

ELECTRONIC TUBE REFERENCE

CONSOLIDATED TECHNICAL DATA

6BE6

1 SECTION
CONSTRUCTION
HEPTODE

Voltage Radio Detector Converter electronic tube

Widely used miniature pentagrid oscillator-converter for superheterodyne radio receivers, combining local oscillation and mixing in one envelope for compact AM receiver frequency-changing stages.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7CH	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

7CH - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Heptode	
PLATE RESISTANCE	1000000 Ω
TRANSCONDUCTANCE	0.000475 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	100 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM SCREEN DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	14 mA
MAXIMUM HEATER-CATHODE VOLTAGE	100 V
<i>Published converter characteristic is conversion transconductance, preserved as a parameter rather than promoted as generic transconductance.</i>	

Indirectly heated heptode intended for frequency-converter service.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	300 mA	—
MaximumOscillatorFrequency	60 MHz	Stable self-oscillating frequency changer above this region



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
Plate voltage	250 V	ClassA; OperatingPoint1
Screen voltage	100 V	ClassA; OperatingPoint1
Control-grid bias	1.5 V	ClassA; OperatingPoint1
Plate current	2.9 mA	ClassA; OperatingPoint1
Screen current	6.8 mA	ClassA; OperatingPoint1
Plate resistance	1000000 ohm	ClassA; OperatingPoint1
Transconductance	475 uS	ClassA; OperatingPoint1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA; OperatingPoint2
Screen voltage	100 V	ClassA; OperatingPoint2
Control-grid bias	1.5 V	ClassA; OperatingPoint2
Plate current	2.6 mA	ClassA; OperatingPoint2
Screen current	7 mA	ClassA; OperatingPoint2
Plate resistance	400000 ohm	ClassA; OperatingPoint2
Transconductance	455 uS	ClassA; OperatingPoint2


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	475 uS	Typical
Plate Resistance	1000000 ohm	Typical


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Amperex Condensed

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

1963 AMPEREX CONDENSED

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	Published table

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen voltage	100 V	Published table
Control-grid bias	-1.5 V	Published table
Plate current	2.9 mA	Published table
Screen current	6.8 mA	Published table
Oscillator grid voltage	-3 V	Converter Oscillator
Oscillator grid current	0.5 mA	Converter Oscillator

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	475 μ S	Published table
Plate resistance	1000000 ohm	Published table
Heater voltage	6.3 V	Published heater rating
Heater current	300 mA	Published heater rating



SOURCE OPERATING CONDITIONS

1965 Sylvania Electronic Tubes Vol3

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

1965 SYLVANIA ELECTRONIC TUBES VOL3

Section 1 · Heptode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	300 mA	—
Conversion transconductance	475 μ S	—
Oscillator transconductance	7250 μ S	—
Oscillator amplification factor	20	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	300 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum grids 2 and 4 voltage	100 V	—
Maximum plate dissipation	1 W	—
Maximum grids 2 and 4 dissipation	1 W	—
Maximum total cathode current	14 mA	—
Typical plate voltage	250 V	—
Typical grids 2 and 4 voltage	100 V	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1968 General Electric Co

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

1968 GENERAL ELECTRIC CO

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen Supply Voltage	300 V	—
Plate Voltage	100 V	ConverterService; PlateVoltage=100V; ScreenVoltage=100V
Screen Voltage	100 V	ConverterService; PlateVoltage=100V; ScreenVoltage=100V
Grid3 Voltage	-1.5 V	ConverterService; PlateVoltage=100V; ScreenVoltage=100V
Grid1VoltageRMS	10 V	ConverterService; PlateVoltage=100V; ScreenVoltage=100V
Grid1 Resistance	20000 ohm	ConverterService; PlateVoltage=100V; ScreenVoltage=100V
Plate Voltage	250 V	ConverterService; PlateVoltage=250V; ScreenVoltage=100V
Screen Voltage	100 V	ConverterService; PlateVoltage=250V; ScreenVoltage=100V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid3 Voltage	-1.5 V	ConverterService; PlateVoltage=250V; ScreenVoltage=100V
Grid1VoltageRMS	10 V	ConverterService; PlateVoltage=250V; ScreenVoltage=100V

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	400000 ohm	ConverterService; PlateVoltage=100V; ScreenVoltage=100V
Conversion Transconductance	455 uS	ConverterService; PlateVoltage=100V; ScreenVoltage=100V
Plate Current	2.6 mA	ConverterService; PlateVoltage=100V; ScreenVoltage=100V
Screen Current	7 mA	ConverterService; PlateVoltage=100V; ScreenVoltage=100V
Cathode Current	10.1 mA	ConverterService; PlateVoltage=100V; ScreenVoltage=100V


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1968 Mazda Belvu

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

1968 MAZDA BELVU

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	300 mA	—
Plate voltage Va	300 V	—
Tension de gmlles n°2 et bn VE21+E4	100 V	—
Tension de grilles n° 2 et n° 4 à courant nul ... V@-8,bl	300 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate dissipation ... recerseesen P	1 W	—
Dissipation des grilles n°2 et n° 4 ucroone PE2+84	1 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Capacitance d'entrée oscillateur (grille n°1) Ce (g,)	5.5 pF	InterelectrodeCapacitance
Capacitance d'entrée mélangeur (grille n° 3)	7.2 pF	InterelectrodeCapacitance
Capacitance de S0rtiE..... eanentssnnennnes	3.6 pF	InterelectrodeCapacitance
Capacitance grille n°3/anode eececissens	0.3 pF	InterelectrodeCapacitance
Capacitance grille n° 1/ grille n°3 n Ce,/ 8	0.15 pF	InterelectrodeCapacitance
Capacitance grille n° 1/ anode c Cg,/a	0.05 pF	InterelectrodeCapacitance
Capacitance grille n° 1/ cathode- s Cg,/k	2.8 pF	InterelectrodeCapacitance


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1969 Tesla Manual of Electronic Tubes

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

1969 TESLA MANUAL OF ELECTRONIC TUBES
Section 1 · Heptode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	MixerFrequencyConverter text	—

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 RCA HB3 Binder 4 of 7

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

1971 RCA HB3 BINDER 4 OF 7

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC) $\pm$ %	63 V	PublishedColumn1
Voltage (AC or DC) $\pm$ %	10 V	PublishedColumn2
Current at	6.3 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
trodes IRF input)	7 pF	PublishedColumn1
(Mixer input)	8 pF	PublishedColumn1
(Mixer input)	13 pF	PublishedColumn2
trodes (Osci llator input)	5.5 pF	PublishedColumn1
Grid No. to plate max. max	3 pF	PublishedColumn1
Grid No. to plate max. max	0.25 pF	PublishedColumn2
Grid No. to grid No max. max	0.15 pF	PublishedColumn1
Grid No. to plate. max. max	0.1 pF	PublishedColumn1
Grid No. to plate. max. max	0.05 pF	PublishedColumn2
Grid No.l to cathode &grid No.S	3 pF	PublishedColumn1
electrodes except grid No.l	15 pF	PublishedColumn1

1975 RCA RC30

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

1975 RCA RC30
Section 1 · Heptode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.3-to-plate capacitance	0.3 pF	Unshielded
Grid No.3-to-grid No.1 capacitance	0.16 pF	Unshielded
Grid No.1-to-plate capacitance	0.1 pF	Unshielded
Grid No.3-to-all-other-electrodes capacitance	7 pF	Unshielded
Grid No.1-to-all-other-electrodes capacitance	5.5 pF	Unshielded
Plate-to-all-other-electrodes capacitance	8 pF	Unshielded

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ConverterSeparateExcitation
Conversion transconductance	455 uS	ConverterSeparateExcitation;PlateVoltage=100V
Plate current	2.6 mA	ConverterSeparateExcitation;PlateVoltage=100V
Plate voltage	250 V	ConverterSeparateExcitation
Conversion transconductance	475 uS	ConverterSeparateExcitation;PlateVoltage=250V
Plate current	2.9 mA	ConverterSeparateExcitation;PlateVoltage=250V
Screen-grid current	6.8 mA	ConverterSeparateExcitation;PlateVoltage=250V
Oscillator-grid current	0.5 mA	ConverterSeparateExcitation