

ELECTRONIC TUBE REFERENCE

6463

Voltage - Dual Triode (similar) electronic tube

CONSOLIDATED TECHNICAL DATA
2 SECTIONS
CONSTRUCTION
TRIODE-TRIODE

Dual triode documented across Mullard, Philips, Amperex, Siemens, AEG, and GE literature, providing two triode sections for general electronic amplification where its published characteristics are suitable.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9CZ	BASE PINS	9
NOMINAL HEATER	6.3 V / 600 mA	PARALLEL HEATER	6.3 V / 600 mA
HEATING	Indirect	SERIES OPERATION	Capable
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

9CZ - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	3800 Ω
TRANSCONDUCTANCE	0.0052 S
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	4 W
MAXIMUM CATHODE CURRENT	28 mA
<i>Representative electrical section.</i>	

SECTION2 Triode	
PLATE RESISTANCE	3800 Ω
TRANSCONDUCTANCE	0.0052 S
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	4 W
MAXIMUM CATHODE CURRENT	28 mA
<i>Second identical physical triode section; added to align rows with SectionCount.</i>	

Mullard dualtriode with published ratings and characteristics extracted from the supplied datasheet.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1953 AEG

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

1953 AEG

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical anode voltage	250 V	ComputerService
Typical anode current per system	14.5 mA	ComputerService

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Insulation resistance	100 MOhm	—



SOURCE OPERATING CONDITIONS

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1958 Mullard Receiving Tubes

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1958 MULLARD RECEIVING TUBES

Section 1 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Industrial long-life amplifier	—



195X General Electric Essential Characteristics

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195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 1 · Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	3 pF	EachSection
Output capacitance	0.6 pF	EachSection
Grid-to-plate capacitance	5 pF	EachSection

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	ClassA;EachSection
Cathode resistor	620 Ω	ClassA;EachSection
Plate current	14.5 mA	ClassA;EachSection
Plate voltage	100 V	FrequencyHalver;EachSection
Plate voltage	200 V	FrequencyHalver;EachSection
Control-grid voltage	-11 V	FrequencyHalver;EachSection
Plate current	1 mA	FrequencyHalver;EachSection

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	3850 Ω	EachSection
Transconductance	5200 μS	EachSection
Amplification factor	20	EachSection



1963 Amperex Condensed

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1963 AMPEREX CONDENSED

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	—
Cathode resistor	620 ohm	—
Plate current	14.5 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5200 uS	—
Amplification factor	20	—



SOURCE DATA APPENDIX

1963 Mullard

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1963 MULLARD

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterOrFilamentVoltage	12.6 V	—
HeaterOrFilamentCurrent	300 mA	—
Plate Voltage	250 V	—
Plate Current	14.5 mA	—
Transconductance	5200 uS	—
Plate Resistance	3850 ohm	—
Amplification Factor	20	—

SOURCE OPERATING CONDITIONS

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1963 Philips Electron Tubes Handbook V1

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1963 PHILIPS ELECTRON TUBES HANDBOOK V1

Section 1 · Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	5.2 pF	EachSection
Plate capacitance	0.6 pF	EachSection
Grid capacitance	3.4 pF	EachSection

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	250 V	EachSection
Cathode resistor	620 Ω	EachSection
Plate current	14.5 mA	EachSection
Plate voltage	120 V	EachSection
Control-grid voltage	-2 V	EachSection
Plate current	21 mA	EachSection
Peak cathode current maximum	350 mA	Pulse;EachSection
Application	Computer and switching service with prolonged cutoff operation Section1	

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5200 μ S	EachSection
Amplification factor	20	EachSection



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1963 Philips Electron Tubes Handbook V3

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V3

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Vf = 6.3 12.6 V
Heater current	600 mA	If = 600 300 mA
Plate voltage	100 V	Vf = 6.3 V Va =100 V
Heater voltage	6.3 V	Vf = 6.3 V Va =100 V
Heater current	600 mA	If = 600 570-630 mA. Ig = 200 μ A
Plate voltage	120 V	Ca = 0.6 0.4-0.8 pP Va = 120 V
Plate capacitance	0.6 pF	Ca = 0.6 0.4-0.8 pP Va = 120 V
Grid capacitance	3.4 pF	Cg = 3.4 2.9-3.9 pP Vg = -2 V
Cathode-heater capacitance	3.5 pF	Ckf = 3.5 pP Ia = 21 14-28 10 mA
Plate current	21 mA	Ckf = 3.5 pP Ia = 21 14-28 10 mA
Plate voltage	200 V	Ca' = 0.5 0.35-0.65 pP Va = 200 V
Plate voltage	120 V	Caa' . 0.9 <1.2 pP Va =120 V
Plate supply voltage	250 V	Vba = 250 V Rg =0.1 MSS
Cathode resistor	620 ohm	Rk = 620 S2 -I g = < 0.2 1 μ A E--
Transconductance	2 mA/V	Rk = 620 S2 -I g = < 0.2 1 μ A E--
Plate current	14.5 mA	Ia = 14.5 mA
Cathode-heater voltage	1 V	S •.= 5.2 3.9-6.5 mA/V Vkf 1) = 200 V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	20	$\mu 20 R 2) = 1 MS$
Heater voltage	6.3 V	$V_f = 6.3 V$
Plate supply voltage	150 V	$V_{ba} = 150 V$
Cathode resistor	90 ohm	$R_k = 90Q$
Load resistance	3900 kohm	$R_a = 3900$

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	1 mA/V	6) With $S = 1 \%$. $T_{imp} = \max. 10 \mu sec$


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1963 Siemens

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

1963 SIEMENS

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	600 mA	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5200 μS	Nominal/Bogey
Amplification factor	20	Nominal/Bogey


SOURCE DATA APPENDIX

1999 Philips 0-D

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

1999 PHILIPS 0-D
Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode-grid capacitance	5 pF	Interelectrode
Anode capacitance	0.6 pF	Interelectrode
Grid capacitance	3.4 pF	Interelectrode

TUBE TINKER

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