

Damper Service—Diode Unit

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

MAXIMUM RATINGS (Design-Maximum Values)

Peak Inverse Plate Voltage#	4200	volts
Peak Plate Current	1200	mA
Average Plate Current	200	mA
Heater-Cathode Voltage:		
Peak value	+200	volts
Average value	+100	volts
Bulb Temperature (at hottest point)	200	°C

CHARACTERISTICS, Instantaneous Value

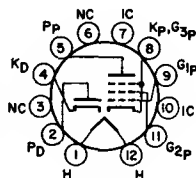
Tube Voltage Drop for plate current of 350 mA	21	volts
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Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).

38HK7

DIODE—BEAM POWER TUBE

Duodecar type used in television receiver applications. The diode unit is used for damper service and the beam power unit for horizontal-deflection amplifier service. Outlines section, 15D; requires duodecar 12-contact socket.



12FS

Heater Voltage (ac/dc)	37.8	volts
Heater Current	0.45	ampere
Heater Warm-up Time (Average)	11	seconds
Heater-Cathode Voltage:		
Peak value	±200 max	volts
Average value	100 max	volts
Direct Interelectrode Capacitances (Approx.):		
Diode Unit:		
Plate to Cathode and Heater	10	pF
Cathode to Plate and Heater	9	pF
Heater to Cathode	2	pF
Beam Power Unit:		
Grid No.1 to Plate	0.38	pF
Grid No.1 to Cathode, Heater, Grid No.2, and Grid No.3	19	pF
Plate to Cathode, Heater, Grid No.2, and Grid No.3	8	pF

Beam Power Unit as Class A₁ Amplifier

CHARACTERISTICS	Triode** Connection	Pentode Connection	
Plate Voltage	130	3500	50
Grid-No.2 (Screen-Grid) Voltage	130	130	130
Grid-No.1 (Control-Grid) Voltage	-22	—	0
Amplification Factor	4.2	—	—
Plate Resistance	—	—	6200
Transconductance	—	—	8800
Plate Current	—	—	450
Grid-No.2 Current	—	—	40
Grid-No.1 Voltage (Approx.) for plate current of 1 mA	—	-66	-39

MAXIMUM CIRCUIT VALUE

Grid-No.1-Circuit Resistance	1	megohm
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** 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 Values)

Plate Voltage	500	volts
Peak Positive-Pulse Plate Voltage	5000	volts
Peak Negative-Pulse Plate Voltage	0	volts
Grid-No.2 Voltage	150	volts
DC Grid-No.1 Voltage, Negative-bias value	55	volts
Peak Negative-Pulse Grid-No.1 Voltage	330	volts
Average Cathode Current	230	mA
Peak Cathode Current	800	mA
Plate Dissipation†	10	watts
Grid-No.2 Input	3.5	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

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MAXIMUM RATINGS (Design-Maximum Values)

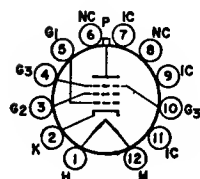
Peak Inverse Plate Voltage#	4200	volts
Peak Plate Current	1200	mA
Average Plate Current	200	mA
Heater-Cathode Voltage:		
Peak value	+200	volts
Average value	+100	volts

Bulb Temperature (At hottest point)	200	°C
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CHARACTERISTICS, Instantaneous Value

Tube Voltage Drop for plate current of 350 mA	16	volts
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Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).

Refer to chart at end of section. **39/44**Refer to chart at end of section. **40**Refer to type 6KD6. **40KD6**Refer to chart at end of section. **41**Refer to chart at end of section. **42****12GU****DUAL BEAM PENTODE****42KN6**

Duodecar type used as horizontal-deflection amplifier in color and black-and-white television receivers, with units in parallel. Outlines section, 16D; requires duodecar 12-contact socket. Heater: volts, 42; amperes, 0.45; warm-up time, 11 seconds; maximum heater-cathode volts, ± 200 peak, 100 average.

Class A₁ Amplifier

CHARACTERISTICS	Triode* Connection	Pentode Connection	
Plate Voltage	130	5500	60
Grid-No.2 (Screen-Grid) Voltage	130	125	125
Grid-No.1 (Control-Grid) Voltage	-20	—	0
Plate Resistance	—	—	4000
Transconductance	—	—	16000
Plate Current	—	—	800 ^A
Grid-No.2 Current	—	—	50 ^A
Grid-No.1 Voltage (Approx.) for plate current of 1 mA	—	—	—33
Grid-No.1 Voltage (Approx.) for plate current of 75 μ A	—	100	—
Amplification Factor	4.5	—	—

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

* Grid No.2 connected to plate.

Horizontal-Deflection Amplifier

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

MAXIMUM RATINGS (Design-Maximum Values)

DC Plate Supply Voltage	770	volts
Peak Positive-Pulse Plate Voltage#	6500	volts
Peak Negative-Pulse Plate Voltage	1500	volts
Grid-No.2 Voltage	220	volts
Peak Negative-Pulse Grid-No.1 Voltage	330	volts
Average Cathode Current	400	mA
Peak Cathode Current	1500	mA
Plate Dissipation*	30	watts
Grid-No.2 Input	5	watts
Bulb Temperature (At hottest point)	260	°C