

ELECTRONIC TUBE REFERENCE

CONSOLIDATED TECHNICAL DATA

14B8

1 SECTION
CONSTRUCTION
HEPTODE

Voltage - Radio Detector Converter electronic tube

Heptode oscillator-converter for superheterodyne radio reception. Its multi-grid structure combines local-oscillator and mixer functions in one tube, translating incoming RF signals to intermediate frequency in series-heater receiver designs.

GENERAL CHARACTERISTICS

BASE DESIGNATION	8X	BASE PINS	8
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 Heptode	
PLATE RESISTANCE	360000 Ω
TRANSCONDUCTANCE	0.00055 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	100 V
Published maximum ratings, operating characteristics, and continuation data reviewed.	

14B8 — Pentagrid Converter Vacuum Tube

The **14B8** is an indirectly heated pentagrid converter vacuum tube designed for frequency conversion service in radio receivers. It combines the functions of an oscillator and a mixer within a single envelope.

Design and Physical Specifications

The 14B8 is classified as a pentagrid converter. It features an indirectly heated, unipotential cathode and is designed for operation in series-string or standard heater circuits.

Parameter	Specification
Heater Voltage	12.6 V
Heater Current	0.15 A
Cathode Type	Indirectly heated (Htr)
Base Connection	8X
Outline Drawing	9-30

The 8X base configuration provides the necessary pin connections for the heater, cathode, plate, screen, and control grids.

Electrical Ratings and Operating Conditions

The 14B8 is characterized by specific maximum ratings and typical operating parameters when employed in converter service.

Maximum Ratings

The maximum design-center limits for the primary electrodes are:

- **Maximum Plate Voltage:** 300 V
- **Maximum Screen Voltage:** 100 V

Typical Converter Operation

Under typical operating conditions as a converter, the electrical parameters are defined as follows:

Parameter	Value
Plate Voltage	250 V
Screen Voltage	100 V
Negative Grid Voltage	3.0 V
Plate Current	3.5 mA
Screen Current	2.7 mA
Plate Resistance (R_p)	360,000, (approximate)

Parameter	Value
Conversion Transconductance (G_m)	550 μ mhos

Oscillator Section Operating Conditions

The oscillator portion of the pentagrid structure operates with the following parameters:

- **Oscillator Grid Current (I_{g1}):** 0.4 mA
- **Oscillator Grid Resistor (R_{g1}):** 50,000 Ω
- **Oscillator Plate Voltage (E_{c2}):** 250 V supplied through a 20,000 Ω series resistor
- **Oscillator Plate Current (I_{c2}):** 4.0 mA

Technical Summary

The **14B8** is an eight-pin (8X base) pentagrid converter featuring a 12.6 V, 0.15 A heater. It is engineered to perform frequency conversion with a maximum plate rating of 300 V and a screen rating of 100 V. In typical converter service at 250 V on the plate and 100 V on the screen, it exhibits a conversion transconductance of 550 μ mhos and an approximate plate resistance of 360,000 Ω . The integrated oscillator section is typically operated with a 0.4 mA grid current through a 50,000 Ω grid resistor, and an oscillator plate current of 4.0 mA when connected to a 250 V supply via a 20,000 Ω resistor.

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 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	300 V	Published handbook rating
Maximum screen voltage	100 V	Published handbook rating
Plate voltage	250 V	ClassA
Screen voltage	100 V	ClassA
Control-grid bias	3 V	ClassA
Plate current	3.5 mA	ClassA
Screen current	2.7 mA	ClassA
Oscillator plate supply	250 V	Converter Oscillator
Oscillator plate current	4 mA	Converter Oscillator
Oscillator grid resistor	53000 ohm	Converter Oscillator

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	360000 ohm	Published handbook characteristic
Transconductance	550 μ S	Published handbook characteristic
Heater voltage	12.6 V	Published heater rating
Heater current	150 mA	Published heater rating

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes,
and their source documents.

[Catalog](#) [Tube types](#) [Full books](#) [Blog](#) [Feedback & corrections](#)

© 2026 Tube Tinker