

ELECTRONIC TUBE REFERENCE

CONSOLIDATED TECHNICAL DATA  
2 SECTIONS  
CONSTRUCTION  
BEAMPOWER-PENTODE

17BF11A

Power - Beam (NOT sweep) electronic tube

Dual-pentode television tube with insufficient surviving source description in the available record to support a narrower functional classification.

GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | 12EZ              | BASE PINS            | 12            |
| NOMINAL HEATER      | 16.8 V / 450 mA   | PARALLEL HEATER      | – / –         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Dissimilar    |

12EZ - TERMINAL PINOUT

| TERMINAL     | SECTION | ELEMENT              | STATUS                  |
|--------------|---------|----------------------|-------------------------|
| PIN1 – Pin 1 | –       | H – Heater           | CONNECTED<br>• verified |
| PIN2 – Pin 2 | B       | K – Cathode          | CONNECTED<br>• verified |
| PIN2 – Pin 2 | B       | SH – Internal Shield | CONNECTED<br>• verified |
| PIN2         | –       | IS – Internal Screen | CONNECTED               |
| PIN3 – Pin 3 | B       | G1 – Control Grid    | CONNECTED<br>• verified |
| PIN4 – Pin 4 | –       | –                    | NC<br>• verified        |
| PIN5 – Pin 5 | B       | G3 – Suppressor Grid | CONNECTED<br>• verified |
| PIN6 – Pin 6 | B       | G2 – Screen Grid     | CONNECTED<br>• verified |

| TERMINAL       | SECTION | ELEMENT                 | STATUS                  |
|----------------|---------|-------------------------|-------------------------|
| PIN7 – Pin 7   | B       | P – Plate (Anode)       | CONNECTED<br>· verified |
| PIN8 – Pin 8   | A       | G1 – Control Grid       | CONNECTED<br>· verified |
| PIN9 – Pin 9   | A       | BP – Beam-Forming Plate | CONNECTED<br>· verified |
| PIN9           | A       | G3 – Suppressor Grid    | CONNECTED               |
| PIN9 – Pin 9   | A       | K – Cathode             | CONNECTED<br>· verified |
| PIN10 – Pin 10 | A       | G2 – Screen Grid        | CONNECTED<br>· verified |
| PIN11 – Pin 11 | A       | P – Plate (Anode)       | CONNECTED<br>· verified |
| PIN12 – Pin 12 | –       | H – Heater              | CONNECTED<br>· verified |

## SECTION RATINGS

| SECTION1 Pentode                                                                                                                                                             |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| MAXIMUM PLATE VOLTAGE                                                                                                                                                        | 330 V |
| MAXIMUM SCREEN VOLTAGE                                                                                                                                                       | 330 V |
| MAXIMUM PLATE DISSIPATION                                                                                                                                                    | 1.7 W |
| MAXIMUM SCREEN DISSIPATION                                                                                                                                                   | 1.1 W |
| Reference/equivalence-only source does not reproduce the referenced electrical ratings/characteristics; promoted values intentionally not inferred from external datasheets. |       |

| SECTION2 Beam Power                                                                                                                                                          |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| MAXIMUM PLATE VOLTAGE                                                                                                                                                        | 165 V |
| MAXIMUM SCREEN VOLTAGE                                                                                                                                                       | 150 V |
| MAXIMUM PLATE DISSIPATION                                                                                                                                                    | 6.5 W |
| MAXIMUM SCREEN DISSIPATION                                                                                                                                                   | 1.8 W |
| Reference/equivalence-only source does not reproduce the referenced electrical ratings/characteristics; promoted values intentionally not inferred from external datasheets. |       |

# 17BF11A — Beam Pentode and Sharp-Cutoff

# Pentode

The **17BF11A** is a multi-unit vacuum tube of Compactron construction containing a beam pentode and a sharp-cutoff pentode in a single envelope. Designed primarily for use in color television receivers, the tube is suited for applications such as audio power amplification and FM detection.

## Overview and Designations

The 17BF11A is electrically and structurally identical to the **17BF11** except for its physical envelope, featuring a shorter bulb design. It integrates two distinct pentode sections—a beam power pentode and a sharp-cutoff pentode—within a single T-9 glass envelope. This multi-unit configuration is designed to reduce component count and space requirements in television chassis, where it can simultaneously perform audio power output and FM detector functions.

## Physical Construction and Dimensions

The tube utilizes a Compactron T-9 construction with a glass envelope and a 12-pin button base. The physical dimensions of the device are specified as follows:

- **Maximum Diameter:** 1.188 inches
- **Maximum Seated Height:** 1.875 inches
- **Maximum Overall Height:** 2.250 inches
- **Base Type:** Button 12-Pin, E12-70

## Pinout and Basing Arrangement

The 17BF11A uses the **12EZ** basing diagram. The 12-pin layout provides independent connections for the electrodes of both sections, with the exception of the heater, which shares a pin with one of the control grids. Specifically, the heater is connected between Pin 12 and Pin 1, where Pin 1 also serves as the Grid No. 1 connection for Section 1.

The pin connections are assigned as follows:

- **Pin 1:** 1G1 (Grid No. 1, Section 1) / Heater Connection
- **Pin 2:** 2G2 (Grid No. 2, Section 2)
- **Pin 3:** NC (No Connection)
- **Pin 4:** 2G1 (Grid No. 1, Section 2)
- **Pin 5:** 2K (Cathode, Section 2)
- **Pin 6:** 2G3 (Grid No. 3, Section 2)
- **Pin 7:** 2P (Plate, Section 2)
- **Pin 8:** 1G3 (Grid No. 3, Section 1)
- **Pin 9:** 1K (Cathode, Section 1)
- **Pin 10:** 1G2 (Grid No. 2, Section 1)
- **Pin 11:** 1P (Plate, Section 1)

- **Pin 12:** H (Heater)

## Typical Characteristics and Operating Conditions

The typical operating parameters and performance characteristics under specified conditions include the following values:

- **Zero-Signal Screen Current:** 3.0 mA
- **Maximum Signal Screen Current:** 9.0 mA
- **Load Resistance:** 3000 Ohms
- **Total Harmonic Distortion (Approx.):** 10%
- **Maximum Signal Power Output:** 2.4 Watts

These operating conditions reflect the performance of the power amplifier portion of the tube, delivering up to 2.4 watts of audio output power into a 3000-ohm load with approximately 10% total harmonic distortion.

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