

ELECTRONIC TUBE REFERENCE

6BC5

Voltage - Pentode Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Sharp-cutoff pentode for compact RF/IF equipment operating at frequencies extending to approximately 400 MHz.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7BC	BASE PINS	7
NOMINAL HEATER	6.3 V / 600 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7BC - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – F	–	F – Filament	CONNECTED
PIN2 – 2P	B	P – Plate (Anode)	CONNECTED
PIN3 – 2G1	B	G1 – Control Grid	CONNECTED
PIN4 – FCT	–	FCT – Filament Center Tap	CONNECTED
PIN5 – 1G1	A	G1 – Control Grid	CONNECTED
PIN6 – 1P	A	P – Plate (Anode)	CONNECTED
PIN7 – F	–	F – Filament	CONNECTED

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	800000 Ω
TRANSCONDUCTANCE	0.0061 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	2.3 W
MAXIMUM SCREEN DISSIPATION	0.55 W
MAXIMUM HEATER-CATHODE VOLTAGE	200 V
WARM-UP TIME	11 s
<i>Published promoted fields populated semantically; identical repeated sections compressed where applicable.</i>	

Sharp-cutoff pentode used as an RF or IF amplifier in compact radio equipment at frequencies up to 400 MHz.



SOURCE OPERATING CONDITIONS

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1950 Sylvania

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

1950 SYLVANIA

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage. 3.15 4,2 6.3 Volts	6.3 V	Heater Voltage. 3.15 4,2 6.3 Volts
Heater Current. 600 450 300 Ma	300 mA	Heater Current. 600 450 300 Ma
Output. . .o 2.6 1.8 uuf	1.8 pF	Output. . .o 2.6 1.8 uuf
Plate Voltage. iuuenone. 300 300 Volts	300 V	Plate Voltage. iuuenone. 300 300 Volts
Piate Dissipation. 2.53 2.0 Watts	2 W	Piate Dissipation. 2.53 2.0 Watts
Grid No. 2 Supply Voltage..... Plate 300 Volts	300 V	Grid No. 2 Supply Voltage..... Plate 300 Volts
Grid No. 2 Dissipation. 0.5 Watts	0.5 W	Grid No. 2 Dissipation. 0.5 Watts
Plate Voltage. t 100 125 250 Volts	250 V	Plate Voltage. t 100 125 250 Volts
Grid No. 2 Voltage. 100 125 150 Volts	150 V	Grid No. 2 Voltage. 100 125 150 Volts
Transconductance. 4900 6100 5700 umhos	5700 umhos	Transconductance. 4900 6100 5700 umhos
Plate Resistance (approx.)..... 0.6 0.5 0.8 Megohm	0.8 Megohm	Plate Resistance (approx.)..... 0.6 0.5 0.8 Megohm

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current. ooiiiinn. 4.7 8.0 7.5 Ma	7.5 mA	Plate Current. ooiiiinn. 4.7 8.0 7.5 Ma
Grid No.2 Current. oooiunn. 1.4 2.4 2.1 Ma	2.1 mA	Grid No.2 Current. oooiunn. 1.4 2.4 Ma
Grid No. 1 Voltage for lp= 10pua..... -5 -6 -8 Volts	-8 V	Grid No. 1 Voltage for lp= 10pua..... -5 -6 -8 Volts
Plate Voltage. ccovvvnninnoin, 250 180 Volts	180 V	Plate Voltage. ccovvvnninnoin, 250 180 Volts
Transconductance. C.C.ovenve... 4400 6000 umhos	6000 umhos	Transconductance. C.C.ovenve... 4400 6000 umhos
Plate Resistance (approx.)..... 9000 6000 Ohms	6000 Ohms	Plate Resistance (approx.)..... 9000 6000 Ohms
Plate Current. C.oviviniininnnns 6.0 8.0 Ma	8 mA	Plate Current. C.oviviniininnnns 6.0 8.0 Ma

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No. 2 Voltage. Plate See Rating Chart	2 V	Grid No. 2 Voltage. Plate See Rating Chart



TUBE TINKER
ELECTRON TUBE DATABASE

SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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195X General Electric Essential Characteristics

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195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	PentodeConnection; OperatingPoint1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen voltage	150 V	PentodeConnection; OperatingPoint1
Plate current	7.5 mA	PentodeConnection; OperatingPoint1
Screen current	2.1 mA	PentodeConnection; OperatingPoint1
Plate resistance	800000 ohm	PentodeConnection; OperatingPoint1
Transconductance	5700 uS	PentodeConnection; OperatingPoint1
Plate voltage	125 V	PentodeConnection; OperatingPoint2
Screen voltage	125 V	PentodeConnection; OperatingPoint2
Plate current	8 mA	PentodeConnection; OperatingPoint2
Screen current	2.4 mA	PentodeConnection; OperatingPoint2
Plate resistance	500000 ohm	PentodeConnection; OperatingPoint2
Transconductance	6100 uS	PentodeConnection; OperatingPoint2
Plate voltage	100 V	PentodeConnection; OperatingPoint3
Screen voltage	100 V	PentodeConnection; OperatingPoint3
Cathode resistor	180 ohm	PentodeConnection; OperatingPoint3
Plate current	4.7 mA	PentodeConnection; OperatingPoint3
Screen current	1.4 mA	PentodeConnection; OperatingPoint3
Plate resistance	600000 ohm	PentodeConnection; OperatingPoint3
Transconductance	4900 uS	PentodeConnection; OperatingPoint3
Plate voltage	250 V	TriodeConnection; OperatingPoint4
Cathode resistor	820 ohm	TriodeConnection; OperatingPoint4
Plate current	6 mA	TriodeConnection; OperatingPoint4
Plate resistance	9000 ohm	TriodeConnection; OperatingPoint4
Transconductance	4400 uS	TriodeConnection; OperatingPoint4
Amplification factor	40	TriodeConnection; OperatingPoint4
Plate voltage	180 V	TriodeConnection; OperatingPoint5



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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6100 μ S	Typical
Heater Warmup Time	11 s	—



SOURCE DATA APPENDIX

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	100 Ohm	—
Plate current	8 mA	—
Screen-grid current	2.4 mA	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	500000 Ohm	—
Transconductance	6100 μ S	—
Maximum useful frequency	400 MHz	Approximate

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.02 pF	Shielded
Input capacitance	6.5 pF	Shielded
Output capacitance	2.6 pF	Shielded



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1971 RCA HB3 Binder 4 of 7

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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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage ac or dc	6.3 V	—
Current	300 mA	—
PLATE VOLTAGE max	300 V	—
GRID-No. (SCREEN) SUPPLY VOLTAGE max	2 V	PublishedColumn1
GRID-No. (SCREEN) SUPPLY VOLTAGE max	300 V	PublishedColumn2
Positive bias value max	0 V	—
PLATE DISSIPATION max	2 W	—
For grid-No. voltages up to	2 V	PublishedColumn1
For grid-No. voltages up to	150 V	PublishedColumn2
and	300 V	—
Heater negative with respect to cathode. max	90 V	—
Heater positive with respect to cathode. max	90 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to plate max. max	0.03 pF	PublishedColumn1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to plate max. max	0.02 pF	PublishedColumn2
and heater	6.5 pF	PublishedColumn1
and heater	6.6 pF	PublishedColumn2
and heater	1.8 pF	PublishedColumn1
and heater	2.6 pF	PublishedColumn2
and grid No	2.5 pF	PublishedColumn1
shield, and heater	3.9 pF	PublishedColumn1
shield, and heater	4 pF	PublishedColumn2
shield, and heater .G	3 pF	PublishedColumn1
shield, and heater .G	4.3 pF	PublishedColumn2

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	125 V	PublishedColumn1
Plate Voltage	250 V	PublishedColumn2
Grid-No. Voltage	125 V	PublishedColumn1



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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
rf or if amplifier at frequencies up to	400 MHz	Published in approved 6CE5 target datasheet entry; Section1
Heater Voltage (ac/dc) 3.15	6.3 V	Published in approved 6CE5 target datasheet entry; Section1
Heater Current 0.6	300 mA	Published in approved 6CE5 target datasheet entry; Section1
Heater Warm-up Time (Average)	11 seconds	Published in approved 6CE5 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.1 (Control-Grid) Voltage, Positive-bias value. 0.006 0	0 V	Published in approved 6CE5 target datasheet entry; Section1
For grid-No.2 voltages up to	150 V	Published in approved 6CE5 target datasheet entry; Section1
For grid-No.2 voltages between 160 and	300 V	Published in approved 6CE5 target datasheet entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Internal Shield	6.5 pF	Published in approved 6CE5 target datasheet entry; Section1
Shield	1.8 pF	Published in approved 6CE5 target datasheet entry; Section1
Grid No.1 to Plate and Grid No.2	2.5 pF	Published in approved 6CE5 target datasheet entry; Section1
Grid No.1 to Cathode, Heater, Grid No.3, and Internal Shield	3.9 pF	Published in approved 6CE5 target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode-Bias Resistor 820 180 100	180 Ω	Published in approved 6CE5 target datasheet entry; Section1
Plate Resistance (Appro*.) 0.009 0.6 0.5	0.8 MΩ	Published in approved 6CE5 target datasheet entry; Section1
Transconductance 4400 4900 6100	6700 μS	Published in approved 6CE5 target datasheet entry; Section1
Plate Current 8 6 4.7 8	7.6 mA	Published in approved 6CE5 target datasheet entry; Section1
Grid-No.2 Current – – 1.4 2.4	2.1 mA	Published in approved 6CE5 target datasheet entry; Section1

TUBE TINKER

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