

ELECTRONIC TUBE REFERENCE

6BM8

Power - TV Vertical Output electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

High-mu triode/power-pentode combination for compact audio amplification and television vertical-output circuitry.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9EX	BASE PINS	9
NOMINAL HEATER	6.3 V / 780 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

9EX - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	20000 Ω
TRANSCONDUCTANCE	0.0025 S
AMPLIFICATION FACTOR	70
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	1 W
<i>Fixed ratings unavailable because the supplied source explicitly identifies missing pages.</i>	

SECTION2 Pentode	
TRANSCONDUCTANCE	0.0064 S
MAXIMUM PLATE VOLTAGE	600 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	7 W
MAXIMUM SCREEN DISSIPATION	1.8 W
MAXIMUM CATHODE CURRENT	50 mA
<i>Fixed ratings unavailable because the supplied source explicitly identifies missing pages; surviving pages show pentode curves and audio-output application.</i>	

High-mu triode plus power pentode used in television vertical circuits and as an audio-frequency output tube.



SOURCE OPERATING CONDITIONS

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1961 Tung Sol

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1961 TUNG SOL

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PeakAnodeCurrentDesignPoint	80 mA	VerticalOutput;PlateVoltage=50V;ScreenVoltage=170V

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
AudioOutputApplication	Transformerless audio output	Surviving circuit page



SOURCE OPERATING CONDITIONS

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1963 Amperex Condensed

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1963 AMPEREX CONDENSED

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	780 mA	Published heater rating
Triode amplification factor	70	TriodeSection VoltageAmplifier
Triode plate resistance	28000 ohm	TriodeSection VoltageAmplifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate voltage	100 V	TriodeSection VoltageAmplifier

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode grid voltage	0 V	TriodeSection VoltageAmplifier
Triode plate current	3.5 mA	TriodeSection VoltageAmplifier

1963 AMPEREX CONDENSED
Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode plate voltage	170 V	PentodeSection PowerOutput
Pentode screen voltage	115 V	PentodeSection PowerOutput
Pentode plate current	41 mA	PentodeSection PowerOutput
Pentode screen current	9 mA	PentodeSection PowerOutput
Pentode power output	7.5 W	PentodeSection PowerOutput

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode transconductance	7200 μ S	PentodeSection PowerOutput



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1971 RCA HB3 Binder 4 of 7

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1971 RCA HB3 BINDER 4 OF 7
Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC) – published value 1	6.3 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Voltage (AC or DC) – published value 2	0.6 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Current at heater volts = 6.3 – published value 1	6.3 V	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Current at heater volts = 6.3 – published value 2	0.78 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Peak heater-cathode voltage	100 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid to plate	4 pF	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 1 –Triode Grid	1	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 4 –Heater	4	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 5 –Heater	5	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 9 –Triode Plate	9	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 1	100 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 2	200 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Voltage	200 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.1 Voltage – published value 1	0 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.1 Voltage – published value 2	-16 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.1 Voltage (RMS)	6.6 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Resistance (Approx.)	20000 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance – published value 1	2500	Published datasheet value; multiple values represent separate source-table limits or conditions.
Transconductance – published value 2	6400	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Current – published value 1	3.5 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Current – published value 2	35 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Signal Grid-No.2 Current	7 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Load Resistance	5600 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Supply Voltage – published value 1	550 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Supply Voltage – published value 2	900 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 1	300 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 2	600 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Supply Voltage	550 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Voltage	300 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.2 Input	1.8 W	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Dissipation	1 W	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Average Cathode Current – published value 1	15 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Average Cathode Current – published value 2	50 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
For fixed-bias operation – published value 1	1 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
For fixed-bias operation – published value 2	1 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
For cathode-bias operation – published value 1	2 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
For cathode-bias operation – published value 2	2 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Between heater and cathode – published value 1	0.02 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Between heater and cathode – published value 2	0.02 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to heater	0.1 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid No.1 to plate	0.3 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid-No.1 to heater	0.3 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Max.-Signal Power Output	3.5 W	Published datasheet value; multiple values represent separate source-table limits or conditions.
At plate voltage less than 250 volts, maximum plate dissipation is 7 watts	250 V	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
at plate voltage greater to an 250 volts, maximum plate dissipation is 5 watts – published value 1	250 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
at plate voltage greater to an 250 volts, maximum plate dissipation is 5 watts – published value 2	5 V	Published datasheet value; multiple values represent separate source-table limits or conditions.

1971 RCA HB3 BINDER 4 OF 7

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate to pentode grid No 1 – published value 1	1 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Triode plate to pentode grid No 1 – published value 2	0.02 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Triode grid to pentode plate	0.02 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Triode grid to pentode grid No.1	0.025 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Triode plate to pentode plate	0.25 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pin 3 –Pentode Grid No.1	3	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 6 –Pentode Plate	6	Published datasheet value; multiple values represent separate source-table limits or conditions.



1975 RCA RC30

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1975 RCA RC30
Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Resistance at frequency of	50 MHz	Published in approved ECL82 target datasheet entry; Section1
Equivalent Noise Resistance	1500 Ω	Published in approved ECL82 target datasheet entry; Section1
For fixed-bias operation 0.5	0.5 MΩ	Published in approved ECL82 target datasheet entry; Section1
For cathode-bias operation 0.5	1 MΩ	Published in approved ECL82 target datasheet entry; Section1
Heater Voltage 6.3	50 V	Published in approved ECL82 target datasheet entry; Section1
Heater Current 0.78	100 mA	Published in approved ECL82 target datasheet entry; Section1
Plate Supply Voltage 550	900 V	Published in approved ECL82 target datasheet entry; Section1
Plate Voltage 300	600 V	Published in approved ECL82 target datasheet entry; Section1
Grid-No.2 Supply Voltage	550 V	Published in approved ECL82 target datasheet entry; Section1
Plate Dissipation 1	7 W	Published in approved ECL82 target datasheet entry; Section1
Grid-No.2 Input	1.8 W	Published in approved ECL82 target datasheet entry; Section1
Plate Voltage 100	200 V	Published in approved ECL82 target datasheet entry; Section1
For fixed-bias operation I	1 MΩ	Published in approved ECL82 target datasheet entry; Section1
For cathode-bias operation 2	2 MΩ	Published in approved ECL82 target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance (Approx.)	0.02 MΩ	Published in approved ECL82 target datasheet entry; Section1
Transconductance 2500	6400 μS	Published in approved ECL82 target datasheet entry; Section1
Plate Current 3.5	35 mA	Published in approved ECL82 target datasheet entry; Section1
Grid-No.2 Current	7 mA	Published in approved ECL82 target datasheet entry; Section1

1975 RCA RC30

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Resistance at frequency of	50 MHz	Published in approved ECL82 target datasheet entry; Section2
Equivalent Noise Resistance	1500 Ω	Published in approved ECL82 target datasheet entry; Section2
For fixed-bias operation 0.5	0.5 MΩ	Published in approved ECL82 target datasheet entry; Section2
For cathode-bias operation 0.5	1 MΩ	Published in approved ECL82 target datasheet entry; Section2
Heater Voltage 6.3	50 V	Published in approved ECL82 target datasheet entry; Section2
Heater Current 0.78	100 mA	Published in approved ECL82 target datasheet entry; Section2
Plate Supply Voltage 550	900 V	Published in approved ECL82 target datasheet entry; Section2
Plate Voltage 300	600 V	Published in approved ECL82 target datasheet entry; Section2
Grid-No.2 Supply Voltage	550 V	Published in approved ECL82 target datasheet entry; Section2
Plate Dissipation 1	7 W	Published in approved ECL82 target datasheet entry; Section2
Grid-No.2 Input	1.8 W	Published in approved ECL82 target datasheet entry; Section2
Plate Voltage 100	200 V	Published in approved ECL82 target datasheet entry; Section2
For fixed-bias operation I	1 MΩ	Published in approved ECL82 target datasheet entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
For cathode-bias operation 2	2 MΩ	Published in approved ECL82 target datasheet entry; Section2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance (Approx.)	0.02 MΩ	Published in approved ECL82 target datasheet entry; Section2
Transconductance 2500	6400 μS	Published in approved ECL82 target datasheet entry; Section2
Plate Current 3.5	35 mA	Published in approved ECL82 target datasheet entry; Section2
Grid-No.2 Current	7 mA	Published in approved ECL82 target datasheet entry; Section2


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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199X Svetlana

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199X SVETLANA

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	780 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Plate Dissipation	1 W	—

199X SVETLANA

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	780 mA	Nominal
Maximum Plate Voltage	600 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	7 W	—

TUBE TINKER

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