

ELECTRONIC TUBE REFERENCE

83

Rectifier - Full Wave electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

RECTIFIER-RECTIFIER

Directly heated mercury-vapor full-wave rectifier for substantial DC power supplies. Its heavy five-volt filament and low gas-discharge forward voltage provide efficient moderate-to-high-current rectification.

GENERAL CHARACTERISTICS

BASE DESIGNATION	4C	BASE PINS	4
NOMINAL HEATER	5 V / 3 A	PARALLEL HEATER	– / –
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Common cathode	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Rectifier	
PEAK INVERSE VOLTAGE	1705 V
NOMINAL OUTPUT CURRENT	248 mA
PEAK FORWARD CURRENT	1.1 A
FORWARD VOLTAGE DROP	17 V
WARM-UP TIME	15 s
Representative row for two identical rectifier plate sections; capacitor/choke filter conditions retained in parameters.	

SECTION2 Rectifier	
PEAK INVERSE VOLTAGE	1705 V
NOMINAL OUTPUT CURRENT	248 mA
PEAK FORWARD CURRENT	1.1 A
FORWARD VOLTAGE DROP	17 V
WARM-UP TIME	15 s
<i>Second physical rectifier section; promoted electrical properties populated from identical section.</i>	

Mercury-vapor full-wave rectifier printed on combined 82/83 source.



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 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
RMS AC voltage per plate maximum	500 V	FullWave;MercuryVapor
Peak inverse voltage maximum	1400 V	FullWave;MercuryVapor
Peak current per plate maximum	800 mA	FullWave;MercuryVapor
DC output current maximum	250 mA	FullWave;MercuryVapor

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tube voltage drop	15 V	MercuryVapor;IndependentOfOutputCurrent



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1940 RCA

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

1940 RCA

Section 1 · Rectifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
83 is due to its low and practically constant tube voltage drop (only	15 V	83 is due to its low and practically constant tube voltage drop (only about 15 volts)
TuBe VoLtage Dropr (Approximate)	15 V	TuBe VoLtage Dropr (Approximate)..... 15 Volts

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FILAMENT VOLTAGE (A. C.)...ivveivii e,	5 V	FILAMENT VOLTAGE (A. C.)...ivveivii e, 5.0 Volts
FILAMENT CURRENT et	3 A	FILAMENT CURRENT et 3.0 Amperes
A-C PLATE VoLTAGE PER Prate (RMS)	500 V	A-C PLATE VoLTAGE PER Prate (RMS)..... 500 max. Volts
PEAR INVERSE VOLTAGE.....coivuserenccanns	1400 V	PEAR INVERSE VOLTAGE.....coivuserenccanns 1400 max. Volts
D-C Ourputr CurrentT (Continuous)	250 mA	D-C Ourputr CurrentT (Continuous)..... 250 max. Milliamperes
PeaAx PLATE CURRENT	800 mA	PeaAx PLATE CURRENT.....0.c... teteiesannas 800 max. Milliamperes
parallel. Por example, two	83 A	parallel. Por example, two 83s so arranged in a full-wave circuit can supply twice
a resistor of not less than	50 ohm	a resistor of not less than 50 ohms should be connected in series with each plate in
resistors should be increased to	100 ohm	resistors should be increased to 100 ohms each.



SOURCE DATA APPENDIX

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 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Inverse Voltage	1550 V	—
Peak Current per Anode	1 A	—
Average Current per Anode	225 mA	—
RMS Input per Anode	450 V	CapacitorInputFilter
Rectified Current	225 mA	CapacitorInputFilter
RMS Input per Anode	550 V	ChokeInputFilter

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Choke Inductance	3 H	ChokeInputFilter
Rectified Current	225 mA	ChokeInputFilter

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Warmup Time	15 s	10-15 seconds


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1950 Sylvania

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

1950 SYLVANIA

Section 1 · Rectifier

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filling	Mercury vapor	—


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1958 Brimar Radio Valve No 7

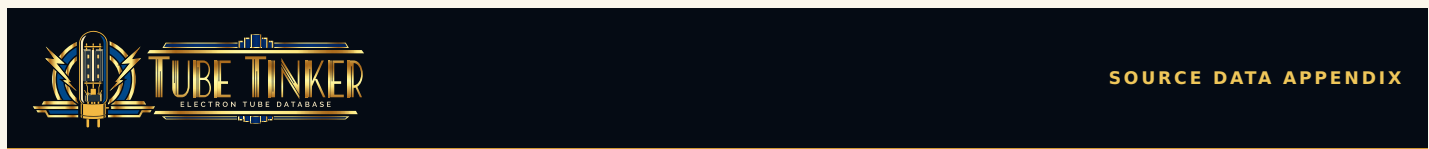
Published test conditions and operating points. Values on this page are preserved as reported by this source.

1958 BRIMAR RADIO VALVE NO 7

Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
RMS Input per Anode	450 V	CapacitorInputFilter
RMS Input per Anode	550 V	ChokeInputFilter
Input Choke Inductance	3 H	ChokeInputFilter

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Condensed Mercury Temperature Minimum	20 degC	—
Condensed Mercury Temperature Maximum	60 degC	—



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 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum RMS supply voltage per plate	450 V	Full-Wave Mercury-Vapor

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Forward voltage drop	15 V	Full-Wave Mercury-Vapor



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1960 RCA Industrial and Communications Types

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

1960 RCA INDUSTRIAL AND COMMUNICATIONS TYPES

Section 1 · Rectifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterOrFilamentVoltage	5 V	—
HeaterOrFilamentCurrent	3 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
RMSInputPerPlateMaximum	550 V	—
MinimumInputChoke	3 H	ChokeInputFilter



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	5 V	Nominal
Heater current	3 A	Nominal



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1968 General Electric Co

SOURCE PDF

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

1968 GENERAL ELECTRIC CO

Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterOrFilamentVoltageNominal	5 V	—
HeaterOrFilamentCurrentNominal	3 A	—
MaximumPeakInversePlateVoltage	1705 V	—
MaximumPlateCurrentPerPlate	1.1 A	—
MaximumACPlateVoltagePerPlate	495 V	CapacitorInputFilter
MaximumACPlateVoltagePerPlate	585 V	ChokeInputFilter
Maximum DC Output Current	248 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tube Voltage Drop Approximate	17 V	ChokeInputFilter



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 RCA HB3 Binder 3 of 7

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

1971 RCA HB3 BINDER 3 OF 7

Section 1 · Rectifier

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC)	5 V	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
Current	3	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
Pin 1 -Fi lament – published value 1	1	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pin 1 -Filament – published value 2	3	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
Pin 2 -Plate of	2	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
Unit No.2	4	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
PER PLATE°	50 ohm	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
Tube Voltage Drop (Approx.)	15 V	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
8 when a filter–input capacitor Lary er Loan uo µf is used, it may Denec–	8 mA	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
As a half–wave rectifier, the 83 is operated with plates	83	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
Both plates within the same tube should 6e connected to the	6	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
50 ohms should be connected in series with each plate	50 ohm	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PEAK INVERSE VOLTAGE	1550 V	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
PEAK PLATE CURRENT PER PLATE	1 mA	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
AC PLATE VOLTAGE PER PLATE (RMS)	450 V	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
DC OUTPUT CURRENT	225 mA	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
AC PLATE VOLTAGE PER PLATE (RMS)	550 V	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.

Section 2 · Rectifier

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC)	5 V	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.
Current	3	Published datasheet value; multiple numbers on a source row represent separate limits or operating conditions.

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