



## ELECTRONIC TUBE REFERENCE

## 0Y4G

Rectifier - Half Wave electronic tube

CONSOLIDATED TECHNICAL DATA

## 1 SECTION

CONSTRUCTION

## RECTIFIER

Gas-filled half-wave rectifier with a starter anode for electronic power supplies. It requires no conventional heater supply and is rated for approximately 300 V peak inverse voltage, 75 mA DC output, and 500 mA peak current.

## GENERAL CHARACTERISTICS

|                     |                        |                      |               |
|---------------------|------------------------|----------------------|---------------|
| BASE DESIGNATION    | 4BU                    | BASE PINS            | 4             |
| NOMINAL HEATER      | – / –                  | PARALLEL HEATER      | – / –         |
| HEATING             | Indirect; cold cathode | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes      | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

|                                                                    |        |
|--------------------------------------------------------------------|--------|
| SECTION 1 Rectifier                                                |        |
| PEAK INVERSE VOLTAGE                                               | 300 V  |
| NOMINAL OUTPUT CURRENT                                             | 75 mA  |
| PEAK FORWARD CURRENT                                               | 500 mA |
| Published handbook ratings and operating characteristics reviewed. |        |

## 0Y4G — Half-Wave Gas Rectifier

The **0Y4G** (also designated as **0Y4** or **0Y4-G**) is a cold-cathode, ionically heated gas rectifier tube designed for half-wave rectification. It features an auxiliary starter anode, enabling direct operation from standard 117-volt AC or DC power lines without requiring a separate filament heating supply.

## Physical Specifications and Pinout

The 0Y4G is constructed with an ionically heated emitter (cold cathode) housed in a T-7 glass bulb. It utilizes an octal 5-pin dwarf base and is designed to be mounted in any physical orientation.

### Physical Dimensions

- **Bulb Type:** T-7
- **Base Type:** Octal 5-pin dwarf
- **Maximum Diameter:** 1 5/64 inches
- **Maximum Seated Height:** 2 1/16 inches
- **Maximum Overall Length:** 2 5/8 inches
- **Mounting Position:** Any

### Pin Connections and Basing Diagram

The tube utilizes the **4BU** base connection configuration. Although pins 7 and 8 are labeled as filament connections, the tube operates as a cold-cathode device, and these two pins must be connected together externally.

| Pin Number | Connection                            |
|------------|---------------------------------------|
| Pin 1      | No Connection                         |
| Pin 2      | None                                  |
| Pin 3      | Starter Anode                         |
| Pin 4      | None                                  |
| Pin 5      | Plate                                 |
| Pin 6      | None                                  |
| Pin 7      | Filament (must be connected to Pin 8) |
| Pin 8      | Filament (must be connected to Pin 7) |

## Electrical Ratings and Operating Conditions

The 0Y4G is rated for half-wave rectifier service utilizing a condenser-input filter. The electrical limits and typical operating parameters are defined as follows:

### Absolute Maximum and Minimum Ratings

- **Maximum Inverse Peak Voltage:** 300 V
- **Maximum Peak Current:** 500 mA
- **Maximum DC Output Current:** 75 mA

- **Minimum DC Output Current:** 40 mA
- **Minimum Series Anode Resistance (for 117-Volt Line Operation):** 50
- **Maximum DC Starting Voltage:** 95 V
- **Approximate Tube Drop:** 12 V

## Circuit and Operating Requirements

To ensure reliable starting and stable operation, the following circuit conditions must be maintained:

- **Starter Anode Circuitry:** The starter anode (Pin 3) must be connected to the main anode (Plate, Pin 5) through a 10-megohm resistor. This resistor must be bypassed with a 0.002  $\mu$ F condenser. Under these conditions, the maximum DC starting voltage is 95 volts.
- **Filament Jumper:** Pins 7 and 8 must be connected together externally.
- **Current Limiting:** When operating directly from a 117-volt line, a minimum series anode resistance of 50 ohms is required to limit the peak current.
- **Operational Constraints:** Rapid intermittent operation of the tube is undesirable and should be avoided to prevent premature degradation or failure.

## Technical Summary

The **0Y4G** is an octal, cold-cathode, half-wave gas rectifier featuring an ionically heated emitter and a starter anode. Designed to operate directly from a 117-volt AC or DC line, it eliminates the need for a dedicated filament transformer. It supports a maximum peak current of 500 mA and a maximum DC output current of 75 mA, with a minimum current threshold of 40 mA required to sustain conduction. With an approximate operating tube drop of 12 volts and a compact T-7 dwarf octal form factor, the 0Y4G provides a highly integrated solution for line-voltage rectification where simplicity and cold-cathode operation are desired.

## 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 · Rectifier

| OTHER                    |                 |                     |
|--------------------------|-----------------|---------------------|
| PARAMETER                | PUBLISHED VALUE | CONDITION / NOTE    |
| DC output current        | 75 mA           | RectifierService    |
| Peak inverse voltage     | 300 V           | RectifierService    |
| Peak current             | 500 mA          | RectifierService    |
| Maximum starting voltage | 95 V            | GasRectifierService |

| CHARACTERISTIC            |                 |                     |
|---------------------------|-----------------|---------------------|
| PARAMETER                 | PUBLISHED VALUE | CONDITION / NOTE    |
| Minimum DC output current | 40 mA           | GasRectifierService |

## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 1961 Tung Sol

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

## 1961 TUNG SOL

## Section 1 · Rectifier

| CHARACTERISTIC      |                 |                  |
|---------------------|-----------------|------------------|
| PARAMETER           | PUBLISHED VALUE | CONDITION / NOTE |
| DC Starting Voltage | 95 V            | —                |

| OTHER                  |                 |                  |
|------------------------|-----------------|------------------|
| PARAMETER              | PUBLISHED VALUE | CONDITION / NOTE |
| DCOutputCurrentMaximum | 75 mA           | —                |

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