

ELECTRONIC TUBE REFERENCE

12H6

Diode (NOT rectifier) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

DIODE-DIODE

Twin high-vacuum diode for detector, discriminator, and general signal rectification, using a 12.6 V heater suitable for series-fed receiving equipment.

GENERAL CHARACTERISTICS

BASE DESIGNATION	70	BASE PINS	–
NOMINAL HEATER	12.6 V / 150 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Diode	
MAXIMUM CATHODE CURRENT	8 mA
PEAK INVERSE VOLTAGE	420 V
NOMINAL OUTPUT CURRENT	8 mA
PEAK FORWARD CURRENT	50 mA
FORWARD VOLTAGE DROP	11 V
Representative row for two identical diode sections.	

SECTION2 Diode	
No fixed ratings recorded.	
Physical diode section added in approved section-structure reconciliation.	

12H6 — Twin Diode Vacuum Tube

Overview

The **12H6** is a metal-envelope twin diode vacuum tube designed for detector, low-current rectifier, or limiter applications. It features two independent diode units in a single envelope, sharing a common heater but having separate cathode connections. The 12H6 is electrically identical to the [6H6](#) twin diode, with the sole exception of its heater characteristics and ratings, which are designed for 12.6-volt electrical systems.

Construction and Physical Characteristics

The 12H6 is constructed as a metal tube, indicated by its bold-face designation in standard classification tables. It utilizes an octal base with a **7Q** pin connection diagram and is housed in an **8-5** outline drawing configuration.

The tube contains two separate, indirectly heated diode sections. Because each diode has its own independent cathode, the two sections can be operated in separate circuits with different cathode potentials, subject to heater-to-cathode voltage limitations.

Base and Pin Connections

The 12H6 uses an octal base requiring a **7Q** connection arrangement. Viewed from the bottom of the base, the pin assignments are as follows:

- **Pin 1:** Metal Shell / Shield (S)
- **Pin 2:** Heater (H)
- **Pin 3:** Plate of Diode Unit 2 ([P2](#))
- **Pin 4:** Cathode of Diode Unit 2 (K2)
- **Pin 5:** Plate of Diode Unit 1 (P1)
- **Pin 7:** Heater (H)
- **Pin 8:** Cathode of Diode Unit 1 (K1)

Pin 6 has no connection shown in the standard 7Q diagram.

Heater Ratings and Characteristics

The primary distinction of the 12H6 compared to the [6H6](#) is its heater, which is rated for operation in 12.6-volt systems (either alternating or direct current).

Parameter	Value
Heater Voltage (AC or DC)	12.6 V
Heater Current	0.150 A

Parameter	Value
Cathode Type	Indirectly heated (Htr)

From these values, the nominal heater power consumption can be calculated: $\text{Power} = 12.6 \text{ V} \times 0.150 \text{ A} = 1.89 \text{ W}$

Electrical Characteristics and Rectifier Ratings

When operated as a half-wave rectifier, each diode section of the 12H6 is subject to specific maximum ratings and typical operating limits. The electrical characteristics and ratings per plate include:

- **Tube Voltage Drop:** 11 V at a direct current of 16 mA
- **Maximum RMS Supply Voltage per Plate:** 150 V
- **Maximum Peak Inverse Voltage:** 420 V
- **Maximum Peak Current per Plate:** 48 mA
- **Maximum DC Output Current per Plate:** 8 mA

These ratings define the safe operating envelope for the tube in power rectification and signal detection. The low maximum DC output current of 8 mA per plate indicates that the 12H6 is intended for signal detection, automatic volume control (AVC), or low-current bias supplies rather than high-power mains rectification.

Technical Summary

The **12H6** is a metal-envelope, octal-base twin diode featuring two independent diode sections with separate cathodes and a shared 12.6 V, 0.150 A heater. It is identical in design and electrical performance to the [6H6](#), except for its heater configuration. In half-wave rectifier service, each plate supports a maximum RMS supply voltage of 150 V, a peak inverse voltage of 420 V, a peak current of 48 mA, and a continuous DC output current of 8 mA, with a typical tube voltage drop of 11 V at 16 mA.



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 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
RMS supply voltage per plate	150 V	HalfWave

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Forward current at published voltage drop	16 mA	VoltageDrop=11V



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 RCA HB3 Binder 5 of 7

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

1971 RCA HB3 BINDER 5 OF 7

Section 1 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	12.6 V	—
Heater current	150 mA	—
Peak inverse voltage	420 V	EachDiode
Peak plate current	50 mA	EachDiode
Average rectified current	8 mA	EachDiode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate-to-cathode capacitance	3 pF	EachDiode

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