

ELECTRONIC TUBE REFERENCE

6EM5

Power - TV Vertical Output electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
BEAMPOWER

High-dissipation beam-power tube designed for vertical-deflection amplifier service in 110-degree television receivers, with substantial pulse-current capability.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9HN	BASE PINS	9
NOMINAL HEATER	6.3 V / 800 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

9HN - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Beam Power	
PLATE RESISTANCE	50000 Ω
TRANSCONDUCTANCE	0.0051 S
AMPLIFICATION FACTOR	8.7
MAXIMUM PLATE VOLTAGE	315 V
MAXIMUM SCREEN VOLTAGE	285 V
MAXIMUM PLATE DISSIPATION	10 W
MAXIMUM SCREEN DISSIPATION	1.5 W
MAXIMUM CATHODE CURRENT	60 mA
MAXIMUM HEATER-CATHODE VOLTAGE	200 V
WARM-UP TIME	11 s
<i>Published promoted fields populated from the printed semantic headings.</i>	

Beam power tube for vertical-deflection amplifier service in 110-degree television receivers. Explicit heater variant/co-designation of 8EM5 in the approved source.



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 1 · Beam Power

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage. cooiiiiin i nnnnnn 6.3 8.4 Volts	8.4 V	Heater Voltage. cooiiiiin i nnnnnn 6.3 8.4 Volts
Heater Current. ccooiinininvnenns 800 600 Ma	600 mA	Heater Current. ccooiinininvnenns 800 600 Ma
Output: pto(h+k+4+024+g3). ..o, e 5.1 puf	5.1 pF	Output: pto(h+k+4+024+g3). ..o, e 5.1 puf
Plate Voltage. it 315 Volts	315 V	Plate Voltage. it 315 Volts
Grid No. 2 Voltage. ittt inirnennnanns 285 Volts	285 V	Grid No. 2 Voltage. ittt inirnennnanns 285 Volts
Peak Negative Pulse Grid Voltage..... 250 Volts	250 V	Peak Negative Pulse Grid Voltage..... 250 Volts
Plate Dissipation@. it 10.0 Watts	10 W	Plate Dissipation@. it 10.0 Watts
Grid No. 2 Dissipation3. ittt 1.5 Watts	1.5 W	Grid No. 2 Dissipation3. ittt 1.5 Watts
Average Cathode Current. 60 Ma	60 mA	Average Cathode Current. 60 Ma
Peak Cathode Current..... .coiiiiiiiiiiinnn, 210 Ma	210 mA	Peak Cathode Current..... .coiiiiiiiiiiinnn, 210 Ma
Plate Voltage. . . . , 250 Volts	250 V	Plate Voltage. . . . , 250 Volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No. 2 Voltage. ooiiniin it iianenenn. 250 Volts	250 V	Grid No. 2 Voltage. . . .ooiiniin it iianenenn. 250 Volts
Plate Current. . . . i i i i 35 Ma	35 mA	Plate Current. . . . i i i i 35 Ma
Grid No. 2 Current. it et ineneanen 3.0 Ma	3 mA	Grid No. 2 Current. it et ineneanen 3.0 Ma



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 1 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PeakPositivePlateVoltage	6000 V	HorizontalDeflection

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Warmup Time	11 s	—



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SOURCE OPERATING CONDITIONS

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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 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak positive pulse plate voltage	2200 V	VerticalDeflection
Peak cathode current	210 mA	VerticalDeflection
Plate voltage	250 V	ClassA1;VerticalDeflection
Grid 2 voltage	250 V	ClassA1;VerticalDeflection
Plate current	40 mA	ClassA1;VerticalDeflection
Grid 2 current	3 mA	ClassA1;VerticalDeflection



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	—
Heater current	800 mA	—
Maximum plate voltage	315 V	VerticalDeflection
Peak positive pulse plate voltage	2200 V	VerticalDeflection
Maximum screen voltage	285 V	VerticalDeflection
Peak cathode current	210 mA	VerticalDeflection
Average cathode current	60 mA	VerticalDeflection
Screen input	1.5 W	—
Plate dissipation	10 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen voltage	250 V	ClassA
Grid voltage	-18 V	ClassA
Plate resistance	50000 ohm	ClassA
Transconductance	5100 uS	ClassA
Plate current	40 mA	ClassA
Screen current	3 mA	ClassA
Grid-to-screen mu factor	8.7	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.7 pF	—
Input capacitance	10 pF	—
Output capacitance	5.1 pF	—



SOURCE DATA APPENDIX

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 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak value -	200 V	Other;PublishedValue1
Peak value -	200 V	Other;PublishedValue2
Average value	100 V	Other;PublishedValue1
Average value	100 V	Other;PublishedValue2
Peak Positive-Pulse Plate Voltage# (Absolute Maximum)	220 V	MaximumRating;PublishedValue1
Peak Positive-Pulse Plate Voltage# (Absolute Maximum)	4 V	MaximumRating;PublishedValue2
Grid-No	2 V	MaximumRating;PublishedValue1
Grid-No	285 V	MaximumRating;PublishedValue2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Negative-Pulse Grid-No.1 (Control-Grid) Voltage	250 V	MaximumRating
Peak Cathode Current	210 mA	MaximumRating
Plate Dissipation	10 W	MaximumRating
Grid-No	2 W	MaximumRating;PublishedValue1
Grid-No	1.5 W	MaximumRating;PublishedValue2
Grid-No.1-Circuit Resistance	2.2 megohm	MaximumCircuitValue
Maximum Plate Voltage	315 V	Section1
Maximum Screen Voltage	285 V	Section1
Maximum Plate Dissipation	10 W	Section1
Maximum Screen Dissipation	1.5 W	Section1
Maximum Cathode Current	210 mA	Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to Plate	0.7 pF	Capacitance
Grid No.1 to Cathode, Heater, Grid No	2 pF	Capacitance;PublishedValue1
Grid No.1 to Cathode, Heater, Grid No	3 pF	Capacitance;PublishedValue2
Grid No.1 to Cathode, Heater, Grid No	10 pF	Capacitance;PublishedValue3
Plate to Cathode, Heater, Grid No	2 pF	Capacitance;PublishedValue1
Plate to Cathode, Heater, Grid No	3 pF	Capacitance;PublishedValue2
Plate to Cathode, Heater, Grid No	5.1 pF	Capacitance;PublishedValue3

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	60 V	Characteristic;PublishedValue1
Plate Voltage	250 V	Characteristic;PublishedValue2
Grid-No	2 V	Characteristic;PublishedValue1
Grid-No	250 V	Characteristic;PublishedValue2
Grid-No	250 V	Characteristic;PublishedValue3

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.1 Voltage	0 V	Characteristic;PublishedValue1
Grid-No.1 Voltage	-18 V	Characteristic;PublishedValue2
Plate Resistance	0.05 megohm	Characteristic
Plate Current	180 mA	Characteristic;PublishedValue1
Plate Current	40 mA	Characteristic;PublishedValue2
Grid-No	2 mA	Characteristic;PublishedValue1
Grid-No	30 mA	Characteristic;PublishedValue2
Grid-No.1 Voltage (Approx.) for plate current of	0.2 mA	Characteristic;PublishedValue1
Grid-No.1 Voltage (Approx.) for plate current of	-37 mA	Characteristic;PublishedValue2
Plate Resistance	50000 ohm	Section1
Transconductance	5100 uS	Section1