

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

	Triode Unit	Pentode Unit	
Plate Voltage	275	275	volts
Grid-No.2 (Screen-Grid) Supply Voltage	—	275	volts
Grid-No.2 Voltage	—	See curve page 300	
Grid-No.1 (Control-Grid) Voltage:			
Positive-bias value	0	0	
Negative-bias value	40	40	volts
Cathode Current	20	20	mA
Plate Dissipation	1.5	2.2	watts
Grid-No.2 Input:			
For grid-No.2 voltages up to 137.5 volts	—	0.45	watts
For grid-No.2 voltages between 137.5 and 275 volts	—	See curve page 300	

CHARACTERISTICS

CHARACTERISTICS	Triode Unit		Pentode Unit		
Plate Voltage	100	125	120	125	volts
Grid-No.2 Voltage	—	—	90	125	volts
Grid-No.1 Voltage	—	—1	—	—1	volt
Grid-No.1-Circuit Resistance	0.1	—	0.1	—	megohm
Amplification Factor	40	—	—	—	
Plate Resistance	—	4700	—	20000	ohms
Transconductance	8700	8500	13000	11000	μmhos
Plate Current	12.5	13	8.5	8	mA
Grid-No.2 Current	—	—	2.8	2.5	mA
Grid-No.1 Voltage for plate current of 20 μA	—6	—	—2.5	—	volts

MAXIMUM CIRCUIT VALUES

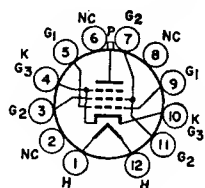
	Triode Unit	Pentode Unit	
Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.5	0.25	megohm
For cathode-bias operation	1	0.5	megohm

6GY5

16GY5, 21GY5

BEAM POWER TUBE

Duodecar type used as horizontal-deflection amplifier in television receivers. Outlines section, 39A; requires duodecar 12-contact socket. Types 16GY5 and 21GY5 are identical with type 6GY5 except for heater ratings.



12DR

	6GY5	16GY5	21GY5	
Heater Voltage (ac/dc)	6.3	15.8	21	volts
Heater Current	1.5	0.6	0.45	amperes
Heater Warm-up Time (Average)	—	11	11	seconds
Heater-Cathode Voltage:				
Peak value	±200 max	±200 max	±200 max	volts
Average value	100 max	100 max	100 max	volts

Class A₁ Amplifier

CHARACTERISTICS

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	—20	—20	volts
Amplification Factor	—	—	—	4.7	
Plate Resistance (Approx.)	—	—	11000	—	ohms
Transconductance	—	—	9100	—	μmhos
Plate Current	—	410**	50	—	mA
Grid-No.2 Current	—	24**	1.75	—	mA
Grid-No.1 Voltage (Approx.) for plate current of 1 μA	—66	—	—33	—	volts

** 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 tied 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

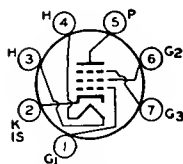
Peak Negative-Pulse Plate Voltage	1500	volts
DC Grid-No.2 Voltage	220	volts
DC Grid-No.1 Voltage	-55	volts
Peak Negative-Pulse Grid-No.1 Voltage	330	volts
Peak Cathode Current	800	mA
Average Cathode Current	230	mA
Plate Dissipation††	18	watts
Grid-No.2 Input	3.5	watts
Bulb Temperature (At hottest point)	220	°C

MAXIMUM CIRCUIT VALUE

Grid-No.1-Circuit Resistance	1	megohm
------------------------------	---	--------

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.



7EN

Heater Voltage (ac/dc)	6.3	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:		
Grid No.1 to Plate	0.026	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	8	pF
Grid No.1 to Grid No.3	0.12	pF
Grid No.3 to Plate	1.6	pF
Grid No.3 to Cathode, Heater, Plate, Grid No.1, Grid No.2, and Internal Shield	6.5	pF

SHARP-CUTOFF PENTODE

Miniature type used in gated-agc-amplifier circuits and as a noise-inverter tube in color and black-and-white television receivers. Tube has two independent control grids. Outlines section, 5C; requires miniature 7-contact socket.

6GY6
6GY6/
6GX6

Class A₁ Amplifier

CHARACTERISTICS

Plate Supply Voltage	150	volts
Grid-No.3 Supply Voltage	0	volts
Grid-No.2 Supply Voltage	100	volts
Grid-No.1 Supply Voltage	0	volts
Cathode-Bias Resistor	180	ohms
Plate Resistance (Approx.)	0.14	megohm
Transconductance, Grid No.1 to Plate	3700	μmhos
Transconductance, Grid No.3 to Plate	750	μmhos
Plate Current	3.7	mA
Grid-No.2 Current	3	mA
Grid-No.3 Supply Voltage (Approx.) for plate current of 20 μA	-7	volts
Grid-No.1 Supply Voltage (Approx.) for plate current of 20 μA	-4.5	volts

Gated AGC Amplifier and Noise Inverter

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

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	300	volts
Peak Positive-Pulse Plate Voltage#	600	volts
Grid-No.3 (Control-Grid) Voltage:		
Negative-bias value	100	volts
Positive-bias value	0	volts
Grid-No.2 (Screen-Grid) Supply Voltage	300	volts
Grid-No.2 Voltage	See curve page 300	
Grid-No.1 (Control-Grid) Voltage:		
Negative-bias value	50	volts
Positive-bias value	0	volts
Plate Dissipation	1.7	watts
Grid-No.2 Input:		
For grid-No.2 voltages up to 150 volts	1	watt
For grid-No.2 voltages between 150 and 300 volts	See curve page 300	