**9NB****POWER PENTODE****6HB6**

Miniature type used as vertical-deflection amplifier in color and black-and-white television receivers. Outlines section, 6G; requires 9-contact socket.

Heater Voltage (ac/dc)	6.3	volts
Heater Current	0.76	ampere
Heater-Cathode Voltage:		
Peak value	±200 max	volts
Average value	100 max	volts

CHARACTERISTICS

Plate Supply Voltage	60	250	250	volts
Grid No.3		Connected to cathode at socket		
Grid-No.2 Supply Voltage	250	125	250	volts
Grid-No.1 Voltage	0	—	—	volts
Cathode-Bias Resistor	—	33	100	ohms
Mu-Factor, Grid No.2 to Grid No.1	—	—	33	
Plate Resistance (Approx.)	—	28000	24000	ohms
Transconductance	—	24000	20000	μmhos
Plate Current	150*	40	40	mA
Grid-No.2 Current	37*	4.2	6.2	mA
Grid-No.1 Voltage (Approx.) for plate current of 100 μA	—	—6.4	—13	volts

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

Vertical-Deflection Amplifier

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

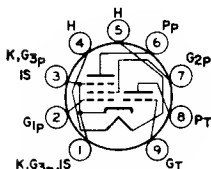
MAXIMUM RATINGS (Design-Maximum Values)

DC Plate Voltage	350	volts
Peak Positive-Pulse Plate Voltage#	2500	volts
DC Grid-No.2 (Screen-Grid) Voltage	300	volts
DC Grid-No.1 (Control-Grid) Voltage	—100	volts
Plate Dissipation	10	watts
Grid-No.2 Input	2	watts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	1	megohm
For cathode-bias operation	2.2	megohms

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

**9QA****MEDIUM-MU TRIODE—
SHARP-CUTOFF PENTODE****6HB7****5HB7**

Miniature type used as combined oscillator and mixer tube in color and black-and-white television receivers utilizing an intermediate frequency in the order of 40 MHz. Outlines section, 6B; requires miniature 9-contact socket. Type 5HB7 is identical with type 6HB7 except for heater ratings.

Heater Voltage (ac/dc)	5HB7 4.7	6HB7 6.3	volts
Heater Current	0.6	0.45	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
Direct Interelectrode Capacitances: Δ			
Triode Unit:			
Grid to Plate		1.9	pF
Grid to Cathode, Heater, Pentode Grid No.3, and Internal Shield		3	pF
Plate to Cathode, Heater, Pentode Grid No.3, and Internal Shield		1.9	pF

Pentode Unit:

Grid No.1 to Plate	0.010 max	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	5	pF
Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	3.4	pF
Heater to Cathode*	3.8	pF

Δ With external shield connected to cathode except as noted.

* With external shield connected to ground.

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

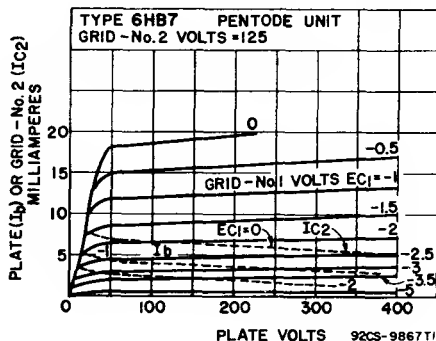
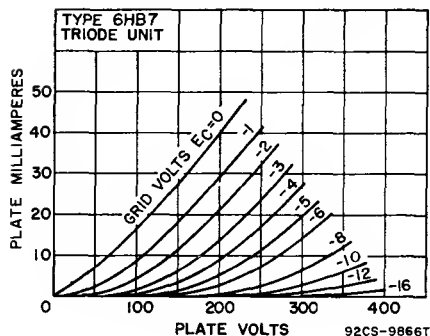
	Triode Unit	Pentode Unit	
Plate Voltage	330	330	volts
Grid-No.2 (Screen-Grid) Supply Voltage	—	330	volts
Grid-No.2 Voltage	—	See curve page 98	
Grid-No.1 (Control-Grid) Voltage:			
Positive-bias value	0	0	volts
Plate Dissipation	2.5	3.1	watts
Grid-No.2 Input:			
For grid-No.2 voltages up to 165 volts	—	0.55	watt
For grid-No.2 voltages between 165 and 330 volts	—	See curve page 98	

CHARACTERISTICS

Plate Supply Voltage	150	125	volts
Grid-No.2 Supply Voltage	—	125	volts
Grid-No.1 Supply Voltage	0	-1	volts
Cathode-Bias Resistor	56	—	ohms
Amplification Factor	40	—	
Plate Resistance (Approx.)	0.005	0.2	megohm
Transconductance	8500	6400	μmhos
Plate Current	18	12	mA
Grid-No.2 Current	—	4	mA
Grid-No.1 Voltage (Approx.) for plate current of 10 μA	-12	-9	volts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.5	0.25	megohm
For cathode-bias operation	1	0.5	megohm



6HE5

BEAM POWER TUBE

Duodecar type used as vertical-deflection amplifier in television receivers. Outlines section, 8D; requires duodecar 12-contact socket. Heater: volts (ac/dc), 6.3; amperes, 0.8; maximum heater-cathode volts, ± 200 peak, 100 average.

Class A₁ Amplifier

CHARACTERISTICS

Plate Voltage	60	250	volts
Grid-No.2 (Screen-Grid) Voltage	250	250	volts
Grid-No.1 (Control-Grid) Voltage	0	-20	volts

