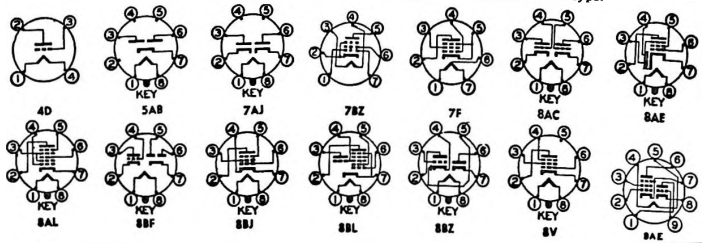
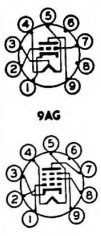
Tube Type	Classification by Construction	Base Connections	Outline Dwg	Type Cathode	Filament Volts	Filament Amp	Max Plate Volts	Max Screen Volts	Capacitance in Micromicrofarads: Input	Output	Grid-plate
7K7	Duplex-Diode High-Mu Triode	8BF	9–30	Htr	6.3	0.3	250	—	—	—	—
7L7	Sharp-Cutoff Pentode	8V	9–30	Htr	6.3	0.3	300	125	8.0	6.5	0.01 ♣
7N7	Medium-Mu Twin Triode	8AC	9–31	Htr	6.3	0.6	300	—	—	—	—
7Q7	Pentagrid Converter	8AL ♥	9–30	Htr	6.3	0.3	300	100	Osc I_{g1} = 0.5 ma, R_{g1} = 20,000 ohms		
7R7	Duplex-Diode Remote-Cutoff Pentode	8AE	9–30	Htr	6.3	0.3	250	125	5.6	5.3	0.004 ♣
7S7	Triode-Heptode Converter	8BL	9–30	Htr	6.3	0.3	300	100	Osc I_{g1} = 0.4 ma, R_{g1} = 50,000 ohms		
7T7	Sharp-Cutoff RF Pentode	8V	9–30	Htr	6.3	0.3	300	150	7.5	5.5	0.005
7V7	Sharp-Cutoff RF Pentode	8V	9–30	Htr	6.3	0.45	300	150	—	—	—
7W7	Sharp-Cutoff RF Pentode	8BJ	9–30	Htr	6.3	0.45	300	150	—	—	—
7X6	High-Vacuum Rectifier-Doubler	7AJ	9–31	Htr	6.3	1.2	Tube Voltage Drop: ♠ 22 v at 150 ma d-c				
7X7	Duplex-Diode High-Mu Triode	8BZ	9–31	Htr	6.3	0.3	300	—	—	—	—
7Y4	Full-Wave High-Vacuum Rectifier	5AB	9–30	Htr	6.3	0.5	Tube Voltage Drop: ♠ 22 v at 70 ma d-c				
7Z4	Full-Wave High-Vacuum Rectifier	5AB	9–31	Htr	6.3	0.9	Tube Voltage Drop: ♠ 40 v at 100 ma				
9BM6	Power Amplifier Pentode	7BZ	5–3	Htr	9.5	0.3	250	250	8.0 ▲	5.5 ▲	0.5 ▲♣
9BW6	Beam Power Amplifier	9AM	6–3	Htr	9.45	0.3	315	285	—	—	—
9U8	Triode-Pentode	9AE	6–2	Htr	9.45	0.3	300	150	Pentode Section		
							300	—	Triode Section		
10	Power Amplifier Triode	4D	T-X	Fil	7.5	1.25	425	—	4.0	3.0	7.0
12A	Detector Amplifier Triode	4D	14–1	Fil	5.0 DC	0.25	180	—	4.0 ▲	2.0 ▲	8.5 ▲
12A4	Medium-Mu Triode	9AG	6–3	Htr	12.6 / 6.3	0.3 / 0.6	450	—	4.9 ▲	0.9 ▲	5.6 ▲
12A5	Power Amplifier Pentode	7F	12–5	Htr	12.6 / 6.3	0.3 / 0.6	180	180	—	—	—

Metal tubes are shown in bold-face type, *miniature tubes in italics.* ●Subminiature type.



Service	Plate Volts	Screen Volts	Neg Grid Volts	Plate Milliamperes	Screen Milliamperes	R_p, Ohms	G_m, μmhos	μ Factor	Load for Rated Output, Ohms	Power Output, Watts	Tube Type
Class A Amplifier	250	—	2.0	2.3	—	44,000	1,600	70	—	—	7K7
Class A Amplifier	250	100	1.5	4.5	1.5	1,000,000§	3,100	—	—	—	7L7
Class A Amplifier ♠	250	—	8.0	9.0	—	7,700	2,600	20	—	—	7N7
Converter	250	100	2.0	3.5	8.5	1,000,000§	550 #	—	—	—	7Q7
Class A Amplifier	250 100	100 100	1.0 1.0	5.7 5.5	2.1 2.2	1,000,000§ 350,000§	3,200 3,000	— —	— —	— —	7R7
Converter	250	100	2.0	1.8	3.0	1,250,000§	525 #	E_b (Triode Osc) = 250 thru 20,000 ohms; I_b (Triode) = 5.0 ma			7S7
Class A Amplifier	250	150	1.0	10.8	4.1	900,000	4,900	—	—	—	7T7
Class A Amplifier	300	150	R_k = 160	10	3.9	300,000§	5,800	—	—	—	7V7
Class A Amplifier	300	150	R_k = 160	10	3.9	300,000	5,800	—	—	—	7W7
Rectifier or Doubler	Max d-c output current per plate = 75 ma; max peak inverse voltage = 700 volts; rms supply voltage per plate = 235 volts; max peak current per plate = 450 ma										7X6
Class A Amplifier	250	—	1.0	1.9	—	67,000	1,500	100	—	—	7X7
Full-Wave Rectifier	Max d-c output current = 70 ma; max peak inverse voltage = 1250 volts; max rms supply voltage per plate = 325 volts; max peak current per plate = 210 ma										7Y4
Full-Wave Rectifier	Max d-c output current = 100 ma; max peak inverse voltage = 1,250 volts; max rms supply voltage per plate = 325 volts; max peak current per plate = 300 ma										7Z4
Class A Amplifier	250	250	6.0	30†	3.0†	60,000§	7,000	—	7,000	3.5	*9BM6*
Class A Amplifier	250	250	12.5	45†	4.5†	52,000§	4,100	—	5,000	4.5	*9BW6*
Class A Amplifier Class A Amplifier	250 150	110 —	R_k = 68 R_k = 56	10 18	3.5 —	400,000§ 5,000§	5,200 8,500	— 40	— —	— —	*9U8*
Class A Amplifier	425	—	40	18†	—	5,000	1,600	8.0	10,200	1.6	10
Class A Amplifier	180	—	13.5	7.7†	—	4,700	1,800	8.5	10,650	0.285	12A
Vertical Deflection Amplifier	250	—	9.0	23	—	2,500§	8,000	20	—	—	*12A4*
	Max positive pulse plate voltage: ▣ = 1,000 volts; max plate dissipation = 5.9 watts; max d-c cathode current = 30 ma										
Class A Amplifier	180 100	180 100	25 15	45† 17†	8† 3†	35,000§ 50,000§	2,400 1,700	— —	3,300 4,500	3.4 0.8	12A5



§ Approximate.
▲Without external shield.
† Zero signal.
♠ Grids 3 and 5 are screen. Grid 4 is signal-input grid.
Conversion transconductance.
♣Maximum.
♥Grids 2 and 4 are screen. Grid 3 is signal-input grid.
✱Screen supply voltage.
▣Absolute maximum rating.
‡ Plate-to-plate.
♦Per section.

⊕For both sections.
* Minimum.
¶ Heater warm-up time controlled for series-string service.
§ Plate supply voltage.
‖ Input plate.
₃—The duration of the pulse voltage must not exceed 15 percent of one scanning cycle.
₁—Section 1.
₂—Section 2.
₄—A resistor of 3 ohms must be put in series with heater.