

ELECTRONIC TUBE REFERENCE

6GX6

Voltage Pentode - Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
PENTODE

Dual-control sharp-cutoff pentode for television FM detection, gated AGC, and noise-inverter signal-processing circuits.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7EN	BASE PINS	7
NOMINAL HEATER	6.3 V / 450 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7EN - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – G1	A	G1 – Control Grid	CONNECTED
PIN2 – IS	A	IS – Internal Screen	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

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	140000 Ω
TRANSCONDUCTANCE	0.0037 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	1.7 W
MAXIMUM SCREEN DISSIPATION	1 W
MAXIMUM GRID DISSIPATION	0.1 W
<i>Dual-control pentode; grid-3-to-plate transconductance preserved as parameter.</i>	

Sharp-cutoff dual-control-grid pentode for gated AGC and television noise-inverter service.



SOURCE OPERATING CONDITIONS

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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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	450 mA	—
Plate voltage	300 V	Typical operating conditions
Plate current	3.7 mA	Typical operating conditions



SOURCE OPERATING CONDITIONS

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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 · Pentode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid 1 to plate capacitance	0.026 pF	—
Grid 1 input capacitance	8 pF	—
Grid 1 to grid 3 capacitance	0.12 pF	—
Grid 3 to plate capacitance	1.6 pF	—
Grid 3 total capacitance	6.5 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	150 V	ClassA1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid 2 supply voltage	100 V	ClassA1
Cathode resistor	180 ohm	ClassA1
Plate current	3.7 mA	ClassA1
Grid 2 current	3 mA	ClassA1

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid 3 transconductance	750 μ S	ClassA1


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1968 General Electric Co

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1968 GENERAL ELECTRIC CO

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid3 Transconductance	750 μ S	—
Typical Plate Current	3.7 mA	—
Typical Screen Current	3 mA	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
TypicalPlateSupplyVoltage	150 V	—
TypicalScreenSupplyVoltage	100 V	—


SOURCE DATA APPENDIX

1971 RCA HB3 Binder 5 of 7

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

1971 RCA HB3 BINDER 5 OF 7
Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	150 V	ClassA
Plate current	3.7 mA	ClassA
Maximum plate voltage	330 V	—
Maximum screen-grid voltage	330 V	—
PLATE VOLTAGE	300 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE	300 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Negative-bias value	50 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Positive-bias value	0 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
For grid-No.2 voltages up to 150 volts – published value 1	150 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
For grid-No.2 voltages up to 150 volts – published value 2	1 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
GRID-No.3 INPUT	0.1 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
PLATE DISSIPATION	1.7 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Heater negative with respect to cathode	200 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater positive with respect to cathode	2006 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid-No.3-Circuit Resistance – published value 1	0 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid-No.3-Circuit Resistance – published value 2	68 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
For fixed-bias operation	0.22 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
For cathode-bias operation – published value 1	0 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
For cathode-bias operation – published value 2	47 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	140000 ohm	ClassA
Transconductance	3700 uS	ClassA
Voltage (AC or DC)	6.3 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Current – published value 1	450 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Current – published value 2	6 A	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Warm-up time (Average)	11	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid No.1 to plate	0.022	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
and heater	8	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.3 to plate	1.6	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid No.1 to grid No 3 – published value 1	3	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid No.1 to grid No 3 – published value 2	0.11	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
No.1, and heater	7.5	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Supply Voltage	150 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid-No.3 Supply Voltage	0 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid-No.2 Supply Voltage	100 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid-No.1 Supply Voltage	0 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Cathode Resistor	180 ohm	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Resistance (Approx)	0.14 Mohm	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Transconductance, Grid No.1 to Plate	3700	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Transconductance, Grid No.3 to Plate	750	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Current	3.7 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid-No.2 Current	3 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
for plate $\mu a = 20$ – published value 1	20 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
for plate $\mu a = 20$ – published value 2	-4.5 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
for plate $\mu a = 20$ – published value 1	20 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
for plate $\mu a = 20$ – published value 2	-7 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 1 -Grid No.1 – published value 1	1	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 1 -Grid No.1 – published value 2	4	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 2 -Cathode, – published value 1	2	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 2 -Cathode, – published value 2	5	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Internal	6	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Shield	7	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 3 -Heater	3	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
For grid-No.2 voltages between 150	150 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
and 300 volts	300 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
GRID-No.2 VOLTS=100	100 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE (I _y)OR GRID-No.2 (I~2) MILLIAMPERES	2 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
PLATE VOLTS=150	150 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
GRID-No.2 VOLTS=100	100 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
GRID-Na2 VOLTS=100	100 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
GRID-No.2 VOLTS = 100	100 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.



SOURCE DATA APPENDIX

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

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1-to-plate capacitance	0.026 pF	—
Grid No.1-to-Grid No.3 capacitance	0.12 pF	—
Grid No.3-to-plate capacitance	1.6 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	150 V	ClassA
Screen-grid supply voltage	100 V	ClassA
Cathode-bias resistor	180 ohm	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	3.7 mA	ClassA
Peak positive-pulse plate voltage	600 V	GatedAGC

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance Grid No.3 to plate	750 μ S	—