



ELECTRONIC TUBE REFERENCE

17LD8

Voltage - Triode Pentode electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

Triode-pentode combining a voltage-amplifier triode with a 7-watt-dissipation power pentode section for output service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	9
NOMINAL HEATER	16.8 V / 450 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	11300 Ω
TRANSCONDUCTANCE	0.0019 S
AMPLIFICATION FACTOR	21.5
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	20 mA

Published ratings and characteristics promoted semantically from the approved source.

SECTION2 Pentode	
PLATE RESISTANCE	11700 Ω
TRANSCONDUCTANCE	0.0071 S
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	200 V
MAXIMUM PLATE DISSIPATION	7 W
MAXIMUM SCREEN DISSIPATION	1.8 W
MAXIMUM CATHODE CURRENT	70 mA
<i>Published ratings and characteristics promoted semantically from the approved source.</i>	

17LD8 — Triode-Pentode Vacuum Tube

The **17LD8** is a multi-section vacuum tube containing a triode and a pentode section within a single envelope. It is designed for series heater operation and is primarily intended for combined functions as a vertical deflection oscillator and amplifier.

Mechanical Specifications and Pinout

The 17LD8 is constructed in a **T-9** glass bulb with an **E9-75** 9-pin base. It features coated unipotential cathodes and can be mounted in any position. The tube utilizes the **9QT** basing arrangement, which provides the following pin connections:

Pin	Connection
1	Triode Grid (Gt)
2	Triode Cathode (Kt)
3	Pentode Grid No. 1 (G1)
4	Heater (H)
5	Heater (H)
6	Pentode Plate (P)
7	Pentode Grid No. 3, Pentode Cathode (G3, K)
8	Pentode Grid No. 2 (<u>G2</u>)
9	Triode Plate (P)

Heater Characteristics and Ratings

The heater is designed for series-string operation with a controlled warm-up time. The heater specifications and design-maximum limits are detailed below:

- **Nominal Heater Voltage:** 16.8 V
- **Average Heater Current:** 450 mA
- **Heater Warm-up Time:** 11 Seconds
- **Heater Current Limits:** 420 mA minimum to 480 mA maximum

Heater-Cathode Voltage Limits

- **Heater Negative with Respect to Cathode (Total DC and Peak):** 200 Volts maximum
- **Heater Positive with Respect to Cathode (DC):** 100 Volts maximum
- **Heater Positive with Respect to Cathode (Total DC and Peak):** 200 Volts maximum

Average Electrical Characteristics

The 17LD8 contains two distinct electrical sections with the following typical characteristics:

Triode Section

- **Plate Voltage:** 150 Volts
- **Grid No. 1 Voltage:** -5 Volts
- **Plate Current:** 3.3 mA
- **Transconductance:** 1,900 μmhos
- **Amplification Factor:** 21.5
- **Plate Resistance (approx.):** 11,300 Ohms
- **Grid Voltage for $I_b = 10 \mu\text{A}$ (approx.):** -10 Volts

Pentode Section

- **Plate Voltage:** 120 Volts
- **Grid No. 2 Voltage:** 110 Volts
- **Grid No. 1 Voltage:** -8 Volts
- **Plate Current:** 46 mA
- **Grid No. 2 Current:** 4 mA
- **Transconductance:** 7,100 μmhos
- **Plate Resistance (approx.):** 11,700 Ohms
- **Grid Voltage for $I_b = 100 \mu\text{A}$ (approx.):** -25 Volts

Instantaneous Plate Knee Values

At a plate voltage of 45 V, grid No. 2 voltage of 110 V, and grid voltage of 0 V, the instantaneous knee values are:

- **Plate Current (I_b):** 122 mA
- **Grid No. 2 Current (I_{c2}):** 17 mA

Design-Maximum Ratings and Application Guidelines

The 17LD8 is rated under the design-maximum system for vertical deflection service. When operating in stages that utilize grid leak bias, designers must provide an adequate bias resistor or other suitable protective means to safeguard the tube in the event that excitation is lost.

Triode Section (Vertical Oscillator Service)

- **Plate Voltage:** 250 Volts maximum
- **Peak Negative Grid No. 1 Voltage:** 400 Volts maximum
- **Plate Dissipation:** 1.0 Watts maximum
- **Average Cathode Current:** 20 mA maximum
- **Peak Cathode Current:** 70 mA maximum
- **Grid Circuit Resistance (Self Bias):** 2.2 Megohms maximum
- **Grid Circuit Resistance (Fixed Bias):** 1.0 Megohm maximum

Pentode Section (Vertical Amplifier Service)

- **Plate Voltage:** 250 Volts maximum
- **Grid No. 2 Voltage:** 200 Volts maximum
- **Peak Positive Pulse Plate Voltage:** 2,000 Volts maximum (The duty cycle of this voltage pulse must not exceed 15% of one scanning cycle in a standard 525-line, 30-frame television system)
- **Peak Negative Grid No. 1 Voltage:** 150 Volts maximum
- **Plate Dissipation:** 7 Watts maximum
- **Grid No. 2 Dissipation:** 1.8 Watts maximum
- **Average Cathode Current:** 70 mA maximum
- **Peak Cathode Current:** 245 mA maximum
- **Grid Circuit Resistance (Self Bias):** 2.2 Megohms maximum
- **Grid Circuit Resistance (Fixed Bias):** 1.0 Megohm maximum

Direct Interelectrode Capacitances

The direct interelectrode capacitances are measured without an external shield:

Triode Section

- **Grid to Plate:** 3.8 pF
- **Input (g to h + Tk):** 2.0 pF
- **Output (p to h + Tk):** 0.4 pF

Pentode Section

- **Grid No. 1 to Plate:** 0.26 pF maximum
- **Input (g1 to h + Pk, g3):** 13 pF
- **Output (p to h + Pk, g3):** 7 pF

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1950 Sylvania

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

1950 SYLVANIA

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	11300 ohm	—
Transconductance	1900 μ S	—
Amplification Factor	21.5	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	150 V	—
Plate Voltage	150 V	Triode section

1950 SYLVANIA

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	11700 ohm	—
Transconductance	7100 μ S	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	2000 V	—
Plate Voltage	120 V	Pentode section

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