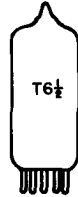
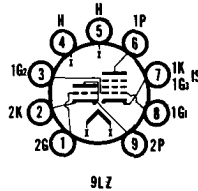


AF VOLTAGE AMPLIFIER and AUDIO POWER AMPLIFIER

6GW8/ECL86

Triode and Pentode

Construction	Miniature T-6½
Base	Button 9 Pin, E9-1
Basing	9LZ
Outline	6-4
Maximum Diameter	0.875 In.
Maximum Seated Height	2.812 In.
Maximum Overall Height	3.062 In.



ELECTRICAL DATA

HEATER OPERATION

Heater Voltage	6.3 Volts
Heater Current	700 Ma
Maximum Heater-Cathode Voltage	100 Volts

DIRECT INTERELECTRODE CAPACITANCES

Pentode Section

Control Grid to All Other Elements except Plate	10 Pf
Plate to All Other Elements except Control Grid	9.5 Pf
Plate to Control Grid (Max.)	0.5 Pf
Control Grid to Heater (Max.)	0.2 Pf

Triode Section

Grid to All Other Elements except Plate	2 Pf
Plate to All Other Elements except Control Grid	1.8 Pf
Plate to Grid	1.6 Pf
Grid to Heater (Max.)	0.04 Pf

Coupling

Plate of Triode to Control Grid of Pentode (Max.)	0.2 Pf
Grid of Triode to Plate of Pentode (Max.)	0.02 Pf
Grid of Triode to Control Grid of Pentode (Max.)	0.02 Pf
Plate of Triode to Plate of Pentode (Max.)	0.2 Pf

RATINGS (Design Center Rating System)

Pentode Section

Plate Voltage (Zero Plate Current) (Max.)	550 Volts
Plate Voltage (Max.)	300 Volts
Screen Grid Voltage (Zero Grid Current) (Max.)	550 Volts
Screen Grid Voltage (Max.)	300 Volts
Plate Dissipation (Max.)	9 Watts
Screen Grid Dissipation (Max.)	1.5 Watts
Peak Screen Grid Dissipation (Max.)	3 Watts
Cathode Current (Max.)	55 Ma
External Resistance Between Control Grid and Ground (Self Bias) (Max.)	1 Megohm
Negative Control Grid Voltage (Control Grid Current = 0.3 μ a) (Max.)	1.3 Volts
Cathode-Heater Resistance (Max.)	20,000 Ohms

Triode Section

Plate Voltage (Zero Plate Current) (Max.)	550 Volts
Plate Voltage (Max.)	300 Volts
Plate Dissipation (Max.)	0.5 Watts
Cathode Current (Max.)	8 Ma
External Resistance Between Grid and Ground (Self Bias) (Max.)	2 Megohms
External Resistance Between Grid and Ground (Grid Leak Bias) (Max.)	10 Megohms
Negative Grid Voltage (Grid Current = 0.3 μ a) (Max.)	1.3 Volts
Cathode-Heater Resistance (Max.)	20,000 Ohms
Cathode-Heater Resistance (Max.) (In Phase Splitting Circuits) (Max.)	120,000 Ohms

CHARACTERISTICS AND TYPICAL OPERATION

Triode Section

Plate Voltage	250 Volts
Negative Grid Voltage	1.7 Volts
Plate Current	1.2 Ma
Transconductance	1600 μ mhos
Amplification Factor	100

Pentode Section

Plate Voltage	250 Volts
Screen Grid Voltage	250 Volts
Negative Control Grid Voltage	7 Volts
Plate Current	36 Ma

Screen Grid Current	5.5 Ma
Transconductance	10,000 μ mhos
Internal Plate Resistance	45,000 Ohms
Amplification Factor—Grid No. 1 to Grid No. 2	21

6GX7**4GX7, 5GX7, 8GX7**

Color Television Type

VHF OSCILLATOR and MIXER**Medium Mu Triode and Sharp Cutoff Pentode**

Construction	Miniature T-6½
Base	Button 9 Pin, E9-1
Basing	.9QA
Outline	6-2
Maximum Diameter	0.875 In.
Maximum Seated Height	1.937 In.
Maximum Overall Height	2.187 In.

ELECTRICAL DATA**HEATER OPERATION**

	4GX7	5GX7	8GX7	6GX7
Heater Voltage	4.2	5.6	7.7	6.3 Volts
Heater Current	600	450	300	400 Ma
Heater Warm-up Time	11	11	11	— Seconds
Maximum Heater-Cathode Voltage				
Heater Negative with Respect to Cathode				
Total DC and Peak				200 Volts
Heater Positive with Respect to Cathode				
DC				100 Volts
Total DC and Peak				200 Volts

DIRECT INTERELECTRODE CAPACITANCES (Shielded)⁽¹⁾**Triode Section**

Grid to Plate	1.2 Pf
Input: g1 to (k + Pg3 + IS + h)	2.3 Pf
Output: p to (k + Pg3 + IS + h)	1.9 Pf

Pentode Section

Grid No. 1 to Plate (Max.)	0.005 Pf
Input: g1 to (k + g3 + IS + g2 + h)	5.4 Pf
Output: p to (k + g3 + IS + g2 + h)	3.3 Pf
Grid No. 1 to Grid No. 2	1.6 Pf

RATINGS (Design Maximum Rating System)

	Triode Section	Pentode Section
Plate Voltage (Max.)	275	275 Volts
Grid No. 2 Supply Voltage (Max.)	—	275 Volts
Grid No. 2 Voltage	See Rating Chart (Gen. Info. Sec.)	
Cathode Current (Max.)	20	20 Ma
Plate Dissipation (Max.)	1.5	2.2 Watts
Grid No. 2 Dissipation (Max.)	—	0.45 Watt
Positive Grid No. 1 Voltage (Max.)	0	0 Volt
Maximum Grid No. 1 Circuit Resistance		
Self Bias (Max.)	1.0	0.5 Megohm
Fixed Bias (Max.)	0.5	0.25 Megohm

Control grid to cathode spacing of the pentode section of this type is of such low order of magnitude as to preclude the use of voltage between these elements of more than 30 volts dc or peak ac in commercial tube checkers and shorts indicating devices, particularly where mechanical excitation of the tube is employed.

CHARACTERISTICS AND TYPICAL OPERATION**Class A1 Amplifier**

	Triode Section		Pentode Section	
Plate Voltage	100	125	120	125 Volts
Grid No. 2 Voltage	—	—	90	125 Volts
Grid No. 1 Voltage	—	-1.0	—	-1.0 Volt
Cathode Bias Resistor	0.1	—	0.1	— Megohm
Plate Current	12.5	13	8.5	8 Ma
Grid No. 2 Current	—	—	2.8	2.5 Ma
Transconductance	8700	8500	13,000	11,000 μ mhos
Amplification Factor	—	40	—	—
Plate Resistance (Approx.)	—	4700	—	200,000 Ohms
Ec1 for Ib = 20 μ a (Approx.)	-6.0	—	-2.5	— Volts

NOTE:

(1) Shield connected to cathode.

