

ELECTRONIC TUBE REFERENCE

6AT8A

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

Medium-mu triode plus sharp-cutoff pentode used as a combined oscillator and mixer in television receivers with approximately 40 MHz IF.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9DW	BASE PINS	9
NOMINAL HEATER	6.3 V / 450 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Common cathode	SECTION CONSTRUCTION	Dissimilar

9DW - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – 2G1	B	G1 – Control Grid	CONNECTED
PIN2 – 2P	B	P – Plate (Anode)	CONNECTED
PIN3 – K	A	K – Cathode	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – H	–	H – Heater	CONNECTED
PIN6 – 1P	A	P – Plate (Anode)	CONNECTED
PIN7 – 1G2	A	G2 – Screen Grid	CONNECTED
PIN8 – 1G3	A	G3 – Suppressor Grid	CONNECTED
PIN9 – 1G1	A	G1 – Control Grid	CONNECTED

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	300000 Ω
TRANSCONDUCTANCE	0.0055 S
MAXIMUM PLATE VOLTAGE	275 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	2.3 W
MAXIMUM SCREEN DISSIPATION	0.65 W
Reference-only sheet states electrical ratings same as 6X8 except listed heater/capacitance differences; no unsupported promoted values guessed.	

SECTION2 Triode	
PLATE RESISTANCE	6000 Ω
TRANSCONDUCTANCE	0.0065 S
AMPLIFICATION FACTOR	40
MAXIMUM PLATE VOLTAGE	275 V
MAXIMUM PLATE DISSIPATION	1.7 W
Reference-only sheet states electrical ratings same as 6X8 except listed heater/capacitance differences; no unsupported promoted values guessed.	

Medium-mu triode plus sharp-cutoff pentode used as a combined oscillator and mixer in television receivers with about 40-MHz IF.



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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	450 mA	—
Plate voltage	150 V	ClassA1
Transconductance	5500 μ S	ClassA1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode grid to plate	0.06 pF	—

1961 TUNG SOL

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	150 V	ClassA1
Transconductance	6500 μ S	ClassA1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode grid to plate	1.5 pF	—



1965 Westinghouse Data Book

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

1965 WESTINGHOUSE DATA BOOK

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	125 V	PentodeUnit
Screen Voltage	125 V	PentodeUnit
Plate Current	10 mA	PentodeUnit
Screen Current	3.5 mA	PentodeUnit

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6500 uS	—
GridToPlateCapacitanceMaximum	0.015 pF	—
Input Capacitance	5 pF	—
Output Capacitance	3.5 pF	—

1965 WESTINGHOUSE DATA BOOK

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterOrFilamentVoltage	6.3 V	—
HeaterOrFilamentCurrent	450 mA	—
ControlledWarmupHeater	1 boolean	—
Heater Warmup Time	11 s	—
Transconductance	5500 uS	—
Amplification Factor	40	—
Grid To Plate Capacitance	2 pF	—
Input Capacitance	3 pF	—
Output Capacitance	2 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	125 V	TriodeUnit
Plate Current	10 mA	TriodeUnit


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published table
Heater current	450 mA	Published table
Pentode transconductance	5500 μ S	PentodeSection
Pentode plate resistance	300000 ohm	PentodeSection
Triode transconductance	6500 μ S	TriodeSection
Triode plate resistance	6000 ohm	TriodeSection
Triode amplification factor	40	TriodeSection

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode plate voltage	125 V	PentodeSection
Pentode plate current	9 mA	PentodeSection
Triode plate voltage	125 V	TriodeSection
Triode plate current	12 mA	TriodeSection


SOURCE DATA APPENDIX

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage nominal	6.3 V	—
Heater current	450 mA	—
Source-stated electrical equivalence	Same as 6X8 except listed heater and capacitance items	ReferenceOnly

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater warm-up time	11 s	Average

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1-to-plate capacitance	0.03 pF	WithExternalShield
Input capacitance	4.8 pF	WithExternalShield
Output capacitance	1.6 pF	WithExternalShield

1971 RCA HB3 BINDER 4 OF 7
Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage nominal	6.3 V	—
Heater current	450 mA	—
Source-stated electrical equivalence	Same as 6X8 except listed heater and capacitance items	ReferenceOnly

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater warm-up time	11 s	Average

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	1.5 pF	WithExternalShield
Grid-to-cathode-and-heater capacitance	2.4 pF	WithExternalShield
Plate-to-cathode-and-heater capacitance	1 pF	WithExternalShield



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
frequency in the order of	40 MHz	Published in approved 6AT8A target entry; Section2
Heater Warm-up Time (Average) 11	11 seconds	Published in approved 6AT8A target entry; Section2
Heater Voltage (ac/dc)	6.3 V	Published in approved 6AT8A target entry; Section2
Heater Current	1.8 A	Published in approved 6AT8A target entry; Section2
Peak Inverse Plate Voltage#	4500 V	Published in approved 6AT8A target entry; Section2
Peak Plate Current	1300 mA	Published in approved 6AT8A target entry; Section2
Average Plate Current	210 mA	Published in approved 6AT8A target entry; Section2
Plate Dissipation	6.5 W	Published in approved 6AT8A target entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak value +300	-4500 V	Published in approved 6AT8A target entry; Section2
Average value -(-100	-900 V	Published in approved 6AT8A target entry; Section2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 4.7	6.3 V	Published in approved 6AT8A target entry; Section2
Heater Current , . . 0.6	450 mA	Published in approved 6AT8A target entry; Section2
Grid to Plate 1.5	1.5 pF	Published in approved 6AT8A target entry; Section2
Grid to Cathode and Heater 2	2.4 pF	Published in approved 6AT8A target entry; Section2
Plate to Cathode and Heater 0.5	1 pF	Published in approved 6AT8A target entry; Section2
Grid No.3 4.6	4.8 pF	Published in approved 6AT8A target entry; Section2
Grid No.3 0.9	1.6 pF	Published in approved 6AT8A target entry; Section2
Plate to Heater and Cathode	8.5 pF	Published in approved 6AT8A target entry; Section2
Cathode to Heater and Plate	11.5 pF	Published in approved 6AT8A target entry; Section2
Heater to Cathode	4 pF	Published in approved 6AT8A target entry; Section2

1975 RCA RC30

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
frequency in the order of	40 MHz	Published in approved 6AT8A target entry; Section1
Heater Warm-up Time (Average) 11	11 seconds	Published in approved 6AT8A target entry; Section1
Heater Voltage (ac/dc)	6.3 V	Published in approved 6AT8A target entry; Section1
Heater Current	1.8 A	Published in approved 6AT8A target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Inverse Plate Voltage#	4500 V	Published in approved 6AT8A target entry; Section1
Peak Plate Current	1300 mA	Published in approved 6AT8A target entry; Section1
Average Plate Current	210 mA	Published in approved 6AT8A target entry; Section1
Plate Dissipation	6.5 W	Published in approved 6AT8A target entry; Section1
Peak value +300	-4500 V	Published in approved 6AT8A target entry; Section1
Average value -(-100	-900 V	Published in approved 6AT8A target entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 4.7	6.3 V	Published in approved 6AT8A target entry; Section1
Heater Current , . . 0.6	450 mA	Published in approved 6AT8A target entry; Section1
Grid to Plate 1.5	1.5 pF	Published in approved 6AT8A target entry; Section1
Grid to Cathode and Heater 2	2.4 pF	Published in approved 6AT8A target entry; Section1
Plate to Cathode and Heater 0.5	1 pF	Published in approved 6AT8A target entry; Section1
Grid No.3 4.6	4.8 pF	Published in approved 6AT8A target entry; Section1
Grid No.3 0.9	1.6 pF	Published in approved 6AT8A target entry; Section1
Plate to Heater and Cathode	8.5 pF	Published in approved 6AT8A target entry; Section1
Cathode to Heater and Plate	11.5 pF	Published in approved 6AT8A target entry; Section1
Heater to Cathode	4 pF	Published in approved 6AT8A target entry; Section1

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes, and their source documents.

