

ELECTRONIC TUBE REFERENCE

6DK6

Voltage - Pentode Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Sharp-cutoff miniature wideband pentode developed particularly for fixed-gain television IF amplifier stages.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7CM	BASE PINS	7
NOMINAL HEATER	6.3 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7CM - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	350000 Ω
TRANSCONDUCTANCE	0.0098 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	150 V
MAXIMUM PLATE DISSIPATION	2.3 W
MAXIMUM SCREEN DISSIPATION	0.5 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Published promoted values applied where applicable; additional ratings and operating data retained as parameters.</i>	

The 6DK6 is a 7-pin miniature sharp-cutoff pentode designed as a wide-band high-frequency amplifier, particularly for television IF stages.



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
Plate Voltage	125 V	Published operating/characteristic table
Screen Voltage	2 V	Published operating/characteristic table
Grid Voltage	-6.5 V	Published operating/characteristic table

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	12 mA	Published operating/characteristic table
Screen Current	3.8 mA	Published operating/characteristic table
Transconductance	9800 μ S	Published operating/characteristic table
Plate Resistance	0.35 ohm	Published operating/characteristic table



SOURCE OPERATING CONDITIONS

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	125 V	—
Screen-grid voltage	125 V	—
Cathode bias resistor	56 Ohm	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	12 mA	—
Screen-grid current	3.8 mA	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	350000 Ohm	—
Transconductance	9800 uS	—
Control-grid cutoff voltage	-6.5 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.025 pF	Unshielded



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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

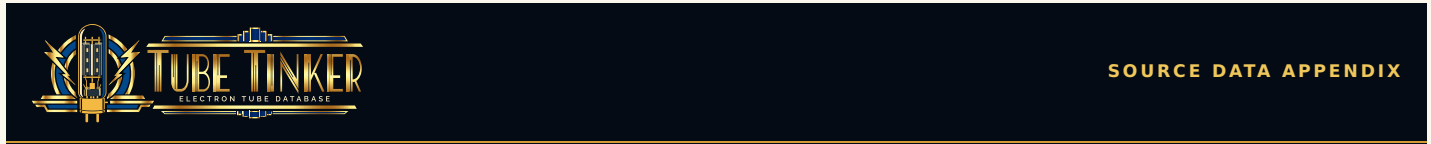
OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate voltage	150 V	—
Typical screen voltage	125 V	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	12000 uS	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid1-to-plate capacitance maximum	0.015 pF	—
Input capacitance	5.5 pF	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output capacitance	2.5 pF	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Wideband television IF amplifier	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Pentode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.025 pF	—
Input capacitance	6.3 pF	—
Output capacitance	1.9 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	125 V	ClassA1
Screen voltage	125 V	ClassA1
Plate current	12 mA	ClassA1
Screen current	3.6 mA	ClassA1



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1968 General Electric Co

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

1968 GENERAL ELECTRIC CO

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	—
HeaterCurrentNominal	300 mA	—
Typical Plate Voltage	125 V	ClassA
Typical Screen Voltage	125 V	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	9800 uS	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

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

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage	6.3 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Current	300 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
heater	6.3	Published datasheet value; multiple values represent separate source-table limits or conditions.
shield, grid No.2, and heater	1.9	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate-Supply Voltage	125 V	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No 3	3	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2-Supply Voltage	125 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Cathode Resistor	56 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Resistance (Approx.)	0.35 Mohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Transconductance	9800	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Current	12 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Current	3.8 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
plate μ a = 20 – published value 1	20 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
plate μ a = 20 – published value 2	-6.5 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 1 -Grid No.1 – published value 1	1	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 1 -Grid No.1 – published value 2	6	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 2 -Cathode – published value 1	2	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 2 -Cathode – published value 2	7	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 3 -Heater	3	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pin 4 -Heater	4	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 5 -Plate	5	Published datasheet value; multiple values represent separate source-table limits or conditions.
165 and 330 volts – published value 1	165 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
165 and 330 volts – published value 2	330 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
GRID-N°2 VOLTS=125 – published value 1	2 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
GRID-N°2 VOLTS=125 – published value 2	125 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
PLATE VOLTS=125	125 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
GRID N~3 CONNECTED TO	3	Published datasheet value; multiple values represent separate source-table limits or conditions.
CATHODE AT SOCKET. tttttt/tttt///1t///\////////	1	Published datasheet value; multiple values represent separate source-table limits or conditions.
GRID-NQ2 VOLTS=125	125 V	Published datasheet value; multiple values represent separate source-table limits or conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to plate	0.02 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
PLATE VOLTAGE	330 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
GRID-No.3 (SUPPRESSOR-GRID) VOLTAGE	0 V	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE	33 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Positive-bias value	0 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
PLATE DISSIPATION	2.3 W	Published datasheet value; multiple values represent separate source-table limits or conditions.
respect to cathode	200 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
respect to cathode	200 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
For fixed-bias operation	0.25 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
For cathode-bias operation	1 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.



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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	15 mA	Published in approved 12DK6 target entry; Section1
Equivalent Noise Resistance	300 Ω	Published in approved 12DK6 target entry; Section1
Grid-Circuit Resistance	1 MΩ	Published in approved 12DK6 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater to Cathode Circuit Resistance	0.02 MΩ	Published in approved 12DK6 target entry; Section1
Plate Voltage	330 V	Published in approved 12DK6 target entry; Section1
Grid-No.3 (Suppressor-Grid) Voltage, Positive value	0 V	Published in approved 12DK6 target entry; Section1
Grid-No.2 (Screen-Grid) Supply Voltage	330 V	Published in approved 12DK6 target entry; Section1
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0 V	Published in approved 12DK6 target entry; Section1
Plate Dissipation	2.3 W	Published in approved 12DK6 target entry; Section1
For grid-No.2 voltages up to	165 V	Published in approved 12DK6 target entry; Section1
For grid-No.2 voltages up to 165 volts	0.55 W	Published in approved 12DK6 target entry; Section1
For grid-No.2 voltages between 165 and	330 V	Published in approved 12DK6 target entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Internal Shield	6.3 pF	Published in approved 12DK6 target entry; Section1
Internal Shield	1.9 pF	Published in approved 12DK6 target entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.1 Voltage (Approx.) for plate current of 20 fiA	-6.5 V	Published in approved 12DK6 target entry; Section1

TUBE TINKER

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