



## ELECTRONIC TUBE REFERENCE

59

Power - Pentode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA

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

Versatile audio power pentode for Class A operation, also usable in triode-connected Class A or Class B service.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | 7A                | BASE PINS            | 7             |
| NOMINAL HEATER      | 2.5 V / 2 A       | PARALLEL HEATER      | – / –         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

|                                                                                                                                                                                           |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>SECTION 1</b> Pentode                                                                                                                                                                  |                |
| PLATE RESISTANCE                                                                                                                                                                          | 40000 $\Omega$ |
| TRANSCONDUCTANCE                                                                                                                                                                          | 0.0025 S       |
| AMPLIFICATION FACTOR                                                                                                                                                                      | 100            |
| MAXIMUM PLATE VOLTAGE                                                                                                                                                                     | 250 V          |
| MAXIMUM SCREEN VOLTAGE                                                                                                                                                                    | 250 V          |
| MAXIMUM PLATE DISSIPATION                                                                                                                                                                 | 10 W           |
| MAXIMUM SCREEN DISSIPATION                                                                                                                                                                | 1.5 W          |
| <i>Promoted from clearly identified printed ratings/characteristics; additional published operating points, capacitances, and specialized ratings retained in TUBE_SECTION_PARAMETER.</i> |                |

Power-amplifier pentode that may also be operated in triode connection for Class A or Class B service.

## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 1937 Raytheon Radio Receiving Tubes

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

## 1937 RAYTHEON RADIO RECEIVING TUBES

## Section 1 · Pentode

| OTHER                                    |                 |                                               |
|------------------------------------------|-----------------|-----------------------------------------------|
| PARAMETER                                | PUBLISHED VALUE | CONDITION / NOTE                              |
| Maximum plate voltage                    | 250 V           | ClassA                                        |
| Maximum plate voltage                    | 400 V           | ClassB                                        |
| Maximum screen voltage                   | 250 V           | —                                             |
| Plate voltage                            | 250 V           | ClassA; TriodeConnection                      |
| Grid 1 bias                              | -28 V           | ClassA; TriodeConnection                      |
| Plate current                            | 26 mA           | ClassA; TriodeConnection                      |
| Load resistance                          | 5000 ohm        | ClassA; TriodeConnection                      |
| Power output                             | 1.25 W          | ClassA; TriodeConnection                      |
| Plate voltage                            | 250 V           | ClassA; PentodeConnection                     |
| Screen voltage                           | 250 V           | ClassA; PentodeConnection                     |
| Grid 1 bias                              | -18 V           | ClassA; PentodeConnection                     |
| Plate current                            | 35 mA           | ClassA; PentodeConnection                     |
| Screen current                           | 9 mA            | ClassA; PentodeConnection                     |
| Load resistance                          | 6000 ohm        | ClassA; PentodeConnection                     |
| Power output                             | 3 W             | ClassA; PentodeConnection                     |
| Maximum peak plate current               | 200 mA          | ClassB; PerTube                               |
| Maximum average plate dissipation        | 10 W            | ClassB; PerTube                               |
| Maximum average grid 1 and 2 dissipation | 1.5 W           | ClassB; PerTube                               |
| Plate voltage                            | 300 V           | ClassB; PushPull; TwoTubes                    |
| Grid 1 and 2 bias                        | 0 V             | ClassB; PushPull; TwoTubes; PlateVoltage=300V |
| No-signal plate current                  | 10 mA           | ClassB; PerTube; PlateVoltage=300V            |

| PARAMETER                      | PUBLISHED VALUE | CONDITION / NOTE                              |
|--------------------------------|-----------------|-----------------------------------------------|
| Load resistance plate-to-plate | 4600 ohm        | ClassB; PushPull; PlateVoltage=300V           |
| Power output                   | 15 W            | ClassB; PushPull; PlateVoltage=300V           |
| Plate voltage                  | 400 V           | ClassB; PushPull; TwoTubes                    |
| Grid 1 and 2 bias              | 0 V             | ClassB; PushPull; TwoTubes; PlateVoltage=400V |
| No-signal plate current        | 13 mA           | ClassB; PerTube; PlateVoltage=400V            |
| Load resistance plate-to-plate | 6000 ohm        | ClassB; PushPull; PlateVoltage=400V           |
| Power output                   | 20 W            | ClassB; PushPull; PlateVoltage=400V           |

| CHARACTERISTIC       |                 |                           |
|----------------------|-----------------|---------------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE          |
| Amplification factor | 6               | ClassA; TriodeConnection  |
| Plate resistance     | 2300 ohm        | ClassA; TriodeConnection  |
| Transconductance     | 2600 uS         | ClassA; TriodeConnection  |
| Amplification factor | 100             | ClassA; PentodeConnection |
| Plate resistance     | 40000 ohm       | ClassA; PentodeConnection |
| Transconductance     | 2500 uS         | ClassA; PentodeConnection |


SOURCE DATA APPENDIX

#### SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

## 1940 RCA

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

1940 RCA

### Section 1 · Pentode

| OTHER        |                 |                          |
|--------------|-----------------|--------------------------|
| PARAMETER    | PUBLISHED VALUE | CONDITION / NOTE         |
| Power Output | 20 W            | ClassB;PushPull;TwoTubes |


SOURCE DATA APPENDIX

# 1950 Sylvania

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

1950 SYLVANIA  
Section 1 · Pentode

| OTHER                              |                 |                         |
|------------------------------------|-----------------|-------------------------|
| PARAMETER                          | PUBLISHED VALUE | CONDITION / NOTE        |
| Class B plate voltage              | 400 V           | ClassB;TriodeConnection |
| Class B peak dynamic plate current | 200 mA          | ClassB;TriodeConnection |
| Class A screen voltage             | 250 V           | ClassA;Pentode          |



SOURCE DATA APPENDIX

# 195X General Electric Essential Characteristics

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

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS  
Section 1 · Pentode

| OTHER                |                 |                  |
|----------------------|-----------------|------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
| Plate voltage        | 250 V           | ClassA           |
| Screen voltage       | 250 V           | ClassA           |
| Control-grid voltage | -18 V           | ClassA           |
| Plate current        | 35 mA           | ClassA           |
| Screen current       | 9 mA            | ClassA           |
| Load resistance      | 6000 Ω          | ClassA           |
| Power output         | 3 W             | ClassA           |

| CHARACTERISTIC   |                    |                  |
|------------------|--------------------|------------------|
| PARAMETER        | PUBLISHED VALUE    | CONDITION / NOTE |
| Plate resistance | 40000 $\Omega$     | ClassA           |
| Transconductance | 2500 $\mu\text{S}$ | ClassA           |

## TUBE TINKER

An independent reference for electronic tubes, vacuum tubes, and their source documents.

[Catalog](#)   [Tube types](#)   [Full books](#)   [Blog](#)   [Feedback & corrections](#)

© 2026 Tube Tinker