

# 6BQ5/EL84

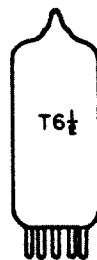
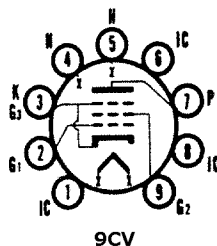
8BQ5, 10BQ5

Color Television Type

## AUDIO POWER AMPLIFIER

### Beam Pentode

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



### ELECTRICAL DATA HEATER OPERATION

	10BQ5	8BQ5	6BQ5/EL84
Heater Voltage.....	10.6	8.0	6.3 Volts
Heater Current.....	450	600	760 Ma
Heater Warm-up Time.....	11	11	— Seconds
Maximum Heater Cathode Voltage.....			100 Volts

### DIRECT INTERELECTRODE CAPACITANCES

Grid No. 1 to Plate (Max.).....	0.5 Pf
Input.....	10.8 Pf
Output.....	6.5 Pf
Grid No. 1 to Heater (Max.).....	0.25 Pf

### RATINGS (Design Center Rating System)

Plate Voltage (Max.) <sup>(1)</sup> .....	300 Volts
Grid No. 2 Voltage (Max.) <sup>(1)</sup> .....	300 Volts
Negative Grid No. 1 Voltage (Max.).....	100 Volts
Plate Dissipation (Max.).....	12 Watts
Grid No. 2 Dissipation (Max.).....	2 Watts
Cathode Current (Max.).....	65 Ma
Grid No. 1 Circuit Resistance	
Fixed Bias (Max.).....	0.3 Megohm
Cathode Bias (Max.).....	1.0 Megohm

### CHARACTERISTICS AND TYPICAL OPERATION

	Triode Operation <sup>(2)</sup>			Pentode Operation		
	Class A1 Single Tube	Class AB1 Push-pull		Class A1 Single Tube	Class AB1 Push-pull	
Plate Voltage.....	250	250	300	250	250	300 Volts
Grid No. 2 Voltage.....	—	—	—	250	250	300 Volts
Grid No. 1 Voltage.....	—	—	—	-7.3	—	— Volts
Cathode Resistor <sup>(3)</sup> .....	270	270	270	135	130	130 Ohms
Grid Voltage (RMS) <sup>(4)</sup> .....	6.7	8.4	10	4.3	8	10 Volts
Plate Current						
(Zero-Signal).....	34	40	48	48	62	72 Ma
(Maximum Signal).....	36	53.4	52	49.5	75	92 Ma
Grid No. 2 Current						
(Zero Signal).....	—	—	—	5.5	7.0	8 Ma
(Maximum Signal).....	—	—	—	10.8	15	22 Ma
Transconductance.....	—	—	—	11.3K	—	— μmhos
Amplification Factor <sup>(1)</sup> .....	—	—	—	19	—	—
Plate Resistance.....	—	—	—	38K	—	— Ohms
Load Resistance.....	3.5K	—	—	5.2K	—	— Ohms
Load Resistance						
(Plate to Plate).....	—	10K	10K	—	8K	8K Ohms
Maximum-Signal Power Output..	1.95	3.4	5.2	5.7	11	17 Watts
Total Harmonic Distortion <sup>(1)</sup> ....	9	2.5	2.5	10	3.0	4.0 Percent
<b>CLASS AB1 ULTRA-LINEAR CONNECTION<sup>(6)</sup></b>						
Plate Voltage.....						300 Volts
Cathode Resistor (Per Tube).....						270 Ohms
Grid Voltage (RMS).....						8 Volts
Cathode Current (Zero Signal).....						80 Ma
Cathode Current (Max. Signal).....						90 Ma
Load Resistance (P1 to P1).....						8000 Ohms
Power Output.....						11 Watts

### NOTES:

(1) When the heater and positive voltages are obtained from a storage battery by means of a vibrator, the maximum values of the plate and Grid No. 2 voltage is 250 volts and the plate dissipation is 9 watts.

- (2) Grid No. 2 connected to plate.
- (3) Common cathode resistor for push-pull applications.
- (4) Per grid.
- (5) Measured from grid No. 2 to plate.
- (6) For Pentode Operation—Class A Amplifier Service, the maximum signal power output and total distortion are measured at fixed bias and therefore represses the power output available during the reproduction of speech and music. When a sustained sine wave is applied to the control grid the bias across the cathode resistor will readjust itself as a result of the increased plate and screen grid currents. This will result in approximately 10 percent reduction in power output.
- (7) Measured with fixed bias.
- (8) Grid No. 2 taps located at 43% of primary winding.