

3BC5

1 SECTION
CONSTRUCTION
PENTODE

Voltage Pentode - Sharp Cutoff (single) electronic tube

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

GENERAL CHARACTERISTICS

BASE DESIGNATION	7BD	BASE PINS	7
NOMINAL HEATER	3.15 V / 600 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7BD - 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
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
PIN7 – K	A	K – Cathode	CONNECTED

SECTION RATINGS

SECTION 1 Pentode	
PLATE RESISTANCE	600000 Ω
TRANSCONDUCTANCE	0.0057 S
AMPLIFICATION FACTOR	42
MAXIMUM PLATE VOLTAGE	320 V
MAXIMUM SCREEN VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	2.3 W
MAXIMUM SCREEN DISSIPATION	0.55 W
MAXIMUM CATHODE CURRENT	40 mA
WARM-UP TIME	11 s
<i>Published ratings/characteristics promoted where semantically applicable; supplemental values retained in parameter table.</i>	

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



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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6100 μ S	PentodeConnection;PlateVoltage=125V
Amplification Factor	42	TriodeConnection



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 OPERATING CONDITIONS

[SOURCE PDF](#)

1965 Westinghouse Data Book

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

1965 WESTINGHOUSE DATA BOOK

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	3.15 V	—
Heater Current	600 mA	—
ControlledWarmupHeater	1 boolean	—
Heater Warmup Time	11 s	—
Transconductance	6100 uS	PentodeConnection
Grid To Plate Capacitance	0.02 pF	—
Input Capacitance	7.5 pF	—
Output Capacitance	2.6 pF	—
Plate Resistance	9000 ohm	TriodeConnection
Application	Video/output pentode; triode connection also specified	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	180 V	PentodeConnection
Screen Voltage	120 V	PentodeConnection
Grid Voltage	-2.5 V	PentodeConnection
Plate Current	8 mA	PentodeConnection
Screen Current	2.4 mA	PentodeConnection
Plate Voltage	250 V	TriodeConnection



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1966 Tung Sol Electronic Tubes 1 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 1 OF 4

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	3.15 V	Published heater rating
Heater current	600 mA	Published heater rating

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	330 V	PentodeConnection
Maximum screen supply voltage	330 V	PentodeConnection
Maximum plate dissipation	2.3 W	PentodeConnection



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
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