



ELECTRONIC TUBE REFERENCE

5840

Voltage Pentode - Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

PENTODE

Subminiature sharp-cutoff pentode designed for high-frequency circuits and on-off electronic control applications.

GENERAL CHARACTERISTICS

BASE DESIGNATION	8DL	BASE PINS	8
NOMINAL HEATER	6.3 V / 150 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

8DL - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	260000 Ω
TRANSCONDUCTANCE	0.005 S
MAXIMUM PLATE VOLTAGE	165 V
MAXIMUM SCREEN VOLTAGE	155 V
MAXIMUM PLATE DISSIPATION	1.1 W
MAXIMUM SCREEN DISSIPATION	0.55 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Published promoted fields populated semantically; identical repeated sections compressed.</i>	

Sharp-cutoff 8-pin subminiature pentode designed for high-frequency circuits and on-off control applications, with an internal suppressor-grid connection.



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1938 Raytheon

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1938 RAYTHEON

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	150 mA	Nominal
Maximum Plate Voltage	165 V	—
Maximum Plate Dissipation	0.85 W	—
Maximum Cathode Current	20 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5000 μ S	Typical
Plate Resistance	175000 ohm	Typical



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1940 RCA

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1940 RCA

Section 1 · Pentode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	BroadBand_RF_IF_Amplifier text	—



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1950 Sylvania

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1950 SYLVANIA

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	260000 ohm	—
Transconductance	5000 μ S	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	165 V	—
Maximum Screen Voltage	155 V	—
Maximum Plate Dissipation	1.1 W	—
Maximum Screen Dissipation	0.55 W	—
Maximum Cathode Current	16.5 mA	—
Plate Voltage	100 V	—
Screen Voltage	100 V	—
Plate Current	7.5 mA	—
Screen Current	2.4 mA	—



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1958 Compagnie General

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1958 COMPAGNIE GENERAL

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	150 mA	—
Approximate Maximum RF Frequency	400 MHz	—
Grid-to-Plate Capacitance	0.03 pF	Maximum without shield
Input Capacitance	4 pF	Without shield
Output Capacitance	1.9 pF	Without shield



SOURCE DATA APPENDIX

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195X General Electric Essential Characteristics

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195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	4.2 pF	Section1
Output capacitance	3.4 pF	Section1
Grid-to-plate capacitance	0.015 pF	Section1

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA
Screen voltage	100 V	ClassA
Cathode resistor	150 Ω	ClassA
Plate current	7.5 mA	ClassA
Screen current	2.4 mA	ClassA

Characteristic		
Parameter	Published Value	Condition / Note
Plate resistance	260000 Ω	ClassA
Transconductance	5000 μS	ClassA


SOURCE DATA APPENDIX

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1961 Tung Sol

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1961 TUNG SOL

Section 1 · Pentode

Capacitance		
Parameter	Published Value	Condition / Note
Grid To Plate Capacitance	0.015 pF	WithShield;Maximum
Input Capacitance	4.2 pF	WithShield
Output Capacitance	3.4 pF	WithShield


SOURCE DATA APPENDIX

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1966 Tung Sol Electronic Tubes 3 of 4

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1966 TUNG SOL ELECTRONIC TUBES 3 OF 4

Section 1 · Pentode

Other		
Parameter	Published Value	Condition / Note
Heater voltage	6.3 V	—
Heater current	150 mA	—
Heater-cathode voltage, either polarity	200 V	—
Plate current	7.5 mA	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen current	2.4 mA	ClassA
Maximum plate voltage	165 V	—
Maximum screen voltage	155 V	—
Maximum plate dissipation	1.1 W	—
Maximum screen dissipation	0.55 W	—
Maximum cathode current	16.5 mA	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid1-to-plate capacitance maximum	0.03 pF	—
Input capacitance	4 pF	—
Output capacitance	1.9 pF	—


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1968 General Electric Co

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1968 GENERAL ELECTRIC CO

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	100 V	ClassA
Screen Voltage	100 V	ClassA
Plate Current	7.5 mA	ClassA
Screen Current	2.4 mA	ClassA
Input Capacitance	4.2 pF	ClassA


SOURCE DATA APPENDIX

1971 RCA HB3 Binder 3 of 7

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1971 RCA HB3 BINDER 3 OF 7

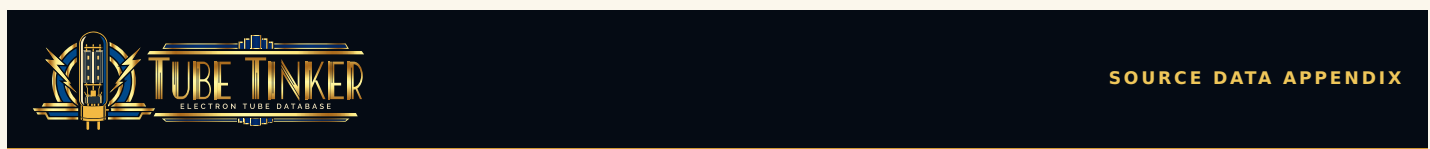
Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage – published value 1	6.3 V	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Voltage – published value 2	5 V	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Current	150 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Plate Supply Voltage	100 V	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Grid-No.2 Supply Voltage	100 V	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Plate Resistance	260000 ohm	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Transconductance	5000	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Plate Current	7.5 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Grid-No.2 Current	2.4 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
current of 10 μ amp – published value 1	10 V	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
current of 10 μ amp – published value 2	-9 V	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Current – published value 1	1 A	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Heater Current – published value 2	138 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Heater Current – published value 3	162 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Capacitance – published value 1	2	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Capacitance – published value 2	0.015	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Input Capacitance – published value 1	2	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Input Capacitance – published value 2	3.5	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Input Capacitance – published value 3	4.9	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Output Capacitance – published value 1	2	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Output Capacitance – published value 2	2.9	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Output Capacitance – published value 3	3.9	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to Plate – published value 1	0.015 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Grid No.1 to Plate – published value 2	0.03 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC PLATE VOLTAGE	165 V	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
GRID-No.2 (SCREEN) VOLTAGE	155 V	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
Negative bias value	55 V	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
PLATE DISSIPATION – published value 1	1 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
PLATE DISSIPATION – published value 2	1 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
GRID-No.2 INPUT – published value 1	0 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
GRID-No.2 INPUT – published value 2	55 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
DC CATHODE CURRENT	16.5 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.
For cathode-bias operation	1.2 mA	Published datasheet value; multiple values on a source row represent separate source-table conditions or limits.



SOURCE OPERATING CONDITIONS

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1999 Philips 0-D

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1999 PHILIPS 0-D

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater current	150 mA	—
Plate voltage	100 V	—
Screen voltage	100 V	—
Plate current	7.5 mA	—
Screen current	2.4 mA	—
Transconductance	5000 μ S	—
Plate resistance	260000 ohm	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	4.2 pF	—
Output capacitance	3.4 pF	—
Plate-grid capacitance maximum	0.015 pF	—