

ELECTRONIC TUBE REFERENCE

3EH7

Voltage - Pentode Remote Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Semi-remote-cutoff pentode designed as an IF amplifier in color and black-and-white television receivers. Its controlled transconductance supports AGC operation in wideband television intermediate-frequency stages.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9AQ	BASE PINS	9
NOMINAL HEATER	3.15 V / 600 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

9AQ - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – K	A	K – Cathode	CONNECTED
PIN2 – G1	A	G1 – Control Grid	CONNECTED
PIN3 – K	A	K – Cathode	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – H	–	H – Heater	CONNECTED
PIN6 – IS	A	IS – Internal Screen	CONNECTED
PIN7 – P	A	P – Plate (Anode)	CONNECTED
PIN8 – G2	A	G2 – Screen Grid	CONNECTED
PIN9 – G3	A	G3 – Suppressor Grid	CONNECTED

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	500000 Ω
TRANSCONDUCTANCE	0.0125 S
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM SCREEN DISSIPATION	0.65 W
MAXIMUM CATHODE CURRENT	20 mA
MAXIMUM HEATER-CATHODE VOLTAGE	150 V
Promoted from published ratings/characteristics where directly applicable; additional published values retained in TUBE_SECTION_PARAMETER.	

Semiremote-cutoff pentode used as an IF-amplifier tube in color and black-and-white television receivers.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1953 Amperex

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

1953 AMPEREX

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage cut-off condition	550 V	—
Screen voltage cut-off condition	550 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input resistance at 40 Mc/s	10000 ohm	—



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

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
INPUT: G4 T0 (HtG2tGatkt1s)	9.5 PF	Published datasheet value
OUTPUT: P T0 (HtG2tGeatktis)	2.8 PF	Published datasheet value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE VOLTAGE	250 VOLTS	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
CATHODE CURRENT	20 MA	Published datasheet value
PLATE VOLTAGE 200	200 VOLTS	Published datasheet value


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Amperex Condensed

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

1963 AMPEREX CONDENSED

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	IFAmplifier
Screen voltage	90 V	IFAmplifier
Control-grid voltage	-2 V	IFAmplifier
Plate current	12 mA	IFAmplifier
Screen current	4.5 mA	IFAmplifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	500000 Ω	Section1
Transconductance	12500 μS	Section1


SOURCE DATA APPENDIX

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	IFAmplifier
Screen supply voltage	90 V	IFAmplifier
Grid-1 voltage	-2 V	IFAmplifier
Plate current	12 mA	IFAmplifier
Screen current	4.5 mA	IFAmplifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	12500 μS	Section1
Plate resistance	0.5 M Ω	Section1
Grid-1 impedance at 40 MHz	13 k Ω	Section1
Cutoff transconductance at -6.5 V	1250 μS	Section1
Cutoff transconductance at -9.5 V	725 μS	Section1
Cutoff transconductance at -19.5 V	125 μS	Section1
Heater warm-up time	12 s	Section1



SOURCE OPERATING CONDITIONS

1967 Mullard Receiving and Amplifying Valves

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

1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
I. 11.6 11.8 11 .7	11.4 mA	Published in approved EF183 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ig2 4.3 4.4 4.4	4.3 mA	Published in approved EF183 target datasheet entry; Section1
gm 12 .3 12.4 12 .2	12 mA	Published in approved EF183 target datasheet entry; Section1
Itotal 16 27 24	21 mA	Published in approved EF183 target datasheet entry; Section1
I. 11.8 11.9 12	11.6 mA	Published in approved EF183 target datasheet entry; Section1
Ig2 4.4 4.5 4.5	4.4 mA	Published in approved EF183 target datasheet entry; Section1
gm 12.3 12.5 12.5	15.5 mA	Published in approved EF183 target datasheet entry; Section1
ltotal 19.7 18 .5 14.7	16 mA	Published in approved EF183 target datasheet entry; Section1
la 11.7 12 11.8	11.4 mA	Published in approved EF183 target datasheet entry; Section1
Ig2 4.3 4.5 4.4	4.3 mA	Published in approved EF183 target datasheet entry; Section1
gm 12.4 13 12.3	12 mA	Published in approved EF183 target datasheet entry; Section1
Itotal 16 27 24	21 mA	Published in approved EF183 target datasheet entry; Section1
la 11.8 12	12 mA	Published in approved EF183 target datasheet entry; Section1
Ig2 4.4 4.5	4.5 mA	Published in approved EF183 target datasheet entry; Section1
gm 12 .4 12 .5 12	5 mA	Published in approved EF183 target datasheet entry; Section1
Ito'al 19.7 18.5	17.5 mA	Published in approved EF183 target datasheet entry; Section1
Pg2 max	650 mW	Published in approved EF183 target datasheet entry; Section1
Ik max	20 mA	Published in approved EF183 target datasheet entry; Section1
T bulb max	180 °C	Published in approved EF183 target datasheet entry; Section1



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 (ac/dc) 3.4 4.4	6.3 V	Published in approved XF183 target datasheet entry; Section1
Heater Current 0.6 0.45	300 mA	Published in approved XF183 target datasheet entry; Section1
Plate Supply Voltage	550 V	Published in approved XF183 target datasheet entry; Section1
Plate Voltage	250 V	Published in approved XF183 target datasheet entry; Section1
Grid-No.3 (Suppressor-Grid) Voltage, Positive value	0 V	Published in approved XF183 target datasheet entry; Section1
Grid-No.2 (Screen-Grid) Supply Voltage	550 V	Published in approved XF183 target datasheet entry; Section1
Grid-No.2 Voltage	250 V	Published in approved XF183 target datasheet entry; Section1
Cathode Current	20 mA	Published in approved XF183 target datasheet entry; Section1
Plate Dissipation	2.5 W	Published in approved XF183 target datasheet entry; Section1
Grid-No.2 Input	0.65 W	Published in approved XF183 target datasheet entry; Section1
Plate Voltage	200 V	Published in approved XF183 target datasheet entry; Section1
Grid-No.2 Voltage	90 V	Published in approved XF183 target datasheet entry; Section1
Plate Voltage 200 200 200	200 V	Published in approved XF183 target datasheet entry; Section1
Grid-No.2 Supply Voltage 200 200 200	200 V	Published in approved XF183 target datasheet entry; Section1
Grid-No.2 Series Resistor 22000 22000 22000	22000 Ω	Published in approved XF183 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance 125 625 1250	12500 μS	Published in approved XF183 target datasheet entry; Section1
cross-modulation factor of 0.01 450 160	100 mV	Published in approved XF183 target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No. 1 Voltage	-2 V	Published in approved XF183 target datasheet entry; Section1
Plate Resistance (Approx.)	0.5 MΩ	Published in approved XF183 target datasheet entry; Section1
Transconductance	12500 μS	Published in approved XF183 target datasheet entry; Section1
Plate Current	12 mA	Published in approved XF183 target datasheet entry; Section1
Grid-No.2 Current	4.5 mA	Published in approved XF183 target datasheet entry; Section1

TUBE TINKER

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