



ELECTRONIC TUBE REFERENCE

CONSOLIDATED TECHNICAL DATA

100R

1 SECTION  
CONSTRUCTION  
RECTIFIER

Rectifier - Half Wave electronic tube

Eimac high-vacuum half-wave rectifier for high-voltage power supplies. Rated for approximately 40 kV peak inverse voltage and 100 mA average plate current for industrial and transmitting applications.

GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | —                 | BASE PINS            | —             |
| NOMINAL HEATER      | 5 V / 6.5 A       | PARALLEL HEATER      | — / —         |
| HEATING             | Direct            | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

SECTION RATINGS

|                                                                                                                          |         |
|--------------------------------------------------------------------------------------------------------------------------|---------|
| SECTION1 Rectifier                                                                                                       |         |
| MAXIMUM PLATE DISSIPATION                                                                                                | 60 W    |
| PEAK INVERSE VOLTAGE                                                                                                     | 40000 V |
| NOMINAL OUTPUT CURRENT                                                                                                   | 100 mA  |
| Published maximum ratings and characteristics audited; additional applicable numerical data retained in parameter table. |         |

100R High-Vacuum Rectifier

The **100R** is a high-vacuum diode rectifier designed for high-voltage power supply and voltage-multiplying applications. It is characterized by its robust power handling, high peak inverse voltage capability, and the distinct operational advantages of high-vacuum construction over gas-filled or mercury-vapor alternatives.

## Physical and Mechanical Specifications

The 100R features a glass envelope construction with a top-cap anode connection to isolate the high-voltage plate circuit from the low-voltage filament pins. The physical dimensions and weight specifications are:

| Parameter                | Specification        |
|--------------------------|----------------------|
| Base Type                | Medium 4-Pin Bayonet |
| Maximum Overall Length   | 8 inches             |
| Maximum Overall Diameter | 2 3/8 inches         |
| Net Weight               | 4 ounces             |
| Shipping Weight          | 1 pound              |

## Pin Configuration

The base connections, viewed from the underside of the tube, utilize a standard four-pin layout where only the filament pins are active:

- **Pin 1:** Filament
- **Pin 2:** No Connection (NC)
- **Pin 3:** No Connection (NC)
- **Pin 4:** Filament
- **Top Cap:** Anode

## Electrical and Filament Characteristics

The tube is equipped with a fast-heating filament designed to reach its operating temperature almost immediately upon application of power. This rapid heating characteristic allows the plate voltage to be applied simultaneously with the filament voltage, eliminating the need for time-delay relays.

The electrical and filament ratings are:

| Electrical Parameter          | Rating                               |
|-------------------------------|--------------------------------------|
| Filament Voltage              | 5.0 V                                |
| Filament Current              | 6.5 A                                |
| Maximum Peak Inverse Voltage  | 40,000 V                             |
| Maximum Average Plate Current | 100 mA (for inductive input filters) |
| Maximum Plate Dissipation     | 60 W                                 |

## Operational Advantages and Applications

The high-vacuum design of the 100R provides several distinct advantages over gas-filled or mercury-vapor rectifiers:

- **Temperature Tolerance:** There is no lower limit to the ambient operating temperature. The upper ambient operating temperature is limited solely by the requirement to keep the bulb and seal temperatures below approximately 200°C. Full voltage ratings apply across this entire temperature range.
- **Transient-Free Operation:** High-vacuum operation prevents the generation of radio-frequency transients, reducing electromagnetic interference in sensitive equipment.
- **High-Frequency and High-Voltage Capability:** The tube is capable of operating at higher voltages and frequencies than typical gas-filled alternatives.
- **Parallel Operation:** Multiple 100R tubes can be operated in parallel to achieve higher direct-current output. Parallel operation is highly stable due to the constancy of high-vacuum tube characteristics and the absence of the "uncertain firing voltage" associated with gas-filled types.
- **Circuit Flexibility:** When used in properly designed rectifying or voltage-multiplying circuits, the combined system can deliver significantly greater direct-current output voltage and current than the nominal ratings of an individual tube.

## Technical Summary

The **100R** is a high-vacuum rectifier tube featuring a 5.0 V, 6.5 A filament, a Medium 4-Pin Bayonet base, and a top-cap anode. It supports a maximum peak inverse voltage of 40,000 V, a maximum average plate current of 100 mA under inductive input filtering, and a maximum plate dissipation of 60 W. Its design allows for immediate plate voltage application, stable parallel operation, and reliable performance across a wide temperature range up to a bulb limit of 200°C without generating radio-frequency transients.



## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 1950 Eimac Tubes

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

## 1950 EIMAC TUBES

## Section 1 · Rectifier

| OTHER                 |                 |                                                                       |
|-----------------------|-----------------|-----------------------------------------------------------------------|
| PARAMETER             | PUBLISHED VALUE | CONDITION / NOTE                                                      |
| Average plate current | 100 mA          | Maximum average plate current from Eimac high-vacuum rectifier table. |
| Plate dissipation     | 60 W            | Maximum plate dissipation from Eimac high-vacuum rectifier table.     |
| Peak inverse voltage  | 40000 V         | Maximum peak inverse voltage from Eimac high-vacuum rectifier table.  |
| Filament voltage      | 5 V             | Nominal filament voltage from Eimac high-vacuum rectifier table.      |
| Filament current      | 6.5 A           | Nominal filament current from Eimac high-vacuum rectifier table.      |

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