

Beam Power Unit as Class A₁ Amplifier

CHARACTERISTICS

	Pentode Connection			Triode† Connection	
Plate Voltage	3500	60	130	130	volts
Grid-No.2 (Screen-Grid) Voltage	130	130	130	130	volts
Grid-No.1 (Control-Grid) Voltage	—	0	-22.5	-22.5	volts
Amplification Factor	—	—	—	4	
Plate Resistance (Approx.)	—	—	10000	—	ohms
Transconductance	—	—	6500	—	μmhos
Plate Current	—	320	48	—	mA
Grid-No.2 Current	—	22	2.9	—	mA
Grid-No.1 Voltage (Approx.) for plate current of 1 mA	-60	—	-40	—	volts

† Grid No.2 tied to plate.

Beam Power Unit as Horizontal-Deflection Amplifier

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

MAXIMUM RATINGS (Design-Maximum Ratings)

Plate Voltage	400	volts
Peak Positive-Pulse Plate Voltage*	3500	volts
Peak Negative-Pulse Plate Voltage	0	volts
Grid-No.2 Voltage	150	volts
DC Grid-No.1 DC Voltage, Negative-bias value	55	volts
Peak Negative-Pulse Grid-No.1 Voltage	330	volts
Average Cathode Current	140	mA
Peak Cathode Current	490	mA
Plate Dissipation*	9	watts
Grid-No.2 Input	2.5	watts

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.

Damper Service—Diode Unit

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

MAXIMUM RATINGS (Design-Maximum Values)

Peak Inverse Plate Voltage#	2500	volts
Peak Plate Current	750	mA
Average Plate Current	125	mA
Plate Dissipation	3.5	watts
Heater-Cathode Voltage:		
Peak value	+200	-2500
Average value	+100	-400
Bulb Temperature (at hottest point)	220	°C

CHARACTERISTICS, Instantaneous Value

Tube Voltage Drop for plate current of 250 mA	21	volts
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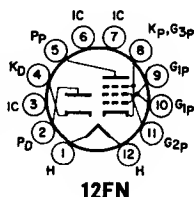
* Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).

33GY7

Refer to chart at end of section.

33GY7A DIODE—BEAM POWER TUBE

Duodecar type used as combined damper diode and horizontal-deflection amplifier in television receivers. Socket terminals 1, 3, 6 and 7 should not be used as tie points. Outlines section, 15A; requires duodecar 12-contact socket. Heater: volts (ac/dc), 33.6; amperes, 0.45; warm-up time (average), 11 seconds; maximum heater-cathode volts, ± 200 peak, 100 average.



12FN

Beam Power Unit as Class A₁ Amplifier

CHARACTERISTICS

	Pentode Connection			Triode* Connection	
Plate Voltage	5000	60	130	130	volts
Grid-No.2 (Screen-Grid) Voltage	130	130	130	130	volts
Grid-No.1 (Control-Grid) Voltage	—	0	-22.5	-22.5	volts
Amplification Factor	—	—	—	4	
Plate Resistance (Approx.)	—	—	10000	—	ohms
Transconductance	—	—	6500	—	μmhos

	Pentode Connection			Triode* Connection	
Plate Current	—	320*	48	—	mA
Grid-No.2 Current	—	22*	2.9	—	mA
Grid-No.1 Voltage (Approx.) for plate current of 1 mA	—80	—	—40	—	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.

Beam Power Unit as Horizontal-Deflection Amplifier

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

MAXIMUM RATINGS (Design-Maximum Values)

DC Plate Supply Voltage	400	volts
Peak Positive-Pulse Plate Voltage#	5000	volts
Peak Negative-Pulse Plate Voltage	0	volts
DC Grid-No.2 Voltage	150	volts
DC Grid-No.1 Voltage	—55	volts
Peak Negative-Pulse Grid-No.1 Voltage	330	volts
Peak Cathode Current	540	mA
Average Cathode Current	155	mA
Plate Dissipation†	9	watts
Grid-No.2 Input	3	watts

MAXIMUM CIRCUIT VALUE

Grid-No.1-Circuit Resistance	1	megohm
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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.

Damper Service (Diode Unit)

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

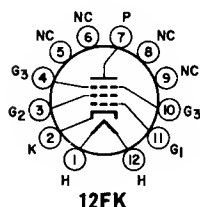
MAXIMUM RATINGS (Design-Maximum Values)

Maximum value#	Maximum value#		
Peak Inverse Plate Voltage#	4200		volts
Peak Plate Current	810		mA
Average Plate Current	135		mA
Plate Dissipation	3.8		watts
Heater-Cathode Voltage:			
Peak value	+200	—4200	volts
Average value	+100	—400	volts
Bulb Temperature (At hottest point)	200		°C

CHARACTERISTICS, Instantaneous Value

Tube Voltage Drop for plate current of 250 mA	21	volts
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Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).



BEAM POWER TUBE

33JV6
21JV6

Duodecar type used as horizontal-deflection amplifier in television receivers. Outlines section, 15B; requires duodecar 12-contact socket. Type 21JV6 is identical with type 33JV6 except for heater ratings.

	21JV6	33JV6	
Heater Voltage (ac/dc)	21	33	volts
Heater Current	0.45	0.3	ampere
Heater Warm-up Time (Average)	11	11	seconds
Heater-Cathode Voltage:			
Peak value	±200 max	±200 max	volts
Average value	100 max	100 max	volts

Class A₁ Amplifier

CHARACTERISTICS	Triode* Connection		Pentode Connection		
Plate Voltage	130	5000	60	130	volts
Grid No.3 (Suppressor Grid)		Connected to cathode at socket.			
Grid-No.2 (Screen-Grid) Voltage	130	130	130	130	volts
Grid-No.1 (Control-Grid) Voltage	—20	—	0	—20	volts
Plate Resistance (Approx.)		—	—	11000	ohms
Transconductance		—	—	9100	μmhos
Plate Current		—	410	50	mA
Grid-No.1 Current		—	24	1.75	mA