

ELECTRONIC TUBE REFERENCE

6DE6

Voltage Pentode - Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
PENTODE

Sharp-cutoff high-transconductance pentode for television video-IF amplification around 40 MHz.

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	250000 Ω
TRANSCONDUCTANCE	0.008 S
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM SCREEN VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	2.3 W
MAXIMUM SCREEN DISSIPATION	0.55 W
<i>Published promoted values applied where applicable; additional ratings and operating data retained as parameters.</i>	

The 6DE6 is a 7-pin miniature sharp-cutoff pentode designed for gain-controlled video IF amplification around 40 megacycles.

SOURCE OPERATING CONDITIONS

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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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	ClassA
Screen voltage	150 V	ClassA
Cathode resistor	180 ohm	ClassA
Plate current	9.5 mA	ClassA
Screen current	2.8 mA	ClassA
Plate resistance	600000 ohm	ClassA
Transconductance	6200 uS	ClassA

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	6.3 pF	—
Output capacitance	1.9 pF	—
Grid-to-plate capacitance	0.02 pF	—

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
Plate Voltage	125 V	Published operating/characteristic table
Screen Voltage	125 V	Published operating/characteristic table
Grid Voltage	-9 V	Published operating/characteristic table

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	15.95 mA	Published operating/characteristic table
Screen Current	2 mA	Published operating/characteristic table
Transconductance	8000 μ S	Published operating/characteristic table
Plate Resistance	0.25 ohm	Published operating/characteristic table



SOURCE DATA APPENDIX

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-to-plate capacitance	0.015 pF	—
Input capacitance	6.5 pF	—
Output capacitance	2 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	125 V	ClassA1
Screen voltage	125 V	ClassA1
Plate current	15.5 mA	ClassA1
Screen current	4.2 mA	ClassA1



SOURCE OPERATING CONDITIONS

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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

Section 1 · Pentode

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
Plate Resistance	250000 Ohm	—
Transconductance	8000 uS	—



SOURCE OPERATING CONDITIONS

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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

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage – published value 1	6.3 V	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage – published value 2	10 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.
grid No.3 6 internal	6	Published datasheet value; multiple values represent separate source-table limits or conditions.
heater – published value 1	6.5	Published datasheet value; multiple values represent separate source-table limits or conditions.
heater – published value 2	6.5	Published datasheet value; multiple values represent separate source-table limits or conditions.
No.2, and heater – published value 1	2	Published datasheet value; multiple values represent separate source-table limits or conditions.
No.2, and heater – published value 2	3	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.
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.)	0.25 Mohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Transconductance	8000	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Current	15.5 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.2 Current	4.2 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
for plate $\mu a = 20$ – published value 1	20 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
for plate $\mu a = 20$ – published value 2	-9 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
and cathode resistor (ohms) = 0 – published value 1	0 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
and cathode resistor (ohms) = 0 – published value 2	-5.5 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.
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.
tween 165 and 330 volts – published value 1	165 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
tween 165 and 330 volts – published value 2	330 V	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Mith external shield JEDEC xo.g 16 connected to cathode	16	Published datasheet value; multiple values represent separate source-table limits or conditions.
Connected to Cathode at 5oc ket	5	Published datasheet value; multiple values represent separate source-table limits or conditions.
GRID–Ns2 VOLTS=125	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–N42 VOLTS=125	125 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
TRANSCONDUCTANCE(9m) - MICROMHOS	9 uS	Published datasheet value; multiple values represent separate source-table limits or conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to plate – published value 1	0 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid No.1 to plate – published value 2	25 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid No.1 to plate – published value 3	0.015 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.
GRID–No.2 (SCREEN-GRID) SUPPLY VOLTAGE	330 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.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE DISSIPATION	2.3 mA	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 – published value 1	0 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
For fixed-bias operation – published value 2	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 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 unshielded	0.025 pF	—
Grid No.1-to-plate capacitance shielded	0.015 pF	—
Grid No.1-to-other-electrodes capacitance	6.5 pF	—
Plate-to-other-electrodes capacitance	2 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	125 V	ClassA
Screen-grid supply voltage	125 V	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode-bias resistor	66 ohm	ClassA
Plate current	15.5 mA	ClassA
Screen-grid current	4.2 mA	ClassA
Transconductance	8000 uS	ClassA