



ELECTRONIC TUBE REFERENCE

1883

Rectifier - Full Wave electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

RECTIFIER-RECTIFIER

Indirectly heated two-plate full-wave rectifier for conventional power-supply service. Heater-cathode isolation and dual rectifier sections provide moderate-current full-wave operation in receiving and general equipment.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	5 V / 1.6 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Common cathode	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Rectifier

NOMINAL OUTPUT CURRENT	125 mA
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Representative plate for two full-wave rectifier plates sharing the cathode.

SECTION2 Rectifier

No fixed ratings recorded.

Second physical rectifier section added for documented two-plate full-wave construction.

1883 — Full-Wave Rectifier Vacuum Tube

The **1883** is an indirectly heated, full-wave rectifier vacuum tube (also designated as a *valve biplaque à vide* or *diode biplaque redresseur*). Designed for power rectification in electronic equipment, it features two independent anodes (plates) and a common indirectly heated cathode, allowing for efficient full-wave rectification in a single envelope.

Mechanical and Physical Characteristics

The 1883 is housed in a glass envelope, with two distinct physical configurations documented:

- One configuration utilizes a **V-61** envelope with a **6.249** base, featuring a maximum overall height of **105 mm** and a maximum diameter of **45 mm**.
- Another configuration features a glass envelope with a maximum height of **90 mm**, a maximum diameter of **38.6 mm**, and a **Transcontinental** base.

Regardless of the envelope and base configuration, the tube is designed for versatile installation and can be mounted in **any position** (*quelconque*).

Heater and Cathode Ratings

The 1883 features an indirectly heated cathode (*cathode à chauffage indirect*). The heater (filament) is designed to operate from an AC supply. The electrical ratings for the heater are:

Parameter	Value
Filament Voltage (V_f)	5 V AC
Filament Current (I_f)	1.6 A

The cathode is internally connected to the heater structure, with the external cathode connection shared with one of the filament pins.

Pinout and Base Connections

The base connections for the 1883, viewed facing the observer from the bottom of the tube, are arranged as follows:

Pin Number	Connection
Pin 1	Filament (or Filament and Cathode)
Pin 2	Not connected
Pin 3	Anode No. 1
Pin 4	Not connected
Pin 5	Not connected
Pin 6	Anode No. 2
Pin 7	Not connected
Pin 8	Filament and Cathode (or Filament)

(Note: The filament supply is applied across Pin 1 and Pin 8, with the rectified DC output cathode connection taken from the designated filament/cathode pin.)

Operating Conditions and Maximum Ratings

The 1883 is rated under the average limit system (*système des limites moyennes*) for operation as a rectifier with a capacitor-input filter (*redresseur avec condensateur à l'entrée du filtre*). The maximum permissible AC anode supply voltage and rectified output current are interdependent, as shown in the following operating examples:

Operating Example 1

- **AC Supply Voltage per Anode (RMS):** 350 V
- **Maximum Rectified Current:** 125 mA

Operating Example 2

- **AC Supply Voltage per Anode (RMS):** 400 V maximum
- **Maximum Rectified Current:** 110 mA maximum

These ratings demonstrate that as the AC input voltage per anode is increased from 350 V to 400 V RMS, the maximum safe rectified output current must be derated from 125 mA to 110 mA to protect the tube from excessive thermal and electrical stress.

Performance and Rectification Curves

The performance of the 1883 in a typical capacitor-input filter circuit is characterized by the relationship between the rectified output voltage and the rectified load current. Under test conditions with a filament voltage (V_f) of 5 V, an input filter capacitor (C) of 16 μ F, and an AC supply voltage per anode of 350 V RMS, the output voltage behavior varies significantly with the series resistance (R) in the circuit:

- **No-Load Condition (0 mA):** At zero load current, the rectified output voltage across all series resistance values converges near **480 V to 490 V**.
- **Loaded Condition (120 mA):** When a load current of 120 mA is drawn, the output voltage drops due to the internal resistance of the tube and the external series resistance. The resulting output voltages for various series resistance values are:
 - $R = 100\ \Omega$: Output voltage drops to approximately **340 V**.
 - $R = 200\ \Omega$: Output voltage drops to approximately **320 V**.
 - $R = 400\ \Omega$: Output voltage drops to approximately **260 V**.
 - $R = 800\ \Omega$: Output voltage drops to approximately **180 V**.

These values illustrate the regulation characteristics of the 1883, showing that lower series resistance values provide significantly better voltage regulation under load, while higher resistance values can be used to limit current or adjust the output voltage at the expense of regulation.

Technical Summary

The **1883** is a versatile, indirectly heated full-wave rectifier tube designed for medium-power applications. Operating with a **5 V, 1.6 A** filament supply, it can deliver up to **125 mA** of rectified current at **350 V RMS** per anode, or up to **110 mA** at **400 V RMS** per anode when configured with a capacitor-input filter. Available in multiple physical configurations, including **V-61** and smaller glass envelopes with **6.249** or **Transcontinental** bases, the 1883 offers reliable performance and flexible mounting in any orientation. Its well-documented voltage regulation curves under various series resistances make it a predictable and robust choice for power supply designs.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1960 Mazda

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

1960 MAZDA

Section 1 · Rectifier

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
RMS voltage per anode	350 V	—
Maximum rectified current	125 mA	—
Alternate RMS voltage per anode	400 V	—
Alternate maximum rectified current	110 mA	—

1960 MAZDA

Section 2 · Rectifier

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
RMS voltage per anode	350 V	—
Maximum rectified current	125 mA	—
Alternate RMS voltage per anode	400 V	—
Alternate maximum rectified current	110 mA	—

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1968 Mazda Belvu

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

1968 MAZDA BELVU

Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
AC Input Voltage	400 V	CapacitorInputFilter

1968 MAZDA BELVU
Section 2 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
AC Input Voltage	400 V	CapacitorInputFilter

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