

1. Overview

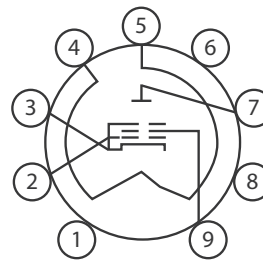
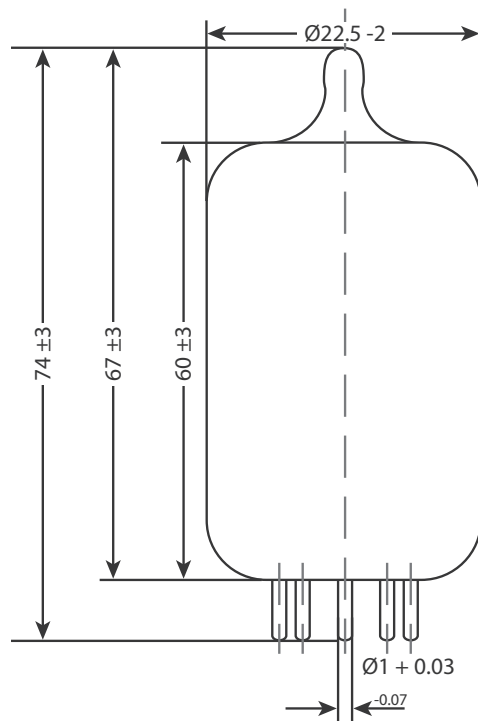
The EL84 is a power-amplifier pentode designed for use in the audio-frequency power-output stage of television and radio receivers and high-fidelity amplifiers.

2. Specifications

Heater	
U_H	6.3 V
I_H	0.76 A
Maximum Ratings	
Plate Voltage	500 V
Plate Dissipation	12 W
Grid #2 Voltage	300 V
Grid #2 Dissipation	2 W
Cathodic Current	65 mA
Grid #1 Dissipation	-100 V
Heater-Cathode Voltage	± 100 V
Grid #1 Resistance	
Cathode Bias	1 M Ω
Fixed Bias	0.3 M Ω
Direct Interelectrode Capacitances	
Input	10.8 PF
Output	6.5 PF
Transfer Capacitance	0.5 PF
Grid #1-Heater	0.25 PF
Static Parameter	
U_a	256 V
U_{g_2}	256 V
R_K	120 Ω
I_a	48 mA
I_{g_2}	7 mA
G_m	≥ 9 mA/V
r_i	38 k Ω
$\mu_{g_1-g_2}$	19

Characteristics And Typical Operation Class A1 Amplifier

Ua	250 V			
Ug ₂	250 V			
-Ug ₁	7.3 V			
R _K	135 Ω			
R _L	5.2 KΩ			
Ūg ₁ (r.M.S)	0	3.4	4.3	4.7 V
I _a (0)	48	—	—	— mA
I _a (max • sig)	—	—	49.5	49.2 mA
I _{g₂} (0)	5.5	—	—	— mA
I _{g₂} (max • sig)	—	—	10.8	11.6 mA
Gm	11.3	—	—	— mA/V
r _i	38	—	—	— kΩ
H _{g₁—g₂}	19	—	—	—
P _{out}	0	4.5	5.7	6.0 w
D _{tot}	0	6.8	10	— %



Terminal Connections

- Pin 1 – Internal Connection
- Pin 2 – Grid Number 1
- Pin 3 – Cathode and Grid Number 3 (Suppressor)
- Pin 4 – Heater
- Pin 5 – Heater
- Pin 6 – Internal Connection
- Pin 7 – Plate
- Pin 8 – Internal Connection
- Pin 9 – Grid Number 2 (Screen)

Class A1 Amplifier												
U _a	250				250			250 V				
U _{g2}	250				250			210 V				
-U _{g1}	7.3				8.4			6.4 V				
R _k	135				210			160 Ω				
R _L	4.5				7			7 kΩ				
Ū _{g1} (r.M.S)	0	3.5	4.4	4.8	0	3.5	5.5	0	3.4	3.8 V		
I _a (0)	48	—	—	—	36	—	—	36	—	— V		
I _a (max • sig)	—	—	50.6	50.5	—	36.8	36	—	36.6	36.5 mA		
I _{g2}	5.5	—	—	—	4.1	—	—	3.9	—	— mA		
I _{g2} (max • S sig)	—	—	10	11	—	8.5	14.6	—	7.3	8.0 mA		
G _m	11.3	—	—	—	10	—	—	10.4	—	— mA/V		
r _i	38	—	—	—	40	—	—	40	—	— kΩ		
μ _{g1—g2}	19	—	—	—	19	—	—	19	—			
P _{out}	0	4.5	5.7	6.0	0	4.2	5.6	0	4.3	4.7 W		
D _{tot}	7.5	10	—	—	—	10	—	—	10	— %		
Push-pull Class AB1 Amplifier Amplifier Triode Connection	Push-pull Class B Amplifier						Push-pull Class AB1					
U _a	250	300	250	300	250		300 V					
U _{g2}	250	300	250	300	—		— V					
-U _{g1}	—	—	11.6	14.7	—		— V					
R _k	130	130	—	—	270		270 Ω					
R _L	8	8	8	8	10		10 k Ω					
Ū _{g1} (r.M.S)	0	16	0	20	0	16	0	20	0	16.6	0	20 V
I _a (0)	62	—	72	—	20	—	15	—	40	—	48	— mA
I _a (max • sig)	—	75	—	92	—	75	—	92	—	43.4	—	52 mA
I _{g2} (0)	7	—	8	—	2.2	—	1.6	—	—	—	—	— mA
I _{g2} (max • sig)	15	—	22	—	15	—	22	—	—	—	—	— mA
P _{out}	0	11	0	17	0	11	0	17	0	3.4	0	5.2 W
D _{tot}	—	3	—	4	—	3	—	4	—	2.5	—	2.5%
Class A1 Amplifier, Triode Connection												
U _{ag2}	250 V											
R _k	270 Ω											
R _L	3.5 kΩ											
Ū _{g1} (r.M.S)	0				2.0				13.4 V			
I _a (0)	34				—				— mA			
I _a (max • sig)	—				—				36 mA			
P _{out}	—				0.05				1.94 W			
D _{tot}	—				—				9%			