

ELECTRONIC TUBE REFERENCE

7AK7

Voltage - Pentode Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

PENTODE

Sharp-cutoff lock-in pentode designed specifically for gated-amplifier service, with suppressor-grid control for electronic gating.

GENERAL CHARACTERISTICS

BASE DESIGNATION	8V	BASE PINS	8
NOMINAL HEATER	6.3 V / 800 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

8V - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	11500 Ω
TRANSCONDUCTANCE	0.006 S
MAXIMUM PLATE VOLTAGE	200 V
MAXIMUM SCREEN VOLTAGE	100 V
MAXIMUM PLATE DISSIPATION	8.5 W
MAXIMUM SCREEN DISSIPATION	2.5 W
<i>Promoted from printed maximum/characteristic columns; additional published values are retained in TUBE_SECTION_PARAMETER.</i>	

The 7AK7 is a sharp-cutoff lock-in pentode specifically designed and rated for gating service, with an additional control voltage applied to the suppressor grid.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	2 pF	Section1
Output capacitance	9.5 pF	Section1
Grid-to-plate capacitance	0.7 pF	Section1

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate voltage	150 V	ClassA;Grid3=0V
Typical screen voltage	90 V	ClassA;Grid3=0V
Typical plate current	21 mA	ClassA;Grid3=0V

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	11500 Ohm	Grid3=0V
Transconductance	6000 uS	Grid3=0V

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

195X Raytheon Special Purpose Tubes

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

195X RAYTHEON SPECIAL PURPOSE TUBES

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	150 V	MixerGatedAmplifier
Control-grid voltage	0 V	MixerGatedAmplifier
Screen voltage	90 V	MixerGatedAmplifier
Suppressor-grid voltage	0 V	MixerGatedAmplifier
Plate current	40 mA	MixerGatedAmplifier
Screen current	21 mA	MixerGatedAmplifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	11500 Ω	Section1
Transconductance	6500 μS	Section1



SOURCE DATA APPENDIX

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
Heater voltage	6.3 V	Nominal
Heater current	800 mA	Nominal
Plate voltage	150150150 V	Typical operating conditions
Screen voltage	100 V	Typical operating conditions



SOURCE DATA APPENDIX

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum_heater_cathode_voltage	90 V	—
Maximum_positive_grid_1_voltage	50 V	—
Maximum_positive_grid_3_voltage	200 V	—
Maximum_negative_grid_1_voltage	-100 V	—
Maximum_negative_grid_3_voltage	-200 V	—
Plate_voltage	150 V	ClassA
Screen_voltage	90 V	ClassA
Grid_1_voltage	0 V	ClassA
Grid_3_voltage	0 V	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate_current	40 mA	ClassA
Screen_current	21 mA	ClassA

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.7 pF	—
Input capacitance	12 pF	—
Output capacitance	9.5 pF	—
Suppressor-grid-to-plate capacitance	4 pF	—

TUBE TINKER

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and their source documents.

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