

ELECTRONIC TUBE REFERENCE

6EQ7

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

DIODE-PENTODE

Diode-pentode combination integrating signal rectification with voltage amplification. The pentode supplies useful receiver gain while the diode provides a complementary detector or control-voltage function.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9LQ	BASE PINS	9
NOMINAL HEATER	6.3 V / 450 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

9LQ - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Diode	
MAXIMUM CATHODE CURRENT	1 mA
MAXIMUM HEATER-CATHODE VOLTAGE	200 V
WARM-UP TIME	11 s
<i>Published promoted fields populated from the printed semantic headings.</i>	

SECTION2 Pentode	
PLATE RESISTANCE	500000 Ω
TRANSCONDUCTANCE	0.0022 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	150 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM SCREEN DISSIPATION	0.5 W
MAXIMUM GRID DISSIPATION	0.2 W
MAXIMUM HEATER-CATHODE VOLTAGE	200 V
WARM-UP TIME	11 s
<i>Published promoted fields populated from the printed semantic headings.</i>	

Diode sharp-cutoff pentode with separate cathodes, intended for combined diode and pentode service.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1950 Sylvania

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

1950 SYLVANIA

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (±10%)..... 20 12.6 6.3 Volts	6.3 V	Heater Voltage (±10%)..... 20 12.6 6.3 Volts
Heater Current. 100 150 300 Ma	300 mA	Heater Current. 100 150 300 Ma
Output: p to (h+Pk,g3,1.8.4g2). 5.0 uuf	5 pF	Output: p to (h+Pk,g3,1.8.4g2). 5.0 uuf
Plate Voltage. 100 Volts	100 V	Plate Voltage. 100 Volts
Grid No.2 Voltage. 100 Volts	100 V	Grid No.2 Voltage. 100 Volts
Grid No.1 Voltage!	1 V	Grid No.1 Voltage!
Plate Current. i 9.0 Ma	9 mA	Plate Current. i 9.0 Ma
Grid No. 2 Current., 3.5 Ma	3.5 mA	Grid No. 2 Current. , 3.5 Ma
Transconductance. it 3800 umhos	3800 umhos	Transconductance. it 3800 umhos
Plate Resistance (approx.)..... 250,000 Ohms	250 Ohms	Plate Resistance (approx.)..... 250,000 Ohms
Average Diode Current with 10 Volts	10 V	Average Diode Current with 10 Volts

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage. i, 300 Volts Max.	300 V	Plate Voltage. i, 300 Volts Max.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No. 3 Voltage (Positive or Negative). 300 Volts Max.	300 V	Grid No. 3 Voltage (Positive or Negative). 300 Volts Max.
Grid No. 2 Supply Voltage. 300 Volts Max.	300 V	Grid No. 2 Supply Voltage. 300 Volts Max.
Grid No. 2 Voltage. c. . . , See 6AM8 Rating Chart	2 V	Grid No. 2 Voltage. c. . . , See 6AM8 Rating Chart
Positive Grid No. 1 Voltage. 0 Volts Max.	0 V	Positive Grid No. 1 Voltage. 0 Volts Max.
Negative Grid No. 1 Voltage. 50 Volts Max.	50 V	Negative Grid No. 1 Voltage. 50 Volts Max.
Plate Dissipation. 3.0 Watts Max.	3 W	Plate Dissipation. 3.0 Watts Max.
Diode Plate Current. 3.0 Ma Max.	3 mA	Diode Plate Current. 3.0 Ma Max.



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 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode Transconductance	2200 μS	Section2



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 · Diode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	10 V	DiodeUnit
Plate current	2 mA	DiodeUnit

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate current	1 mA	DiodeUnit

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA1;PentodeUnit
Grid 2 voltage	100 V	ClassA1;PentodeUnit
Grid 1 resistor, bypassed	2.2 Mohm	ClassA1;PentodeUnit
Plate current	9 mA	ClassA1;PentodeUnit
Grid 2 current	3.5 mA	ClassA1;PentodeUnit

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid 1 voltage for $g_m=40 \text{ uS}$	-20 V	PentodeUnit



1971 RCA HB3 Binder 4 of 7

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 · Diode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC) – published value 1	6.3 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Voltage (AC or DC) – published value 2	10 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Current at 6.3 volts – published value 1	6.3 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Current at 6.3 volts – published value 2	0.3 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
and heater	5.5	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
and heater	5	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Plate Voltage	100 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.2 Voltage	100 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.1 Supply Voltage	0 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid-No.1 Resistor (Bypassed)	2.2 Mohm	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Plate Resistance (Approx)	0.25 Mohm	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Transconductance	3800	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Plate Current	9 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.2 Current	3.5 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
transconductance (μmhos) = 40 – published value 1	40 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
transconductance (μmhos) = 40 – published value 2	-20 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 3 –Cathode – published value 1	3	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 3 –Cathode – published value 2	8	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 4 -Heater – published value 1	4	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 4 -Heater – published value 2	9	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
pin 5 -Heater	5	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
For grid-No.2 voltages between 150	150 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
and 300 volts	300 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Plate Current for plate volts - 10 – published value 1	10 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Plate Current for plate volts - 10 – published value 2	2 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID NQ 3 AND INTERNAL SHIELD	3	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID–Ns2 VOLTS=100	100 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE VOLTS=100	100 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-Nsp VOLTS=100	100 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to plate	0.002 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
PLATE VOLTAGE	300 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE	300 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Positive-bias value	0 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Negative-bias value	50 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-No.3 INPUT – published value 1	0 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
GRID-No.3 INPUT – published value 2	2 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
PLATE DISSIPATION	3 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater negative with respect to cathode	200 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater positive with respect to cathode	200 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
PLATE CURRENT	1 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA
Maximum plate voltage	330 V	—
Maximum screen-grid voltage	330 V	—
Pentode grid No.1 to diode plate	0.0015 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	250000 ohm	ClassA
Transconductance	3800 uS	ClassA
Pentode plate to diode plate	0.095	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

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