

ELECTRONIC TUBE REFERENCE

18

Power - Pentode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

PENTODE

Indirectly heated power pentode similar to types 2A5 and 42, intended for conventional audio-frequency output service with a 14 V heater.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	6
NOMINAL HEATER	14 V / 300 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	80000 Ω
TRANSCONDUCTANCE	0.0025 S
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	250 V
Published source values promoted where applicable; additional values retained as parameters.	

18 — Power Pentode Vacuum Tube

The **18** is an indirectly heated power pentode designed primarily for audio power amplification. Classified as a replacement type, it is characterized by its 14.0-volt heater and is designed to operate in any mounting position. The tube is electrically similar to types [2A5](#) and 42, and shares characteristic curves and general operating parameters with type [6F6G](#), differing primarily in its heater ratings.

Physical Specifications and Mounting

The type 18 is constructed with an ST 14 glass envelope and is equipped with a 6-pin base. The physical dimensions of the tube are as follows:

- **Maximum Diameter:** 1-9/16 inches
- **Maximum Overall Length:** 4-7/8 inches
- **Mounting Position:** Any

Heater Ratings

The heater of the type 18 is designed for indirect heating and can be operated using either an AC or DC supply.

- **Heater Voltage:** 14.0 V
- **Heater Current:** 0.3 A
- **Calculated Heater Power:** 4.2 W (calculated as 14.0 V multiplied by 0.3 A)

Pin Configurations

There are two distinct pinout configurations recorded for the 6-pin base, depending on whether it is classified as a U.X. base or a medium 6-pin 6-B base.

U.X. Base (6-Pin) Configuration

In this layout, the pin connections are assigned as follows:

- **Pin 1:** Heater (H)
- **Pin 2:** Anode (A)
- **Pin 3:** Screen Grid (G2)
- **Pin 4:** Control Grid (G1)
- **Pin 5:** Suppressor Grid (G3) / Cathode
- **Pin 6:** Heater (H)

Medium 6-Pin (6-B) Configuration

In this alternative layout, the pin connections are assigned as follows:

- **Pin 1:** Screen Grid (G2)
- **Pin 2:** Plate (P)
- **Pin 3:** Heater (H)
- **Pin 4:** Heater (H)
- **Pin 5:** Cathode (K) / Suppressor Grid (G3) (internally connected to Cathode)
- **Pin 6:** Control Grid (G1)

Typical Operating Conditions and Characteristics

Under typical Class A amplifier operating conditions, the type 18 power pentode exhibits the following electrical characteristics:

Parameter	Value
Anode (Plate) Voltage	250 V
Screen Grid (<u>G2</u>) Voltage	250 V
Control Grid (G1) Voltage	-16.5 V
Cathode Bias Resistor	410 ohms
Anode Current	34 mA
Screen Current	6.5 mA
Anode Impedance	80,000 ohms
Mutual Conductance	2.5 mA/V (2,500 micromhos)
Optimum Load	7,000 ohms
Power Output	3.2 W

For additional operating conditions, characteristics, and curves, the type 18 is comparable to type [42](#) and type [6F6G](#), which share similar electrical parameters under typical operation.

Related Designations and Comparisons

The type 18 is closely related to several other power pentodes:

- **Type [42](#) and Type [2A5](#):** The type 18 is described as similar to these types, with the primary distinction being the heater voltage and current ratings.
- **Type [6F6G](#):** The type 18 shares characteristic curves and general operating information with this type.

These relationships highlight the tube's design heritage as an indirectly heated power pentode, but direct substitution requires accounting for the different heater voltages and pin configurations.

Technical Summary

The **18** is an indirectly heated power pentode featuring a 14.0 V, 0.3 A heater, housed in an ST 14 envelope with a 6-pin base. It is capable of delivering 3.2 watts of audio power output under typical Class A conditions with a 250 V anode and screen supply. Its electrical characteristics align closely with types [42](#), [2A5](#), and [6F6G](#), making it a specialized replacement type for applications requiring a 14-volt heater supply.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1948 Brimar Radio Valve Manual

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

1948 BRIMAR RADIO VALVE MANUAL

Section 1 · Pentode

OTHER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power output	3.2 W	—

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