



ELECTRONIC TUBE REFERENCE

17AY3

Rectifier - Damper Diode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
RECTIFIER

Half-wave vacuum rectifier designed for television damper service, explicitly a heater-voltage variant of the corresponding 6AY3 type with controlled warm-up.

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	Similar

SECTION RATINGS

SECTION 1 Rectifier	
WARM-UP TIME	11 s
<i>Reference-only sheet; parent electrical ratings not reproduced in supplied source.</i>	

17AY3 — Half-Wave Vacuum Rectifier

The **17AY3** and **17AY3A** are Novar-type, heater-cathode half-wave vacuum rectifiers designed primarily for television damper service. These tubes are electrically identical to the **6AY3** and **6AY3B** respectively, with the exception of their heater characteristics and ratings.

Mechanical Construction and Pinout

The 17AY3 and **17AY3A** utilize a Novar T-9 construction but differ in their physical dimensions and base configurations. The **17AY3A** is identical to the 17AY3 except that it features a base with an exhaust tip at the bottom and a shorter bulb.

Physical Dimensions

- **17AY3:**
 - Base: Novar Button 9 Pin, E9-75
 - Outline: 9-86
 - Maximum Diameter: 1.188 inches
 - Maximum Seated Height: 3.030 inches
 - Maximum Overall Height: 3.410 inches
- **17AY3A:**
 - Base: Novar Button 9 Pin, E9-89 (with exhaust tip on base)
 - Maximum Diameter: 1.188 inches
 - Maximum Seated Height: 2.625 inches
 - Maximum Overall Height: 3.005 inches

Pin Connections (9HP Basing)

Both variants share the 9HP basing configuration. Pins designated as Internal Connection (IC) must not be used as circuit tie points.

Pin Number	Connection
Pin 1	IC (Internal Connection - do not use)
Pin 2	Plate (P)
Pin 3	IC (Internal Connection - do not use)
Pin 4	Heater (H)
Pin 5	Heater (H)
Pin 6	IC (Internal Connection - do not use)
Pin 7	Plate (P)
Pin 8	IC (Internal Connection - do not use)
Pin 9	Cathode (K)

Heater and Electrical Characteristics

The heater is designed for operation in series-string receiver configurations, featuring a controlled warm-up time.

- **Heater Voltage (AC or DC):** 16.8 V
- **Heater Current:** 0.450 A (with an allowable tolerance of ± 0.030 A)
- **Average Warm-up Time:** 11 seconds

Direct Interelectrode Capacitances

Measured without an external shield, the direct interelectrode capacitances of the tube are:

- **Heater to Cathode:** 2.8 pF
- **Plate to Cathode and Heater:** 6.5 pF
- **Cathode to Plate and Heater:** 9.0 pF

Maximum Ratings and Operating Limits

The ratings for the 17AY3 and [17AY3A](#) are established under the Design Maximum Rating System for television damper service.

Damper Service Ratings

- **Peak Inverse Plate Voltage (Max.):** 5000 V
 - *Note on Peak Inverse Voltage:* This limit applies to operation in a 525-line, 30-frame television system where the duty cycle of the voltage pulse does not exceed 15% of one horizontal scanning cycle.
- **Plate Dissipation (Max.):** 6.3 W
- **Steady State Peak Current (Max.):** 1100 mA
- **DC Plate Current (Max.):** 175 mA

Heater-Cathode Voltage Limits

- **Heater Negative with Respect to Cathode:**
 - DC Limit: 900 V
 - Total DC and Peak Limit: 5000 V
- **Heater Positive with Respect to Cathode:**
 - DC Limit: 100 V
 - Total DC and Peak Limit: 300 V

Technical Summary

The **17AY3** and [17AY3A](#) are specialized Novar half-wave rectifiers engineered for television damper service. Operating with a 16.8 V, 450 mA heater, they provide robust high-voltage isolation, supporting peak inverse plate voltages up to 5000 V and peak heater-cathode voltages up to 5000 V (heater negative). The [17AY3A](#) offers a more compact physical envelope through its E9-89 base with a bottom exhaust tip, while maintaining identical electrical ratings and 9HP pinout configuration to the standard 17AY3.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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

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Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	16.8 V	AC or DC at rated heater current
Heater current	450 mA	Nominal current
Warm-up time	11 s	Average
Reference parent type	6AY3	Electrical characteristics same except heater