

Direct Interelectrode Capacitances:

Grid to Plate	4.8	pF
Grid to Cathode and Heater	5	pF
Plate to Cathode and Heater	1.5	pF

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Center Values)

Plate Voltage	550	volts
Grid Voltage, Negative-bias value	50	volts
Plate Dissipation	5.5	watts

CHARACTERISTICS

Plate Voltage	150	volts
Grid Voltage	-17.5	volts
Amplification Factor	6.5	
Plate Resistance (Approx.)	1030	ohms
Transconductance	6300	μmhos
Plate Current	34	mA
Plate Current for grid voltage of -23 volts	9.6	mA
Grid Voltage (Approx.) for plate current of 200 μA	-32	volts

MAXIMUM CIRCUIT VALUES

Grid-Circuit Resistance:		
For fixed-bias operation	0.47	megohm
For cathode-bias operation	2.2	megohms

Vertical-Deflection Amplifier

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

MAXIMUM RATINGS (Design-Center Values)

DC Plate Voltage	550	volts
Peak Positive-Pulse Plate Voltage* (Absolute Maximum)	1000†	volts
Peak Negative-Pulse Grid Voltage	250	volts
Peak Cathode Current	105	mA
Average Cathode Current	30	mA
Plate Dissipation	5.5	watts

MAXIMUM CIRCUIT VALUE

Grid-Circuit Resistance, for cathode-bias operation	2.2	megohms
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* Pulse duration must not exceed 15% of a vertical scanning cycle (2.5 milliseconds).

† Under no circumstances should this absolute value be exceeded.

Refer to chart at end of section.

Refer to type 6BA6.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to type 6BE3.

Refer to type 6BE6.

Refer to chart at end of section.

Refer to type 6BF11.

Refer to chart at end of section.

12B8GT

12BA6

12BA7

12BD6

12BE3

12BE6

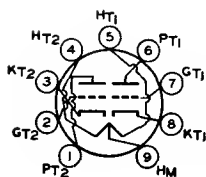
12BF6

12BF11

12BH7

MEDIUM-MU TWIN TRIODE

12BH7A



9A

Miniature type used as combined vertical-deflection amplifier and vertical oscillator, and as horizontal-deflection oscillator, in television receivers, and in phase-inverter and multivibrator circuits. Outlines section, 6E; requires miniature 9-contact socket. Each triode unit is independent of the other except for the common heater.

Heater Arrangement:	Series	Parallel	
Heater Volts (ac/dc)	12.6	6.3	volts
Heater Current	0.3	0.6	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.):	Unit No.1	Unit No.2	
Grid to Plate	2.6	2.6	pF
Grid to Cathode and Heater	3.2	3.2	pF
Plate to Cathode and Heater	0.5	0.4	pF
Plate of Unit No.1 to Plate of Unit No.2	0.8		pF

Class A₁ Amplifier (Each Unit)

MAXIMUM RATINGS (Design-Center Values)

Plate Voltage	300	volts
Grid Voltage:		
Negative-bias value	50	volts
Positive-bias value	0	volts
Cathode Current	20	mA
Plate Dissipation:		
Each Plate	3.5	watts
Both plates (Both units operating)	7	watts

CHARACTERISTICS

Plate Voltage	250	volts
Grid Voltage	-10.5	volts
Amplification Factor	16.5	
Plate Resistance (Approx.)	5300	ohms
Transconductance	3100	μ mhos
Plate Current	11.5	mA
Plate Current for grid voltage of -14 volts	4	mA
Grid Voltage (Approx.) for plate current of 50 μ A	-23	volts

MAXIMUM CIRCUIT VALUES

Grid-Circuit Resistance:		
For fixed-bias operation	0.25	megohm
For cathode-bias operation	1	megohm

Oscillator (Each Unit)

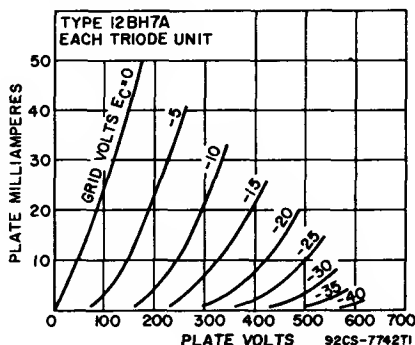
For operation in a 525-line, 30-frame system

	Vertical-Deflection Oscillator	Horizontal-Deflection Oscillator	
MAXIMUM RATINGS (Design-Center Values)			
DC Plate Voltage	450	450	volts
Peak Negative-Pulse Grid Voltage	400	600	volts
Peak Cathode Current	70	300	mA
Average Cathode Current	20	20	mA
Plate Dissipation:			
Each Plate	3.5	3.5	watts
Both Plates (Both units operating)	7	7	watts
MAXIMUM CIRCUIT VALUE			
Grid-Circuit Resistance	2.2	2.2	megohms

Vertical-Deflection Amplifier (Each Unit)

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

MAXIMUM RATINGS (Design-Center Values)		
DC Plate Voltage	450	volts
Peak Positive-Pulse Plate Voltage* (Absolute maximum)	1500*	volts
Peak Negative-Pulse Grid Voltage	250	volts
Peak Cathode Current	70	mA
Average Cathode Current	20	mA
Plate Dissipation:		
Each Plate	3.5	watts
Both Plates (Both units operating)	7	watts



MAXIMUM CIRCUIT VALUE

Grid-Circuit Resistance for cathode-bias operation 2.2 megohms

Pulse duration must not exceed 15% of a vertical scanning cycle (2.5 milliseconds).

* Under no circumstances should this absolute value be exceeded.

Refer to chart at end of section. **12BK5**

Refer to chart at end of section. **12BL6**

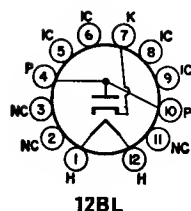
Refer to type 6BN6. **12BN6**

Refer to type 6BQ6GTB/6CU6. **12BQ6GTB/12CU6**

Refer to chart at end of section. **12BR7**

Refer to chart at end of section. **12BS3**

Refer to type 6BS3A. **12BS3A**



12BL

**HALF-WAVE
VACUUM RECTIFIER**

12BT3

Duodecar type used as damper tube in horizontal-deflection circuits of television receivers. Outlines section, 8C; requires duodecar 12-contact socket. Heater: volts (ac/dc), 12.6; amperes, 0.45.

Damper Service

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

MAXIMUM RATINGS (Design-Maximum Values)

Peak Inverse Plate Voltage#	3300	volts
Peak Plate Current	1000	mA
Average Plate Current	165	mA
Plate Dissipation	5.3	watts
Heater-Cathode Voltage:		
Peak value	+300	volts
Average value	+100	volts

CHARACTERISTICS, Instantaneous Value

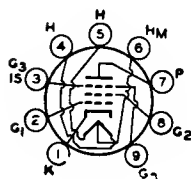
Tube Voltage Drop for plate current of 250 mA max 21 volts

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

Refer to chart at end of section. **12BV7**

Refer to chart at end of section. **12BW4**

Refer to chart at end of section. **12BY7**



9BF

SHARP-CUTOFF PENTODE

12BY7A

Miniature type used as video amplifier in television receivers. Outlines section, 6E; requires miniature 9-contact socket.

Heater Arrangement:	Series	Parallel	
Heater Voltage (ac/dc)	12.6	6.3	volts
Heater Current	0.3	0.6	ampere
Heater Warm-up Time (Average)	—	11	seconds
Heater-Cathode Voltage:			
Peak value		±200 max	volts
Average value		100 max	volts