

BEAM POWER TUBE

21HB5A

Duodecar type used as horizontal-deflection amplifier in television receivers. Outlines section, 15B; requires duodecar 12-contact socket. For maximum ratings, refer to type 6HB5. Heater: volts (ac/dc), 21; amperes, 0.45; warm-up time (average), 11 seconds; maximum heater-cathode volts, ± 200 peak, 100 average.

Class A₁ Amplifier

CHARACTERISTICS

	Pentode Connection			Triode* Connection	
Plate Voltage	5000	50	130	130	volts
Grid-No.2 (Screen-Grid) Voltage	130	130	130	130	volts
Grid-No.1 (Control-Grid) Voltage	—	0	—20	—20	volts
Amplification Factor	—	—	—	4.8	
Plate Resistance (Approx.)	—	—	9900	—	ohms
Transconductance	—	—	9000	—	μ mhos
Plate Current	—	450*	46	—	mA
Grid-No.2 Current	—	29*	1.8	—	mA
Grid-No.1 Voltage (Approx.) for plate current of 1 mA	—64	—	—32	—	volts

* Grid-No.2 tied to plate

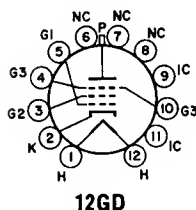
* This value can be measured by a method involving a recurrent waveform such that the maximum ratings of the tube will not be exceeded.

Refer to chart at end of section.

21HJ5

Refer to type 33JV6.

21JV6



BEAM POWER TUBE

21JZ6

Duodecar type used as horizontal-deflection amplifier in television receivers. Outlines section, 15C; requires duodecar 12-contact socket. Heater: volts (ac/dc), 21; amperes, 0.45; average warm-up time, 11 seconds; maximum heater-cathode volts, ± 200 peak, 100 average.

Class A₁ Amplifier

CHARACTERISTICS

	Triode ^A Connection		Pentode Connection		
Plate Voltage	130	5000	50	130	volts
Grid No.3 (Suppressor Grid)	—	Connected to cathode at socket			
Grid-No.2 (Screen-Grid) Voltage	—	130	130	130	volts
Grid-No.1 (Control-Grid) Voltage	—20	—	0	—20	volts
Amplification Factor	4.8	—	—	—	
Plate Resistance (Approx.)	—	—	—	9900	ohms
Transconductance	—	—	—	9000	μ mhos
Plate Current	—	—	450	46	mA
Grid-No.2 Current	—	—	29	1.8	mA
Grid-No.1 Voltage (Approx.) for plate current of 1.0 mA	—	—64	—	—32	volts

* Grid No.2 connected to plate.

Horizontal-Deflection Amplifier

For operation in a 525-line, 30-frame system

MAXIMUM RATINGS (Design-Maximum Values)

Plate Supply Voltage	770	volts
Peak Positive-Pulse Plate Voltage*	6500	volts
Peak Negative-Pulse Plate Voltage	1500	volts
DC Grid-No.3 Voltage, Positive-bias value	70	volts
Grid-No.2 Voltage	220	volts

DC Grid-No.1 Voltage, Negative-bias value	55	volts
Peak Negative-Pulse Grid-No.1 Voltage	330	volts
Peak Cathode Current	800	mA
Average Cathode Current	230	mA
Plate Dissipation*	18	watts
Grid-No.2 Input	3.5	watts
Bulb Temperature (At hottest point)	220	°C

MAXIMUM CIRCUIT VALUE

Grid-No.1-Circuit Resistance	1	megohm
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* A bias resistor or other means is required to protect the tube in absence of excitation.

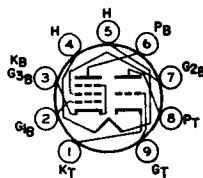
† Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).

21KA6

Refer to type 16KA6.

21LR8**HIGH-MU TRIODE—
BEAM POWER TUBE**

Novar type used in combined vertical-deflection-oscillator and vertical-deflection-amplifier applications in color and black-and-white television receivers. Outlines section, 17E; requires novar 9-contact socket. Heater: volts, 21; amperes, 0.45; average warm-up time, 11 seconds; maximum heater-cathode volts, ± 200 peak, 100 average.

**9QT****Class A₁ Amplifier**

CHARACTERISTICS	Triode Unit	Beam Power Unit	
Plate Voltage	250	45 135	120 volts
Grid-No.2 (Screen-Grid) Voltage	—	125 120	120* volts
Grid-No.1 (Control-Grid) Voltage	—4	0 —10	—10 volts
Amplification Factor	58	—	6.5
Plate Resistance (Approx.)	14000	—	14000 ohms
Transconductance	4100	—	9200 μ mbos
Plate Current	2.6	200* 51	— mA
Grid-No.2 Current	—	200* 3	— mA
Grid-No.1 Voltage:			
For plate current of 10 μ A	—6.6	—	— volts
For plate current of 100 μ A	—	—28	— volts
For plate current of 1 mA	—	—24	— volts

* Triode connection, Grid No.2 connected to plate at socket.

* This value can be measured by a method involving a recurrent waveform such that the maximum ratings of the tube will not be exceeded.

Vertical-Deflection Oscillator and Amplifier

For operation in a 525-line, 30-frame system

MAXIMUM RATINGS (Design-Maximum Values)	Triode Unit Oscillator	Beam Power Unit Amplifier	
Plate Voltage	400	400	volts
Grid-No.2 Voltage	—	300	volts
Peak Positive-Pulse Plate Voltage†	—	2500	volts
Peak Negative-Pulse Grid-No.1 Voltage	400	250	volts
Peak Cathode Current	105	260	mA
Average Cathode Current	30	75	mA
Peak Power Output	2.5	—	watts
Plate Dissipation‡	2.5	14	watts
Grid-No.2 Input‡	—	2.75	watts
Bulb Temperature	—	210	°C
MAXIMUM CIRCUIT VALUES			
Grid-No.1-Circuit Resistance:			
For fixed-bias operation	—	1	megohm
For cathode-bias operation	2.2	2.2	megohms

† Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).

‡ A bias resistor or other means is required to protect the tube in absence of excitation.

21LU8

Refer to type 6LU8.

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Refer to chart at end of section.

22BH3

Refer to chart at end of section.