



ELECTRONIC TUBE REFERENCE

14Y4

Rectifier - Full Wave electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

RECTIFIER-RECTIFIER

Indirectly heated high-vacuum full-wave rectifier with high heater-to-cathode voltage capability. Its two rectifier sections provide substantial inverse-voltage and peak-current capability for receiving-equipment power supplies.

GENERAL CHARACTERISTICS

BASE DESIGNATION	5AB	BASE PINS	8
NOMINAL HEATER	12.6 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Rectifier	
PEAK INVERSE VOLTAGE	1250 V
NOMINAL OUTPUT CURRENT	70 mA
PEAK FORWARD CURRENT	210 mA
FORWARD VOLTAGE DROP	22 V
MAXIMUM HEATER-CATHODE VOLTAGE	1150 V
<i>Promoted from clearly identified printed ratings/characteristics; additional published operating points and capacitances retained in TUBE_SECTION_PARAMETER.</i>	

SECTION2 Rectifier	
PEAK INVERSE VOLTAGE	1250 V
NOMINAL OUTPUT CURRENT	70 mA
PEAK FORWARD CURRENT	210 mA
FORWARD VOLTAGE DROP	22 V
MAXIMUM HEATER-CATHODE VOLTAGE	1150 V
<i>Physical rectifier section 2; electrical properties populated from the same published ratings applicable to the identical rectifier path.</i>	

14Y4 — Full-Wave High-Vacuum Rectifier

The **14Y4** is a locking-in (Loctal) eight-pin, full-wave, high-vacuum rectifier tube designed for power supply applications in electronic equipment. It features a coated unipotential cathode and is designed to operate under a range of heater voltages, with a nominal rating of 14.0 V and typical operation at 12.6 V. The tube is capable of delivering a maximum DC output current of 70 mA and can withstand a maximum peak inverse voltage of 1250 V.

Physical Specifications and Basing

The 14Y4 is constructed in a T-9 glass bulb with a locking-in 8-pin base. Its physical dimensions are:

- **Maximum Diameter:** 1 3/16 inches
- **Maximum Overall Length:** 2 25/32 inches
- **Maximum Seated Height:** 2 1/4 inches

The tube is designed to be mounted in **any position**.

Pin Connections

The 14Y4 utilizes the RMA Basing No. 5AB-L-O (or 5AB) connection scheme. When viewed from the bottom of the base, the pin assignments are:

Pin	Connection
Pin 1	Heater
Pin 2	No Connection
Pin 3	Diode Plate #2
Pin 4	Internal Connection
Pin 5	No Connection
Pin 6	Diode Plate #1

Pin	Connection
Pin 7	Cathode
Pin 8	Heater

Heater Characteristics

The 14Y4 features a coated unipotential cathode. The heater can be operated from either an AC or DC supply. The tube has two sets of heater specifications depending on the operating context:

Parameter	Nominal Rating	Typical Operating Condition
Heater Voltage	14.0 V	12.6 V
Heater Current	0.320 A	0.300 A

This dual-voltage capability allows the tube to be used in nominal 14.0 V electrical systems (such as automotive systems under charge) as well as standard 12.6 V heater circuits.

Maximum Ratings and Electrical Characteristics

The absolute maximum ratings for the 14Y4 under rectifier service are:

- **Maximum Peak Inverse Voltage:** 1250 V
- **Maximum DC Heater-to-Cathode Potential:** 450 V
- **Maximum Steady-State Peak Plate Current (per plate):** 210 mA
- **Maximum DC Output Current:** 70 mA

Tube Voltage Drop

The internal voltage drop of the 14Y4 is relatively low for a high-vacuum rectifier. Measured with an applied DC current of 70 mA per plate, the tube voltage drop is **22 V**.

Typical Operating Conditions

The 14Y4 can be operated in full-wave rectifier circuits using either condenser-input (capacitor-input) or choke-input filter configurations.

Condenser Input to Filter

Under condenser-input conditions, the typical operating parameters are:

- **Heater Voltage:** 12.6 V
- **Heater Current:** 0.300 A
- **AC Plate Voltage per Plate (RMS):** 325 V (Maximum)

- **DC Output Current:** 70 mA (Maximum)
- **Total Effective Plate Supply Impedance per Plate:** 150 Ω (Minimum)

Impedance Note: When filter condensers larger than 40 μ F are used, it may be necessary to add additional plate supply impedance to limit peak currents and protect the tube.

Choke Input to Filter

Under choke-input conditions, the typical operating parameters are:

- **Heater Voltage:** 12.6 V
- **Heater Current:** 0.300 A
- **AC Plate Voltage per Plate (RMS):** 450 V (Maximum)
- **DC Output Current:** 70 mA (Maximum)
- **Minimum Value of Input Choke:** 8.0 H

By using a choke-input filter, the allowable maximum AC plate voltage per plate is increased from 325 V RMS to 450 V RMS, while maintaining the same maximum DC output current of 70 mA.

Technical Summary

The **14Y4** is a locking-in, full-wave high-vacuum rectifier tube featuring a coated unipotential cathode. With a nominal heater rating of 14.0 V / 0.320 A (and a typical operating point of 12.6 V / 0.300 A), it is well-suited for compact or mobile power supplies. It supports a maximum peak inverse voltage of 1250 V, a peak plate current of 210 mA per plate, and a continuous DC output of 70 mA. Its low voltage drop of 22 V at 70 mA ensures efficient power conversion in both condenser-input (up to 325 V RMS per plate) and choke-input (up to 450 V RMS per plate) filter configurations.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1950 Sylvania

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

1950 SYLVANIA

Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Inverse Voltage	1250 V	—
Nominal DC Output Current	70 mA	—
Peak Forward Current	210 mA	—
Maximum Heater-Cathode Voltage	1150 V	—
AC Plate Voltage per Plate	325 V	CapacitorInputFilter
DC Output Current	70 mA	CapacitorInputFilter
AC Plate Voltage per Plate	1150 V	ChokeInputFilter
DC Output Current	70 mA	ChokeInputFilter

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Forward Voltage Drop	22 V	—

1950 SYLVANIA

Section 2 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Inverse Voltage	1250 V	—
Nominal DC Output Current	70 mA	—
Peak Forward Current	210 mA	—
Maximum Heater-Cathode Voltage	1150 V	—
AC Plate Voltage per Plate	325 V	CapacitorInputFilter
DC Output Current	70 mA	CapacitorInputFilter

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
AC Plate Voltage per Plate	1150 V	ChokeInputFilter
DC Output Current	70 mA	ChokeInputFilter

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Forward Voltage Drop	22 V	—



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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tube voltage drop	22 V	At70mADC

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC output current maximum	70 mA	FullWave
Peak inverse voltage maximum	1250 V	FullWave
RMS supply voltage per plate maximum	325 V	FullWave
Peak current per plate maximum	210 mA	FullWave

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 2 · Rectifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tube voltage drop	22 V	At70mADC

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC output current maximum	70 mA	FullWave
Peak inverse voltage maximum	1250 V	FullWave
RMS supply voltage per plate maximum	325 V	FullWave
Peak current per plate maximum	210 mA	FullWave

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