

3A5

Power - Triode Single (under 10W) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

TRIODE-TRIODE

Directly heated high-frequency twin triode intended for portable or battery equipment, usable as an RF amplifier or oscillator and capable of about 2 W push-pull Class-C RF output at 40 MHz.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7BC	BASE PINS	7
NOMINAL HEATER	2.8 V / 110 mA	PARALLEL HEATER	1.4 V / 220 mA
HEATING	Direct	SERIES OPERATION	Capable
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7BC - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – F	–	F – Filament	CONNECTED
PIN2 – 2P	B	P – Plate (Anode)	CONNECTED
PIN3 – 2G1	B	G1 – Control Grid	CONNECTED
PIN4 – FCT	–	FCT – Filament Center Tap	CONNECTED
PIN5 – 1G1	A	G1 – Control Grid	CONNECTED
PIN6 – 1P	A	P – Plate (Anode)	CONNECTED
PIN7 – F	–	F – Filament	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	8300 Ω
TRANSCONDUCTANCE	0.0018 S
AMPLIFICATION FACTOR	15
MAXIMUM PLATE VOLTAGE	135 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM GRID DISSIPATION	0.0025 W
MAXIMUM CATHODE CURRENT	15 mA
<i>Representative row for two electrically identical triode units; RF per-unit dissipation/current ratings promoted.</i>	

SECTION2 Triode	
PLATE RESISTANCE	8300 Ω
TRANSCONDUCTANCE	0.0018 S
AMPLIFICATION FACTOR	15
MAXIMUM PLATE VOLTAGE	135 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	15 mA
<i>Second physical triode restored under current one-row-per-physical-section policy.</i>	

3A5 is a DualTriode vacuum tube documented in the RCA Receiving Tube Manual. The supplied excerpt was reviewed for heater or filament data, physical section arrangement, maximum ratings, electrical characteristics, capacitances, and stated application.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1956 RCA Transmitting Tubes

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

1956 RCA TRANSMITTING TUBES

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate/Inverse Voltage	135 V	Source rating
Maximum Plate Dissipation	1 W	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Parallel Filament Voltage	1.4 V	—
Parallel Filament Current	220 mA	—

SOURCE OPERATING CONDITIONS

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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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	135 V	Published handbook rating
Plate voltage	90 V	ClassA
Control-grid bias	2.5 V	ClassA
Plate current	3.7 mA	ClassA

Characteristic		
Parameter	Published Value	Condition / Note
Plate resistance	8300 ohm	Published handbook characteristic
Transconductance	1800 μ S	Published handbook characteristic
Amplification factor	15	Published handbook characteristic
Heater/filament voltage	2.8 V	Published heater/filament rating
Heater/filament current	110 mA	Published heater/filament rating



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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195X Raytheon Special Purpose Tubes

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195X RAYTHEON SPECIAL PURPOSE TUBES

Section 1 · Triode

Other		
Parameter	Published Value	Condition / Note
Plate Voltage	90 V	—
Grid 1 Voltage	-2.5 V	—
Plate Current	3.7 mA	—

Characteristic		
Parameter	Published Value	Condition / Note
Transconductance	1800 μ S	—
Amplification Factor	15	—



SOURCE DATA APPENDIX

1960 RCA Industrial and Communications Types

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1960 RCA INDUSTRIAL AND COMMUNICATIONS TYPES

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Push-pull RF output at 40 MHz	2 W	ClassC,PushPull
Driving power at 40 MHz	0.2 W	ClassC,PushPull



SOURCE DATA APPENDIX

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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	135 V	—
Plate dissipation per unit	1 W	RFAmplifier
DC plate current per unit	15 mA	RFAmplifier
RF power output	2 W	PushPull;ClassC;40MHz

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	8300 ohm	—
Transconductance	1800 uS	—

SOURCE OPERATING CONDITIONS

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1966 Tung Sol Electronic Tubes 1 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 1 OF 4

Section 1 · Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
GRID TO PLATE: (G TO P)	3.2 MMF	Capacitances GRID TO PLATE: (G TO P) 3.2 3.2 µpf
PLATE TO PLATE: (P TO P)	0.32 MMF	Capacitances PLATE TO PLATE: (P TO P) 0.32 µpf

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FILAMENT VOLTAGE I	2.8 V	Maximum Ratings FILAMENT VOLTAGE I.4 2.8 I.4 2.8 VOLTS
MAXIMUM PLATE VOLTAGE	135 V	Maximum Ratings MAXIMUM PLATE VOLTAGE 135 135 VOLTS
MAXIMUM DC PLATE CURRENT (PEA UNIT) --- I	5 mA	Maximum Ratings MAXIMUM DC PLATE CURRENT (PEA UNIT) --- I5 MA.
MAXIMUM DC GRID CURRENT (pER UNIT)	2.5 mA	Maximum Ratings MAXIMUM DC GRID CURRENT (pER UNIT) --- 2.5 MA.
PLATE VOLTAGE	90 V	Typical Operating Conditions PLATE VOLTAGE 90 VOLTS
GRID VOLTAGE -Z	5 V	Typical Operating Conditions GRID VOLTAGE -Z.5 VOLTS
PLA iF CURRENT	3.7 mA	Typical Operating Conditions PLA iF CURRENT 3.7 MA.
DC PLATE VOI TA GE	135 V	Oscillator DC PLATE VOI TA GE 135 VOLTS
FROM A GRID RESISTOR OF	0 ohm	Oscillator FROM A GRID RESISTOR OF 4 000 OHMS
DC GRID CURRENT (APPR OX.)	5 mA	Oscillator DC GRID CURRENT (APPR OX.) 5 MA.

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage	2.8 V	SeriesFilament
Filament current	110 mA	SeriesFilament
Filament voltage	1.4 V	ParallelFilament
Filament current	220 mA	ParallelFilament



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	—135 V	—
Maximum plate dissipation	—1 W	—
Maximum cathode current	—15 mA	—
Push-pull plate voltage	135 V	PushPull
Push-pull grid voltage	-20 V	PushPull
Push-pull plate current	30 mA	PushPull
Driving power	0.2 W	PushPull
Power output	2 W	PushPull

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	8300 Ω	—
Transconductance	1800 μS	—
Plate voltage	90 V	ClassA
Grid voltage	-2.5 V	ClassA
Amplification factor	15	ClassA
Plate resistance	8300 Ω	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	1800 μ S	ClassA
Plate current	3.7 mA	ClassA

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate to Filament	1–1 pF	—



SOURCE OPERATING CONDITIONS

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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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament Voltage (de) 2.8	1.4 V	Filament Voltage (de) 2.8 1.4 volts
Filament Current 0.11	220 mA	Filament Current 0.11 0.22 ampere
Plate Voltage	135 V	Plate Voltage 135 volts
Plate Current	6 mA	Plate Current 6 mA
Plate Dissipation	0.5 W	Plate Dissipation 0.5 watt
DC Plate Voltage	135 V	DC Plate Voltage 135 volts
DC Plate Current (per unit)	15 mA	DC Plate Current (per unit) 15 mA
DC Grid Current (per unit)	2.5 mA	DC Grid Current (per unit) 2.5 mA
Plate Dissipation (per unit) 1	0 W	Plate Dissipation (per unit) 1-0 watt
DC Grid Voltage*	4000 ohm	DC Grid Voltage* 4000 ohms
Peak R-F Grid-to-Grid Voltage	90 V	Peak R-F Grid-to-Grid Voltage 90 volts
DC Plate Current	30 mA	DC Plate Current 30 mA
DC Grid Current (approx.)	5 mA	DC Grid Current (approx.) 5 mA
Maximum plate voltage	135 V	Published maximum rating
Maximum plate dissipation	0.5 W	Published maximum rating

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid Voltage –	2.5 V	Grid Voltage —2.5 volts
Plate Resistance	8300 ohm	Plate Resistance 8300 ohms
Plate Current	3.7 mA	Plate Current 3.7 mA
Heater voltage	1.4 V	Rated heater/filament condition
Heater current	220 mA	Rated heater/filament condition
Amplification factor	15	Published section characteristic