

ELECTRONIC TUBE REFERENCE

CONSOLIDATED TECHNICAL DATA

6A7

1 SECTION
CONSTRUCTION
HEPTODE

Voltage - Radio Detector Converter electronic tube

Classic pentagrid oscillator-converter for superheterodyne radio receivers. It combines local oscillation and mixing in one multi-grid tube, providing conventional frequency-changing performance for early AC receiving equipment.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7C	BASE PINS	7
NOMINAL HEATER	6.3 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7C - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – H	–	H – Heater	CONNECTED
PIN2 – P	A	P – Plate (Anode)	CONNECTED
PIN3 – G3	A	G3 – Suppressor Grid	CONNECTED
PIN3 – G5	A	G5 – Fifth Grid	CONNECTED
PIN4 – G2	A	G2 – Screen Grid	CONNECTED
PIN5 – G1	A	G1 – Control Grid	CONNECTED
PIN6 – K	A	K – Cathode	CONNECTED
PIN7 – H	–	H – Heater	CONNECTED
CAP1 – G4	A	G4 – Fourth Grid	CONNECTED

SECTION RATINGS

SECTION1 Heptode	
PLATE RESISTANCE	360000 Ω
TRANSCONDUCTANCE	0.00055 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	100 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM SCREEN DISSIPATION	0.3 W
MAXIMUM GRID DISSIPATION	0.75 W
MAXIMUM CATHODE CURRENT	18 mA
<i>Published promoted fields populated from the datasheet; identical repeated sections compressed where applicable.</i>	

Pentagrid frequency converter recommended to perform detector and local-oscillator functions simultaneously in superheterodyne receivers.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1937 Raytheon Radio Receiving Tubes

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

1937 RAYTHEON RADIO RECEIVING TUBES

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	Converter
Screen voltage	50 V	Converter
Control-grid voltage	-1.5 V	Converter
Plate current	1.1 mA	Converter
Screen current	1.3 mA	Converter
Plate voltage	250 V	Converter
Screen voltage	100 V	Converter
Control-grid voltage	-3 V	Converter
Plate current	3.5 mA	Converter
Screen current	2.7 mA	Converter
Oscillator-grid resistor	50000 Ω	Converter
Oscillator-grid current	0.4 mA	Converter

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Conversion transconductance	360 μS	Converter
Plate resistance	300000 Ω	Converter
Conversion transconductance	580 μS	Converter

1940 RCA

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

1940 RCA
Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Screen Voltage	100 V	—
Maximum Cathode Current	18 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	550 μS	Typical
Plate Resistance	360000 ohm	Typical



SOURCE DATA APPENDIX

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 · Heptode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
RF Input Capacitance	8.5 pF	—
IF Output Capacitance	9 pF	—
Oscillator Input Capacitance	7 pF	—
Oscillator Output Capacitance	5.5 pF	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Control Grid to Oscillator Grid Capacitance	0.15 pF	—
Control Grid to Anode Capacitance	0.3 pF	—
Control Grid to Oscillator Anode Capacitance	0.15 pF	—
Oscillator Grid to Oscillator Anode Capacitance	1 pF	—


SOURCE DATA APPENDIX

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	300 V	—
Maximum Screen Voltage	100 V	—
Maximum Plate Dissipation	1 W	—
Maximum Screen Dissipation	0.3 W	—
Maximum Grid Dissipation	0.75 W	—
Maximum Cathode Current	14 mA	—


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1958 Brimar Radio Valve No 7

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

1958 BRIMAR RADIO VALVE NO 7

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	300 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Heptode frequency changer	—



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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	360000 ohm	Published handbook characteristic
Transconductance	550 μ S	Published handbook characteristic
Heater/filament voltage	6.3 V	Published heater/filament rating

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament current	300 mA	Published heater/filament rating



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Conversion Transconductance	550 μ S	Typical

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen Voltage	100 V	Typical

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and their source documents.

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