 0.15 pF</b> | —                |
| Anode voltage . . . . Vs                         | <b>250 V</b>        | ClassA           |
| Screen grid voltage . . . .<br>V <sub>g</sub>    | <b>250 V</b>        | ClassA           |