



## ELECTRONIC TUBE REFERENCE

# 1BH2

Rectifier - TV Line Scan Boost electronic tube

CONSOLIDATED TECHNICAL DATA

**1 SECTION**  
CONSTRUCTION  
**RECTIFIER**

1BH2 is a directly heated half-wave high-voltage flyback rectifier for television CRT anode supplies. It uses a 1.25 V, 0.2 A filament, 9RG basing with solder lugs and a top-cap anode, and is rated for 18 kV peak inverse voltage in pulsed service.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | —                 | BASE PINS            | 9             |
| NOMINAL HEATER      | 1.25 V / 200 mA   | PARALLEL HEATER      | — / —         |
| HEATING             | Direct            | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

|                                                                                                                                                                                                                                                                                           |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>SECTION 0</b> Rectifier                                                                                                                                                                                                                                                                |         |
| PEAK INVERSE VOLTAGE                                                                                                                                                                                                                                                                      | 18000 V |
| NOMINAL OUTPUT CURRENT                                                                                                                                                                                                                                                                    | 0.5 mA  |
| PEAK FORWARD CURRENT                                                                                                                                                                                                                                                                      | 45 mA   |
| FORWARD VOLTAGE DROP                                                                                                                                                                                                                                                                      | 80 V    |
| <i>Half-wave TV flyback high-voltage rectifier; 80 V forward drop at 7 mA; 525-line/30-frame pulsed service, maximum 15% horizontal duty cycle. RCA DC component of inverse voltage <math>\leq 15</math> kV. Plate-to-filament capacitance 1.0 pF (Sylvania). Filament 1.25 V, 0.2 A.</i> |         |

## 1BH2 — Television Flyback High-Voltage Rectifier

The **1BH2** is a directly heated, half-wave vacuum rectifier intended for high-voltage pulse service in television receivers. It rectifies the flyback pulses from the horizontal scanning system to supply the high-voltage anode of a cathode-ray picture tube. RCA (1968) and Sylvania (1970) both document this application.

## Construction and connections

The tube is a filamentary diode with **9RG basing**, a miniature nine-pin button base, solder lugs on filament pins **1 and 5**, and a high-voltage **top-cap anode**. The solder lugs permit filament connections without an ordinary tube socket. Sylvania identifies the base as E9-99 and the top cap as C1-45. The filament is the electron-emitting cathode, so this is a **directly heated** rectifier.

## Filament and electrical ratings

The filament operates at **1.25 V** and **0.200 A**. Sylvania specifies a permissible filament voltage range of **1.05-1.45 V**. Both references give a **peak inverse plate voltage rating of 18,000 V**, **peak plate current of 45 mA**, and **average plate current of 0.5 mA** under the stated television pulse conditions. The instantaneous forward tube voltage drop is **80 V at 7 mA** plate current. Sylvania gives a plate-to-filament capacitance of **1.0 pF**.

## Flyback pulse operation

The ratings apply to a **525-line, 30-frame** television scanning system. The voltage pulse duty cycle must not exceed **15% of one horizontal scanning cycle**, approximately **10 microseconds**. RCA further specifies that the DC component of the inverse plate voltage must not exceed **15,000 V**. These pulsed ratings must not be treated as continuous DC operating ratings.

## Safety

The very high operating voltages can produce **X-radiation**. Sylvania explicitly warns that prolonged close exposure can be hazardous without adequate shielding, and that television shielding components must be restored to their intended positions before operation. High-voltage insulation and discharge precautions are essential when servicing the circuit.

## Manufacturer documentation

This description synthesizes the **1968 RCA RC26** and **1970 Sylvania Technical Manual** entries for the 1BH2. Their stated primary rectifier ratings agree.



## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

## 1968 RCA RC26

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

1968 RCA RC26

## Section 0 · Rectifier

| CHARACTERISTICS   |                 |                                     |
|-------------------|-----------------|-------------------------------------|
| PARAMETER         | PUBLISHED VALUE | CONDITION / NOTE                    |
| Filament Voltage  | 1.25 V          | —                                   |
| Tube Voltage Drop | 80 V            | Instantaneous at plate current 7 mA |
| Filament Current  | 200 mA          | —                                   |

| OTHER                         |                 |                  |
|-------------------------------|-----------------|------------------|
| PARAMETER                     | PUBLISHED VALUE | CONDITION / NOTE |
| Maximum Peak Inverse Voltage  | 18000 V         | —                |
| Maximum Peak Plate Current    | 45 mA           | —                |
| Maximum Average Plate Current | 0.5 mA          | —                |



## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

## 1970 Sylvania Technical Manual

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

1970 SYLVANIA TECHNICAL MANUAL

## Section 0 · Rectifier

| CHARACTERISTICS          |                 |                                     |
|--------------------------|-----------------|-------------------------------------|
| PARAMETER                | PUBLISHED VALUE | CONDITION / NOTE                    |
| Filament Current         | 200 mA          | —                                   |
| Tube Voltage Drop        | 80 V            | Instantaneous at plate current 7 mA |
| PlateFilamentCapacitance | 1 pF            | —                                   |

| PARAMETER        | PUBLISHED VALUE | CONDITION / NOTE |
|------------------|-----------------|------------------|
| Filament Voltage | 1.25 V          | —                |

| OTHER                         |                 |                  |
|-------------------------------|-----------------|------------------|
| PARAMETER                     | PUBLISHED VALUE | CONDITION / NOTE |
| Maximum Peak Inverse Voltage  | 18000 V         | —                |
| Maximum Peak Plate Current    | 45 mA           | —                |
| Maximum Average Plate Current | 0.5 mA          | —                |