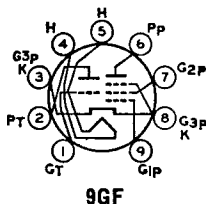


6CG8A

5CG8

**MEDIUM-MU TRIODE—
SHARP-CUTOFF PENTODE**

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. When used in an AM/FM receiver, the triode unit is used as an oscillator for both sections. In the AM section, the pentode unit is used as a high-gain pentode mixer; in the FM section, the pentode unit is used either as a pentode mixer or as a triode-connected mixer depending on signal-to-noise considerations. **Outlines section, 6B**; requires miniature 9-contact socket. Type 5CG8 is identical with type 6CG8A except for heater ratings. These types are electrically identical with miniature type 6X8 except for inter-electrode capacitances.



9GF

	5CG8	6CG8A	
Heater Voltage (ac/dc)	4.7	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:			
Triode Unit:			
Grid to Plate	1.5	1.5	pF
Grid to Cathode, Heater, and Pentode Grid No.3	2	2.4	pF
Plate to Cathode, Heater, and Pentode Grid No.3	0.5	1	pF
Pentode Unit:			
Grid No.1 to Plate	0.04 max	0.02 max	pF
Grid No.1 to Cathode, Heater, Grid No.2, and Grid No.3	4.6	4.8	pF
Plate to Cathode, Heater, Grid No.2, and Grid No.3	0.9	1.6	pF
Pentode Grid No.1 to Triode Plate	0.05 max	0.04 max	pF
Pentode Plate to Triode Plate	0.05 max	0.008 max	pF
Heater to Cathode	6.5	6.5*	pF

* With external shield connected to cathode, except as noted.

* With external shield connected to plate.

6CH3

For replacement use type 6CJ3/6CH3.

6CH8

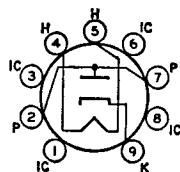
Refer to chart at end of section.

6CJ3

For replacement use type 6CJ3/6CH3.

6CJ3/6CH3**HALF-WAVE
VACUUM RECTIFIER**

Novar type used as damper tube in horizontal-deflection circuits of black-and-white television receivers. **Outlines section, 30F**; requires novar 9-contact socket. Socket terminals 1, 3, 6, and 8 should not be used as tie points. This tube, like other power-handling tubes, should be adequately ventilated. Heater: volts (ac/dc), 6.3; amperes, 1.8.



9HP

Damper Service

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

MAXIMUM RATINGS (Design-Maximum Values)

Peak Inverse Plate Voltage#	5500	volts
Peak Plate Current	2100	mA
Average Plate Current	350	mA
Plate Dissipation	6.5	watts
Heater-Cathode Voltage:		
Peak value	+300	volts
Average value	+100	volts

CHARACTERISTICS, Instantaneous Value

Tube Voltage Drop for plate current of 700 mA 25 volts

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

Refer to chart at end of section.

For replacement use type 6CL3/6CK3. **6CK3**

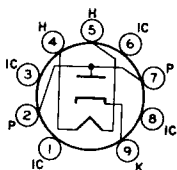
Refer to chart at end of section.

For replacement use type 6CL3/6CK3. **6CK4**
6CL3

**HALF-WAVE
VACUUM RECTIFIER**

6CL3/6CK3

12CL3



9HP

Novar type used as a damper tube in horizontal-deflection circuits of color and black-and-white television receivers. Outlines section, 30B; requires novar 9-contact socket. Socket terminals 1, 3, 6, and 8 should not be used as tie points. This tube, like other power-handling tubes, should be adequately ventilated. Type 12CL3 is identical with type 6CL3/6CK3 except for heater ratings.

	6CL3/6CK3	12CL3	
Heater Voltage (ac/dc)	6.3	12.6	volts
Heater Current	1.2	0.6	amperes
Heater Warm-up Time (Average)	—	11	seconds
Direct Interelectrode Capacitances:			
Plate to Cathode and Heater		6.5	pF
Cathode to Plate and Heater		9	pF
Heater to Cathode		3	pF

Damper Service

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

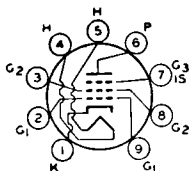
MAXIMUM RATINGS (Design-Maximum Values)

Peak Inverse Plate Voltage#		5500	volts
Peak Plate Current		1300	mA
Average Plate Current		250	mA
Plate Dissipation		8.5	watts
Bulb Temperature (At hottest point)		220	°C
Heater-Cathode Voltage:			
Peak value	+300	—5000	volts
Average value	+100	—900	volts

CHARACTERISTICS, Instantaneous Value

Tube Voltage Drop for plate current of 350 mA 16 volts

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



9BV

POWER PENTODE

6CL6

Miniature type used in output stage of video amplifier of color and black-and-white television receivers and as wide-band amplifier tube in industrial and laboratory equipment. Outlines section, 6E; requires miniature 9-contact socket.

Heater Voltage (ac/dc)	6.3	volts
Heater Current	0.65	ampere
Peak Heater-Cathode Voltage	±100 max	volts
Direct Interelectrode Capacitances (Approx.):		
Grid No.1 to Plate	0.12	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	11	pF
Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	5.5	pF

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Center Values)

Plate Voltage	300	volts
Grid-No.3 (Suppressor-Grid) Voltage, Positive value	0	volts
Grid-No.2 (Screen-Grid) Supply Voltage	300	volts
Grid-No.2 Voltage	150	volts
Grid-No.1 (Control-Grid) Voltage:		
Negative-bias value	50	volts
Positive-bias value	0	volts
Plate Dissipation	7.5	watts
Grid-No.2 Input	1.7	watts
Bulb Temperature (At hottest point)	200	°C

TYPICAL OPERATION

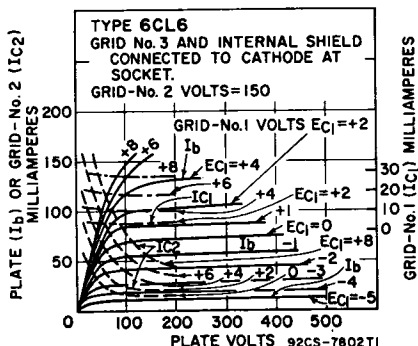
Plate Voltage	250	volts
Grid No.3	Connected to cathode at socket	
Grid-No.2 Voltage	150	volts
Grid-No.1 Voltage	-3	volts
Peak AF Grid-No.1 Voltage	3	volts
Zero-Signal Plate Current	30	mA
Maximum-Signal Plate Current	31	mA
Zero-Signal Grid-No.2 Current	7	mA
Maximum-Signal Grid-No.2 Current	7.2	mA
Plate Resistance (Approx.)	0.09	megohm
Transconductance	11000	μmhos
Load Resistance	7500	ohms
Total Harmonic Distortion	8	per cent
Maximum-Signal Power Output	2.8	watts
Grid-No.1 Voltage (Approx.) for plate current of 10 μA	-14	volts

TYPICAL OPERATION IN MHz-BANDWIDTH VIDEO AMPLIFIER

Plate Supply Voltage	300	volts
Grid No.3	Connected to cathode at socket	
Grid-No.2 Supply Voltage	300	volts
Grid-No.1 Bias Voltage	-2	volts
Grid-No.1 Signal Voltage (Peak to Peak)	3	volts
Grid-No.2 Resistor	24000	ohms
Grid-No.1 Resistor	0.1	megohm
Load Resistor	3900	ohms
Zero-Signal Plate Current	30	mA
Zero-Signal Grid-No.2 Current	7	mA
Voltage Output (Peak to Peak)	132	volts

MAXIMUM CIRCUIT VALUES

Grid-No.1 Circuit Resistance:		
For fixed-bias operation	0.1	megohm
For cathode-bias operation	0.5	megohm



6CL8

Refer to chart at end of section.