

ELECTRONIC TUBE REFERENCE

6AK6

Power - Pentode Single (NOT beam) (under 10W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Miniature industrial audio power pentode providing approximately 1.1 W output from a compact low-dissipation design.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7BK	BASE PINS	7
NOMINAL HEATER	6.3 V / 150 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7BK - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – G1	A	G1 – Control Grid	CONNECTED
PIN2 – G3	A	G3 – Suppressor Grid	CONNECTED
PIN2 – IS	A	IS – Internal Screen	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 – K	A	K – Cathode	CONNECTED

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	200000 Ω
TRANSCONDUCTANCE	0.0023 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	240 V
MAXIMUM PLATE DISSIPATION	2.75 W
MAXIMUM SCREEN DISSIPATION	0.75 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Published maximum ratings, representative operating characteristics, and capacitance columns reviewed.</i>	

Miniature industrial power-output pentode for compact audio-frequency power-amplifier service.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1958 Brimar Radio Valve No 7

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

1958 BRIMAR RADIO VALVE NO 7

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	180 V	ClassA
Plate Current	15 mA	ClassA
Screen Voltage	180 V	ClassA
Power Output	1.1 W	ClassA



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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	300 V	Published handbook rating
Maximum screen voltage	250 V	Published handbook rating
Plate voltage	180 V	ClassA
Screen voltage	180 V	ClassA
Control-grid bias	9 V	ClassA
Plate current	15 mA	ClassA
Screen current	2.5 mA	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Load resistance	10000 ohm	ClassA
Power output	1.1 W	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	200000 ohm	Published handbook characteristic
Transconductance	2300 μ S	Published handbook characteristic
Heater voltage	6.3 V	Published heater rating
Heater current	150 mA	Published heater rating

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	3.6 pF	Published capacitance column
Output capacitance	4.2 pF	Published capacitance column
Grid-to-plate capacitance	0.12 pF	Published capacitance column


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1960 RCA Industrial and Communications Types

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

1960 RCA INDUSTRIAL AND COMMUNICATIONS TYPES

Section 1 · Pentode

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


SOURCE DATA APPENDIX

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	180 V	ClassA
Screen Voltage	180 V	ClassA



SOURCE DATA APPENDIX

1971 RCA HB3 Binder 3 of 7

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

1971 RCA HB3 BINDER 3 OF 7
Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	150 mA	—
Maximum DC heater-cathode potential	100 V	—
Plate voltage	180 V	ClassA
Screen voltage	180 V	ClassA
Grid voltage	-7.5 V	ClassA
Plate current	10 mA	ClassA
Screen current	2.5 mA	ClassA
Load resistance	12000 ohm	ClassA
Power output	1.1 W	ClassA

Characteristic		
Parameter	Published Value	Condition / Note
Transconductance	2300 μ S	ClassA

Capacitance		
Parameter	Published Value	Condition / Note
Grid-to-plate capacitance	0.12 pF	—
Input capacitance	3.6 pF	—
Output capacitance	4.2 pF	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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
Heater Voltage (ae/de)	6.3 V	Published in approved 6AK6 target entry; Section1
Heater Current	160 mA	Published in approved 6AK6 target entry; Section1
Plate Voltage	300 V	Published in approved 6AK6 target entry; Section1
Screen Voltage (Grid No. 2)	260 V	Published in approved 6AK6 target entry; Section1
Plate Dissipation	2.75 W	Published in approved 6AK6 target entry; Section1
Screen Dissipation	0.75 W	Published in approved 6AK6 target entry; Section1
Plate Voltage	180 V	Published in approved 6AK6 target entry; Section1
Screen Voltage	180 V	Published in approved 6AK6 target entry; Section1
Grid Voltage (Grid No. 1)	-9 V	Published in approved 6AK6 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak A-F Grid Voltage	9 V	Published in approved 6AK6 target entry; Section1
Zero-Signal Plate Current	15 mA	Published in approved 6AK6 target entry; Section1
Transconductance	2300 μS	Published in approved 6AK6 target entry; Section1
Load Resistance	10000 Ω	Published in approved 6AK6 target entry; Section1
Max.-Sig. Power Output	1.1 W	Published in approved 6AK6 target entry; Section1
For fixed-bias operation	0.1 MΩ	Published in approved 6AK6 target entry; Section1
For cathode-bias operation	0.5 MΩ	Published in approved 6AK6 target entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate	0.12 pF	Published in approved 6AK6 target entry; Section1
Output	4.2 pF	Published in approved 6AK6 target entry; Section1

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