



ELECTRONIC TUBE REFERENCE

00A

Voltage - Triode (under 100V) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Early directly heated triode for general receiving service. Available source material confirms basic triode construction but does not establish a narrower application confidently.

GENERAL CHARACTERISTICS

BASE DESIGNATION	4D	BASE PINS	4
NOMINAL HEATER	5 V / 250 mA	PARALLEL HEATER	– / –
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
PLATE RESISTANCE	30000 Ω
TRANSCONDUCTANCE	0.000666 S
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	45 V
Published handbook ratings and operating characteristics reviewed.	

00A — Gas-Filled Triode Detector

The **00A** (also referred to as the **00-A**) is a gas-filled, vapor-type three-electrode triode vacuum tube. It is designed specifically for service as a highly sensitive grid-leak detector in storage-battery-operated radio receivers. Primarily utilized for renewal purposes in legacy equipment, the tube features a filamentary cathode and operates at low plate voltages.

Physical Construction and Basing

The 00A is constructed with an S-14 glass bulb and a medium 4-pin bayonet base. To ensure proper operation and mechanical stability, the tube must be installed in a standard four-contact socket that holds the device in a vertical position.

The physical dimensions of the tube are characterized by the following maximum limits:

- **Maximum Overall Length:** 4 11/16 inches
- **Maximum Seated Height:** 4 1/8 inches
- **Maximum Bulb Diameter:** 1 13/16 inches

Pin Connections

The 00A utilizes the standard **4D** base connection configuration. When viewed from the bottom of the socket, the pin assignments are as follows:

- **Pin 1:** Filament
- **Pin 2:** Plate
- **Pin 3:** Grid
- **Pin 4:** Filament

Filament and Absolute Maximum Ratings

The 00A features a directly heated filament designed for direct-current (DC) operation, typically supplied by a storage battery.

Parameter	Value	Unit
Filament Voltage (D.C.)	5.0	V
Filament Current	0.25	A
Maximum Plate Voltage	45	V

Because the 00A is a gas-filled vapor-type tube, its maximum plate voltage is strictly limited to 45 volts to prevent ionization breakdown or damage to the tube structure.

Electrical Characteristics and Operating Points

Under typical operating conditions as a detector, the 00A exhibits a high plate resistance and moderate amplification factor. The standard operating parameters are defined as follows:

- **Plate Voltage:** 45 V
- **Grid Voltage (Bias):** 0 V
- **Plate Current (Approximate):** 1.5 mA
- **Plate Resistance:** 30,000 ohms

- **Amplification Factor:** 20
- **Transconductance:** 666 umhos (micromhos)

Grid-Leak Detector Operation

When configured specifically for grid-leak detector service, the external circuit parameters must be carefully selected to maximize the sensitivity of the gas-filled triode:

- **Plate Voltage:** 45 V
- **Grid Return:** Connected directly to the negative terminal of the filament supply.
- **Grid Leak Resistance:** 2 to 3 megohms
- **Grid Condenser (Capacitor):** 0.00025 uF

Interelectrode Capacitances

The direct interelectrode capacitances of the 00A, measured without an external shield, are as follows:

- **Grid-to-Plate Capacitance:** 8.5 uuf
- **Grid-to-Filament (Input) Capacitance:** 3.2 uuf
- **Plate-to-Filament (Output) Capacitance:** 2.0 uuf

These capacitance values are critical for determining the input loading and RF performance of the detector stage in storage-battery receivers.

Technical Summary

The **00A** is a specialized, gas-filled triode detector tube featuring a 5.0 V, 0.25 A DC filament, an S-14 glass envelope, and a medium 4-pin bayonet base. Operating at a maximum plate potential of 45 V, it provides an amplification factor of 20 and a plate resistance of 30,000 ohms under typical zero-bias conditions. Optimized for sensitive grid-leak detection with a 2 to 3 megohm grid leak and a 0.00025 uF condenser, the 00A serves as a critical renewal component for early storage-battery-operated radio receivers, requiring vertical mounting for reliable operation.

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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	45 V	—
Grid bias	0 V	—
Plate current	1.5 mA	Approximate

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	45 V	Detector; GridLeak
Grid leak resistance	2–3 MΩ	Detector; GridLeak
Grid condenser	0.0025 μF	Detector; GridLeak

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	8.5 pF	—
Input capacitance	3.2 pF	—
Output capacitance	2 pF	—

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

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Detector text	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	45 V	Published handbook rating
Plate voltage	45 V	ClassA
Control-grid bias	0 V	ClassA
Plate current	1.5 mA	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	30000 ohm	Published handbook characteristic
Transconductance	666 μ S	Published handbook characteristic
Amplification factor	20	Published handbook characteristic
Heater/filament voltage	5 V	Published heater/filament rating
Heater/filament current	250 mA	Published heater/filament rating

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