

ELECTRONIC TUBE REFERENCE

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
BEAMPOWER

6HE5

Power - TV Vertical Output electronic tube

Duodecar beam-power pentode designed as a television vertical-deflection amplifier, providing substantial dissipation capability for wide-angle scanning service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	12EY	BASE PINS	12
NOMINAL HEATER	6.3 V / 800 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

12EY - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – Pin 1	–	H – Heater	CONNECTED • verified
PIN2 – Pin 2	A	G1 – Control Grid	CONNECTED • verified
PIN2	–	G1 – Control Grid	CONNECTED
PIN3 – Pin 3	A	G2 – Screen Grid	CONNECTED • verified
PIN3	–	G2 – Screen Grid	CONNECTED
PIN4 – Pin 4	A	BP – Beam-Forming Plate	CONNECTED • verified
PIN4 – Pin 4	A	K – Cathode	CONNECTED • verified
PIN4	–	G3 – Suppressor Grid	CONNECTED
PIN4	–	K – Cathode	CONNECTED

TERMINAL	SECTION	ELEMENT	STATUS
PIN5 – Pin 5	–	–	NC · verified
PIN6 – Pin 6	A	P – Plate (Anode)	CONNECTED · verified
PIN6	–	P – Plate (Anode)	CONNECTED
PIN7 – Pin 7	–	–	NC · verified
PIN8	–	G1 – Control Grid	CONNECTED
PIN8 – Pin 8	–	–	NC · verified
PIN9 – Pin 9	A	G1 – Control Grid	CONNECTED · verified
PIN9	–	G2 – Screen Grid	CONNECTED
PIN10 – Pin 10	A	G2 – Screen Grid	CONNECTED · verified
PIN10	–	G3 – Suppressor Grid	CONNECTED
PIN10	–	K – Cathode	CONNECTED
PIN11 – Pin 11	A	BP – Beam-Forming Plate	CONNECTED · verified
PIN11 – Pin 11	A	K – Cathode	CONNECTED · verified
PIN11	–	H – Heater	CONNECTED
PIN12 – Pin 12	–	H – Heater	CONNECTED · verified

SECTION RATINGS

SECTION1 Beam Power	
PLATE RESISTANCE	50000 Ω
TRANSCONDUCTANCE	0.0041 S
MAXIMUM PLATE VOLTAGE	350 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	15 W
MAXIMUM SCREEN DISSIPATION	2.75 W
MAXIMUM CATHODE CURRENT	75 mA
<i>Vertical-deflection service.</i>	

Duodecar type used as vertical-deflection amplifier in television receivers. Outlines section, 15D; requires duo-decar 12-contact socket. 12EY Heater Voltage (ac/dc) 6.



SOURCE OPERATING CONDITIONS

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
Plate Resistance	5000 ohm	—
Transconductance	4100 μ S	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	350 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	19 W	—
Maximum Screen Dissipation	2.75 W	—
Maximum Cathode Current	75 mA	—
Peak Positive Pulse Plate Voltage	2500 V	Vertical deflection amplifier
Plate Current	43 mA	250 V plate and screen



SOURCE OPERATING CONDITIONS

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1968 General Electric Co

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

1968 GENERAL ELECTRIC CO

Section 1 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Pulse Plate Voltage	2500 V	VerticalDeflection



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 RCA HB3 Binder 5 of 7

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

1971 RCA HB3 BINDER 5 OF 7

Section 1 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	ClassA
Plate current	43 mA	ClassA
Maximum plate voltage	350 V	—
Maximum screen-grid voltage	350 V	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	50000 ohm	ClassA
Transconductance	4100 uS	ClassA
Heater Voltage, ac or dc	6.3 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid No.1 to plate	0.54 pF	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Resistance (approx.). rp	50000	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Plate Current – published value 1	180 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Plate Current – published value 2	6 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Plate Current – published value 3	43 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Grid-No.2 Current – published value 1	20 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Grid-No.2 Current – published value 2	6 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Grid-No.2 Current – published value 3	3.5 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Heater Voltage – published value 1	6.3 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Heater Voltage – published value 2	6.3 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Plate Voltage – published value 1	60 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Plate Voltage – published value 2	250 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Grid-No.2 Voltage – published value 1	250 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Grid-No.2 Voltage – published value 2	250 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Grid-No.1 Voltage	-20 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
DC Plate Supply Voltage	350 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Peak Positive-Pulse Plate Voltage°	2500 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Grid-No.2 (Screen-Grid) Voltage	300 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Heater Voltage, ac or dc – published value 1	5.7 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Heater Voltage, ac or dc – published value 2	6.9 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid-No.2 Input	2.75	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Disaipation f	12	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
With fixed bias	1	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
With cathode bias	2.2	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
current issue of EIA Standard RS-191	191	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 1 •Heater	1	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 2 -Grid No.1	2	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 3 -Grid No.2	3	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 4 -Grid No.3, Cathode	4	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 6 - Plate	6	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 9 -Grid No.1	9	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pin 10 -Grid No.2	10	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 11 -Grid No.3, Cathode	11	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 12 -Heater	12	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.



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

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to Plate	0.49 pF	Grid No.1 to Plate 0.49 pF
Grid No.1 to Cathode, Heater. Grid No	9.5 pF	Grid No.1 to Cathode, Heater. Grid No.2, and Grid No.3 9.5 pF
Plate to Cathode, Heater, Grid No	6.5 pF	Plate to Cathode, Heater, Grid No.2, and Grid No.3 . . 6.5 pF
Grid No.1 to Plate	0.2 pF	Grid No.1 to Plate 0.2 pF
and Grid No	15 pF	and Grid No.3 15 pF

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 volts	Plate Voltage 60 250 volts
Grid-No	250 volts	Grid-No.2 (Screen-Grid) Voltage 250 250 volts
Grid-No.1 (Control-Grid) Voltage	-20 volts	Grid-No.1 (Control-Grid) Voltage 0 -20 volts
Plate Resistance (Approx.)	50000 ohms	Plate Resistance (Approx.) 50000 ohms
Transconductance	4100	Transconductance 4100 ^mhos
Plate Current	43 mA	Plate Current 180- 43 mA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No	3.5 mA	Grid-No.2 Current 20- 3.5 mA
DC Plate Voltage	350 volts	DC Plate Voltage 350 volts
Peak Positive-Pulse Plate Voltage*	2500 volts	Peak Positive-Pulse Plate Voltage* 2500 volts
Grid-No	300 volts	Grid-No.2 Voltage 300 volts
Peak Cathode Current	260 mA	Peak Cathode Current 260 mA
Average Cathode Current	75 mA	Average Cathode Current 75 mA
Plate Voltage	150 volts	Plate Voltage 150 60 150 volts
Grid-No	150 volts	Grid-No.2 (Screen-Grid) Voltage - 150 150 volts
Grid-No.1 (Control-Grid) Voltage	-22.5 volts	Grid-No.1 (Control-Grid) Voltage -22.5 0 -22.5 volts
Mu-Factor, Grid No	4.4	Mu-Factor, Grid No.2 to Grid No.1 4.4
Plate Resistance (Approx.)	15000 ohms	Plate Resistance (Approx.) - 15000 ohms
Plate Current	70 mA	Plate Current 390" 70 mA
Grid-No	2	Grid-No.2 Current -
Grid-No.1 Voltage for plate current of	-42 mA	Grid-No.1 Voltage for plate current of 1 mA -42 volts
DC Plate Supply Voltage	770 volts	DC Plate Supply Voltage 770 volts
Peak Positive-Pulse Plate Voltage#	6500 volts	Peak Positive-Pulse Plate Voltage# 6500 volts

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipationf	15 watts	Plate Dissipationf 15 watts
Grid-No	2.75 watts	Grid-No.2 Inputt 2.75 watts
Heater Warm-up Time (Average)	11 seconds	Heater Warm-up Time (Average) 11 11 seconds
Grid No	6	Grid No.3 6 pi
Grid No	3	Grid No.3 (Suppressor Grid) Connected to cathode at socket
* Grid No	2	* Grid No.2 connected to plate.

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes, and their source documents.

