

ELECTRONIC TUBE REFERENCE

CONSOLIDATED TECHNICAL DATA

1B7G

1 SECTION
CONSTRUCTION
HEPTODE

Voltage - Radio Detector Converter electronic tube

Battery or receiving-tube frequency converter combining local-oscillator and mixer action for superheterodyne radio service. Its multi-grid structure provides frequency conversion while minimizing component count and, in battery types, filament power.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7Z	BASE PINS	8
NOMINAL HEATER	1.4 V / 100 mA	PARALLEL HEATER	– / –
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Heptode	
PLATE RESISTANCE	350000 Ω
TRANSCONDUCTANCE	0.00035 S
MAXIMUM PLATE VOLTAGE	100 V
MAXIMUM SCREEN VOLTAGE	55 V
MAXIMUM CATHODE CURRENT	6 mA
Conversion transconductance promoted as the converter transconductance characteristic.	

Directly heated pentagrid converter for frequency-conversion service.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1937 Ken Rad

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

1937 KEN RAD

Section 1 · Heptode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	90 V	Plate Voltage 90 Volts
Grid Voltage	90 V	Ancde Grid Voltage (Crid No. 2) 90 Volts
Grid Voltage	0 V	Control Grid Voltage (Grid No. 4) 0 Volts
Plate Current	1.5 A	Plate Current 1.5 Mi{l}liamperes
Grid Current	35 μ A	Oscillator Grid Current 35 Hicroamperes
Grid Voltage	4 V	— CONTROL GRID VOLTAGE (GRID HO.4) >

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage	1.4 V	Published filament rating
Filament current	100 mA	Published filament rating



SOURCE OPERATING CONDITIONS

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1950 Sylvania

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

1950 SYLVANIA

Section 1 · Heptode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension filament CC. 1,4 volt	1.4 V	Tension filament CC. 1,4 volt

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Courant filament 0,100 ampère	100 mA	Courant filament 0,100 ampère
Tension filament CC. 1,4 volt	1.4 V	Tension filament CC. 1,4 volt
Courant filament 0,100 ma.	0.1 ma	Courant filament 0,100 ma.
Tension filament CC. 1,4 volt	1.4 V	Tension filament CC. 1,4 volt
Tension plaque o . . 90 volts	90 V	Tension plaque o . . 90 volts
Tension grille écran *x 45 volts	45 V	Tension grille écran *x 45 volts
Tension grille anode ... 90 volts	90 V	Tension grille anode ... 90 volts
Tension grille de contrôle (G) sae v e e 0 volt	0 V	Tension grille de contrôle (G) sae v e e 0 volt
Courant plaque o o 1,5 ma.	1.5 ma	Courant plaque o o 1,5 ma.
Courant grille-écran - 1,3 ma.	1.3 ma	Courant grille-écran - 1,3 ma.
Courant grille anode 1,6 ma.	1.6 ma	Courant grille anode 1,6 ma.
Courant grille oscillatrice 0,035 ma.	0.035 ma	Courant grille oscillatrice 0,035 ma.
Courant cathodique total 4,4 ma.	4.4 ma	Courant cathodique total 4,4 ma.
Conductance de conversion pour 0 volt grille	0 V	Conductance de conversion pour 0 volt grille
Conductance de couverts: on pour -14 volts grille	14 V	Conductance de couverts: on pour -14 volts grille
la pente. Le filament fonctionne sous 1,4 volt 100 millis. Toutefois,	1.4 V	la pente. Le filament fonctionne sous 1,4 volt 100 millis. Toutefois,
Une batterie B de 90 volts est nécessaire pour les tensions de pla-	90 V	Une batterie B de 90 volts est nécessaire pour les tensions de pla-
que, grille-écran et grille d'anode. Une résistance de 30000 ohms	30000 ohms	que, grille-écran et grille d'anode. Une résistance de 30000 ohms

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
4 A, V. C., soit & travers une résistance de 1 mégohm convenable-	4 A	4 A, V. C., soit & travers une résistance de 1 mégohm convenable-

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension plaque ... 90 volts max.	90 V	Tension plaque ... 90 volts max.
Source tension grille ecran (Gs) 90 volts max.	90 V	Source tension grille ecran (Gs) 90 volts max.
Tension €cran sl ae e e aen 33 volts max.	33 V	Tension €cran sl ae e e aen 33 volts max.
Courant cathodique total 5,0 ma, max.	5 ma	Courant cathodique total 5,0 ma, max.


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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195X General Electric Essential Characteristics

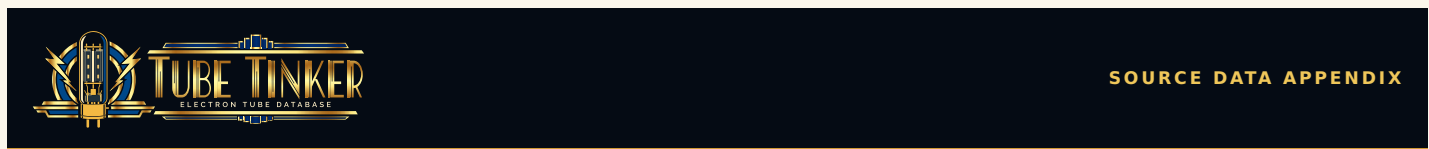
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195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Oscillator grid current	0.035 mA	Converter
Grid resistor	200000 Ω	Converter
Plate voltage	90 V	Converter
Screen voltage	45 V	Converter
Control-grid voltage	0 V	Converter
Plate current	1.5 mA	Converter
Screen current	1.3 mA	Converter
Oscillator-plate voltage	90 V	Converter
Oscillator-plate current	1.6 mA	Converter

Characteristic		
Parameter	Published Value	Condition / Note
Plate resistance	350000 Ω	Converter
Conversion transconductance	350 μS	Converter



SOURCE OPERATING CONDITIONS

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1961 Tung Sol

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

1961 TUNG SOL

Section 1 · Heptode

Other		
Parameter	Published Value	Condition / Note
Filament Voltage	1.4 V	Nominal
Filament Current	100 mA	Nominal
Plate Voltage	90 V	ConverterService
Screen Voltage	45 V	ConverterService
OscillatorAnodeVoltage	90 V	ConverterService
Control Grid Voltage	0 V	ConverterService
Oscillator Grid Resistor	200000 ohm	ConverterService
Plate Current	1.5 mA	ConverterService
Screen Current	1.3 mA	ConverterService
OscillatorAnodeCurrent	1.6 mA	ConverterService
Oscillator Grid Current	0.035 mA	ConverterService
Total Cathode Current	4.4 mA	ConverterService

Capacitance		
Parameter	Published Value	Condition / Note
SignalGridToMixerPlateCapacitance	0.34 pF	ShieldToNegativeFilament
SignalGridToOscillatorPlateCapacitance	0.26 pF	ShieldToNegativeFilament
SignalGridToOscillatorGridCapacitance	0.12 pF	ShieldToNegativeFilament
OscillatorGridToOscillatorPlateCapacitance	0.9 pF	ShieldToNegativeFilament

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
SignalInputCapacitance	7 pF	ShieldToNegativeFilament
OscillatorOutputCapacitance	4.2 pF	ShieldToNegativeFilament
Oscillator Input Capacitance	4 pF	ShieldToNegativeFilament
MixerOutputCapacitance	7.5 pF	ShieldToNegativeFilament

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	350000 ohm	ConverterService
Conversion Transconductance	350 uS	ConverterService
ControlGridVoltageForConversionTransconductance2uS	-14.5 V	Approx

TUBE TINKER

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and their source documents.

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