

ELECTRONIC TUBE REFERENCE

6U8

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA
2 SECTIONS
CONSTRUCTION
PENTODE-TRIODE

Combined triode-pentode intended for VHF oscillator and frequency-converter service.

GENERAL CHARACTERISTICS

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

9AE - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	5000 Ω
TRANSCONDUCTANCE	0.0085 S
AMPLIFICATION FACTOR	40
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Published ratings and characteristics promoted from the approved German source.</i>	

SECTION2 Pentode	
PLATE RESISTANCE	400000 Ω
TRANSCONDUCTANCE	0.005 S
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM SCREEN VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	3 W
MAXIMUM SCREEN DISSIPATION	0.55 W
MAXIMUM CATHODE CURRENT	25 mA
<i>Published ratings and characteristics promoted from the approved German source.</i>	

Combined triode and pentode intended for VHF oscillator and frequency-converter service.

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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	5000 ohm	—
Transconductance	8500 μ S	—
Amplification Factor	40	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	330 V	—
Maximum Plate Dissipation	3 W	—
Plate Voltage	150 V	Triode section
Plate Current	18 mA	Triode section

1950 SYLVANIA

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	400000 ohm	—
Transconductance	5200 μ S	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	330 V	—
Maximum Screen Voltage	330 V	—
Maximum Plate Dissipation	3 W	—
Maximum Screen Dissipation	0.55 W	—
Plate Voltage	250 V	Pentode section

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen Voltage	110 V	Pentode section
Plate Current	10 mA	Pentode section



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SOURCE OPERATING CONDITIONS

1953 RFT Rundfunk Technik

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

1953 RFT RUNDFUNK TECHNIK

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	450 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Plate Dissipation	1.5 W	—
Maximum Cathode Current	20 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	8500 μ S	Typical
Amplification Factor	55	Typical
Plate Resistance	18000 ohm	Typical

1953 RFT RUNDFUNK TECHNIK

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	450 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	2.5 W	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Screen Dissipation	0.5 W	—
Maximum Cathode Current	25 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5200 μ S	Typical
Plate Resistance	300000 ohm	Typical


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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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	450 mA	—
Application	VHF Television Frequency Changer	BandI;BandII


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1958 Mullard Receiving Tubes

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

1958 MULLARD RECEIVING TUBES

Section 1 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Local oscillator	—

Section 2 · Pentode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Frequency changer / mixer	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum frequency for frequency-changer service	220 MHz	—



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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
Plate voltage	150 V	ClassA
Cathode resistor	56 ohm	ClassA
Plate current	18 mA	ClassA

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	5000 ohm	ClassA
Transconductance	8500 uS	ClassA
Amplification factor	40	ClassA

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	ClassA
Screen voltage	110 V	ClassA
Cathode resistor	68 ohm	ClassA
Plate current	10 mA	ClassA
Screen current	3.5 mA	ClassA

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	400000 ohm	ClassA
Transconductance	5200 uS	ClassA



TUBE TINKER
ELECTRON TUBE DATABASE

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1961 Ferranti Technical Handbook

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

1961 FERRANTI TECHNICAL HANDBOOK

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	100 V	—
Plate Current	14 mA	—
Transconductance	6500 uS	—
Amplification Factor	32 ratio	—
Maximum Intended Frequency	220 MHz	FrequencyChanger

1961 FERRANTI TECHNICAL HANDBOOK

Section 2 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	170 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen Voltage	170 V	—
Plate Current	10 mA	—
Screen Current	2.8 mA	—
Transconductance	7500 μ S	—



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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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	13.5 mA	Triode;PlateVoltage=125V

1961 TUNG SOL

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	9.5 mA	Pentode;PlateVoltage=125V



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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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament voltage	6.3 V	Published rating
Heater/filament current	450 mA	Published rating
Pentode transconductance	4000 μ S	PentodeSection
Triode amplification factor	40	TriodeSection

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode plate voltage	300 V	PentodeSection
Pentode plate current	10 mA	PentodeSection
Pentode control-grid bias	-0.7 V	PentodeSection
Pentode screen current	3.5 mA	PentodeSection
Triode plate voltage	150 V	TriodeSection
Triode control-grid bias	-1 V	TriodeSection
Triode plate current	18 mA	TriodeSection



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1963 Mullard

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1963 MULLARD

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate voltage	150 V	Section2
Triode plate current	18 mA	Section2
Triode control-grid voltage	-1 V	Section2
Triode transconductance	8500 μ S	Section2
Triode amplification factor	40 ratio	Section2
Triode plate resistance	5000 Ohm	Section2

Section 2 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode plate voltage	250 V	Section1
Pentode screen-grid voltage	110 V	Section1
Pentode plate current	10 mA	Section1
Pentode screen-grid current	3.5 mA	Section1
Pentode control-grid voltage	-0.9 V	Section1
Pentode transconductance	5200 μ S	Section1
Pentode plate resistance	400000 Ohm	Section1
Pentode screen-to-control-grid amplification factor	35 ratio	Section1

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Conversion conductance	1650 μ S	FrequencyChanger;Va=170V
Conversion conductance	1800 μ S	FrequencyChanger;Va=200V
Conversion conductance	1900 μ S	FrequencyChanger;Va=250V



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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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	450 mA	—
Grid To Plate Capacitance	1.8 pF	—
Input Capacitance	2.8 pF	—
Output Capacitance	2 pF	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7500 μ S	—
Amplification Factor	60	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Supply Voltage	125 V	TriodeUnit
Plate Current	13.5 mA	TriodeUnit

1965 SYLVANIA ELECTRONIC TUBES VOL3

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
GridToPlateCapacitanceMaximum	0.015 pF	—
Input Capacitance	5 pF	—
Output Capacitance	3.5 pF	—
Plate Resistance	200000 ohm	—
Transconductance	5000 μ S	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Supply Voltage	125 V	PentodeUnit
Screen Voltage	110 V	PentodeUnit
Plate Current	9.5 mA	PentodeUnit
Screen Current	3.5 mA	PentodeUnit



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1966 Tung Sol Electronic Tubes 2 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	125 V	ClassA
Grid #1 voltage	-1 V	ClassA
Plate current	13.5 mA	ClassA
Heater warm-up time	11 s	BothSections

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7500 μ S	—
Amplification factor	40	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	1.5 pF	—
Input capacitance	2.8 pF	—
Output capacitance	1.5 pF	—

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	125 V	ClassA
Grid #2 voltage	110 V	ClassA
Grid #1 voltage	-1 V	ClassA
Plate current	9.5 mA	ClassA
Grid #2 current	3.5 mA	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5000 μ S	—
Zero-bias transconductance	5500 μ S	E _b =100V;E _{c2} =70V

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.02 pF	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	5.5 pF	—
Output capacitance	2.6 pF	—



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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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension filAMEnt ccresrsrsecsoscrossomcrsessesenseenseceseossececsaeceness VÊ	6.3 V	—
Heater current msses If	450 mA	—
Tension d'AnOdE Srereseeenesenenmnens Vä 300	300 V	—
Tension de grille n° Z uerserecrnvereseesceuuess... VE	300 V	—
Puissance appliquée à la gnlle n° 2 PgnN	0.5 W	—
Tension entre filament et cathode VfK 90	90 V	—
TeEnsion d'AnOdE cerrreresssesensemreesenensu... VA 150	250 V	—
Screen-grid voltage ... Veg,	110 V	—
Plate current Ia 18	10 mA	—
Courant de grille n° 2 Ig2	3.5 mA	—
envacorrenerase aneonesmeenesecueuse SS 8,5	5.2 mA	—
RÉSISTANCE INtErNE cercencsesaemncsenssseeuces P 5	400 kΩ	—
=10 ;LA) -Vgbl -12	-10 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Capacitance grille/anode Ce/a 1,8	1.8 pF	InterelectrodeCapacitance

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Capacitance d'entrée . Ce 2,5	2.5 pF	InterelectrodeCapacitance
Capacitance de soîitie Cs 1,0	0.4 pF	InterelectrodeCapacitance
Capacitance grille n° 1/anode ... Cg,/a 0,006	0.01 pF	InterelectrodeCapacitance
Capacitance d'entrée Ce 5	5 pF	InterelectrodeCapacitance
Capacitance de sortie CS 3,5	2.6 pF	InterelectrodeCapacitance

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