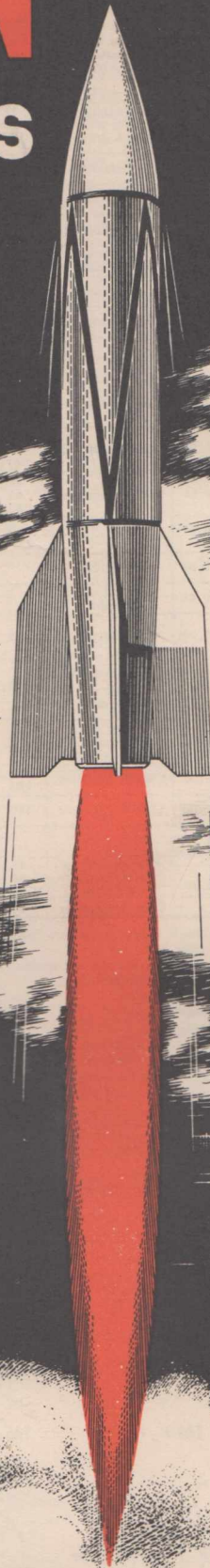


# RADIOTRON

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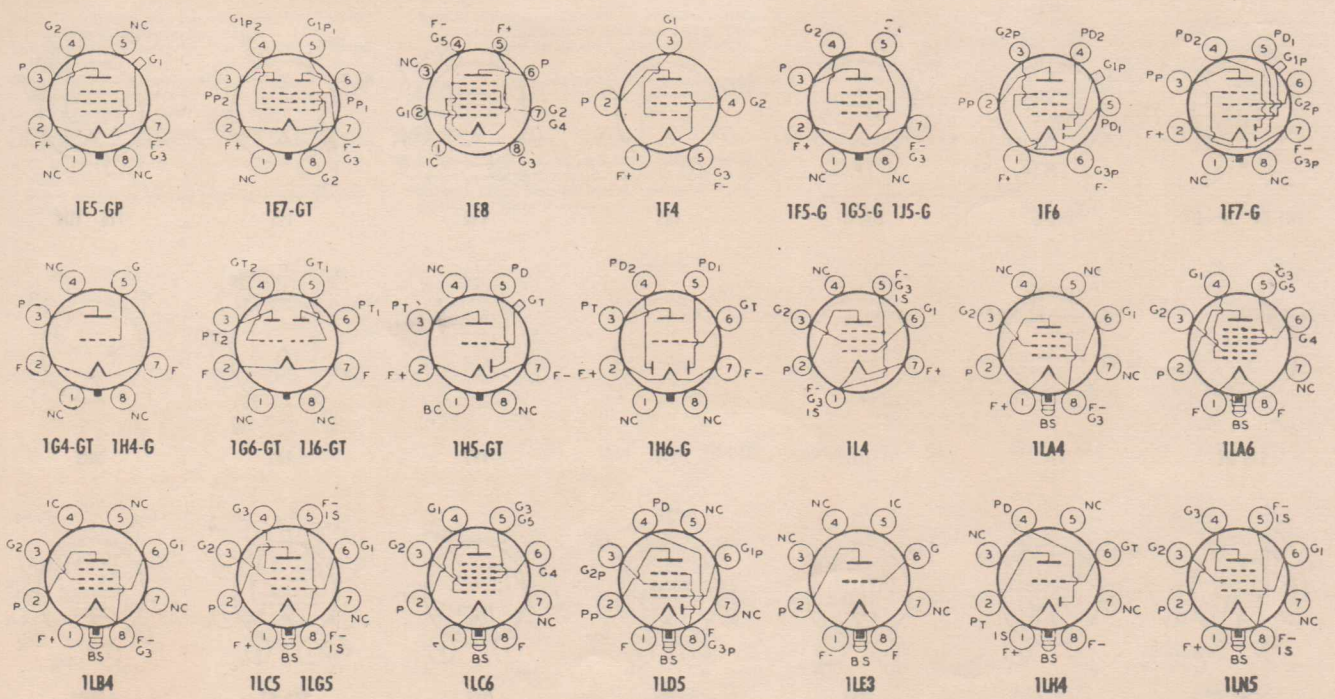


*Publication*



Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type			
			C.T.	Volts	Amp.															
1E5-GP	RF Amplifier Pentode	D8	D.C. F	2.0	0.06	Class A Amplifier	90 180	- 3.0 - 3.0	67.5 67.5	0.7 0.6	1.6 1.7	1.0 $\frac{1}{2}$ 1.3	600 650	—	—	—	1E5-GP			
1E7-GT	Twin-Pentode Power Amplifier	C2b	D.C. F	2.0	0.24	Class A Amplifier	135	- 7.5	135	—	Power Output is for one tube at stated plate-to-plate load.			24000	0.575	—	1E7-GT			
1E8	Pentagrid Converter	A	F	1.25	0.04	Converter	30 45 67.5	0 0	30 45 67.5	0.8 1.1 1.5	0.3 0.6 1.0	300000 400000 400000	Oscillator Grid (#1) Resistor, 0.1 meg. Conversion Transcond., 150 micromhos			—	—	—	1E8	
1F4	Power Amplifier Pentode	D12	D.C. F	2.0	0.12	Amplifier	For other characteristics, refer to Type 1F5-G.										—	—	—	1F4
1F5-G	Power Amplifier Pentode	D10	D.C. F	2.0	0.12	Class A Amplifier	90 135	- 3.0 - 4.5	90 135	1.1 2.4	4.0 8.0	240000 200000	1400 1700	—	20000 16000	0.11 0.31	—	1F5-G		
1F6	Duplex-Diode Pentode	D9	D.C. F	2.0	0.06	Pentode Unit as Amplifier	For other characteristics, refer to Type 1F7-G.										—	—	—	1F6
1F7-G	Duplex-Diode Pentode	D8	D.C. F	2.0	0.06	Pentode Unit as RF Amplifier Pentode Unit as AF Amplifier	180 135	- 1.5 - 2.0	67.5	0.7	2.2	1.0 $\frac{1}{2}$	650	—	—	—	—	1F7-G		
1G4-GT	Medium-Mu Triode	C4	D.C. F	1.4	0.05	Class A Amplifier	90	- 6.0	—	—	2.3	10700	825	8.8	—	—	—	1G4-GT		
1G5-G	Power Amplifier Pentode	D10	D.C. F	2.0	0.12	Class A Amplifier	90 135	- 6.0 - 13.5	90 135	2.5 2.5	8.5 8.7	133000 160000	1500 1550	—	8500 9000	0.25 0.55	—	1G5-G		
1G6-GT	Twin-Triode Amplifier	C4	D.C. F	1.4	0.10	Class B Amplifier	90	0	—	—	—	Power Output is for one tube at stated plate-to-plate load.			12000	0.350	—	1G6-GT		
1H4-G	Detector Amplifier	D3	D.C. F	2.0	0.06	Class A Amplifier Class B Amplifier	90 135 180	- 4.5 - 9.0 - 13.5	—	—	—	2.5 3.0 3.1	11000 10300 10300	850 900 900	9.3 9.3 9.3	—	—	—	1H4-G	
1H5-GT	Diode High-Mu Triode	C3	D.C. F	1.4	0.05	Triode Unit as Class A Amplifier	90	0	—	—	0.15	240000	275	65	—	—	—	1H5-GT		
1H6-G	Duplex-Diode Triode	D3	D.C. F	2.0	0.06	Triode Unit as Class A Amplifier	135	- 3.0	—	—	0.8	35000	575	20	—	—	—	1H6-G		
1J5-G	Power Pentode	D10	D.C. F	2.0	0.12	Class A Amplifier	135	- 16.5	135	2.0	7.0	105000	950	—	13500	0.45	—	1J5-G		
1J6-GT	Twin-Triode Amplifier	C10	D.C. F	2.0	0.24	Class B Amplifier	135 135	0 - 3.0	—	—	—	Power Output is for one tube at stated plate-to-plate load.			10000 10000	2.2 2.0	—	1J6-GT		
1L4	RF Amplifier Pentode	B0	D.C. F	1.4	0.05	Class A Amplifier	90 90	0 0	67.5 90	1.2 2.0	2.9 4.5	600000 260000	925 1025	—	—	—	—	1L4		
1LA4	Power Amplifier Pentode	B5	D.C. F	1.4	0.05	Amplifier	For other characteristics, refer to Type 1A5-GT.										—	—	—	1LA4
1LA6	Pentagrid Converter	B5	D.C. F	1.4	0.05	Converter	90	0	45	0.6	0.55	750000	Anode-Grid (#2): 90 max. volts, 1.2 ma. Oscillator Grid (#1) Resistor, 0.2 meg. Conversion Transcond., 250 micromhos.			—	—	—	1LA6	
1LB4	Power Amplifier Pentode	B5	D.C. F	1.4	0.05	Class A Amplifier	For other characteristics, refer to Pentode Unit of Type 1D8-GT.										—	—	—	1LB4
1LC5	RF Amplifier Pentode	B5	D.C. F	1.4	0.05	Class A Amplifier	45 90	0 0	45 45	0.35 0.30	1.10 1.15	700000 1.0 $\frac{1}{2}$	750 775	—	—	—	—	1LC5		
1LC6	Pentagrid Converter	B5	D.C. F	1.4	0.05	Converter	45 90	0 0	35 35	0.75 0.70	0.70 0.75	300000 300000	Anode-Grid (#2): 45 max. volts, 1.4 ma. Oscillator-Grid (#1) Resistor, 1.0 meg. Conversion Transcond., 275 micromhos.			—	—	—	1LC6	
1LD5	Diode-Pentode	B5	D.C. F	1.4	0.05	Pentode Unit as Class A Amplifier	Plate Supply, 90 volts applied through 1 meg. resistor. Grid Bias, 0 volts, Grid Resistor, 10 megohms. Voltage Gain, 101 approx.										—	—	—	1LD5
1LE3	Medium-Mu Triode	B5	F	1.4	0.05	Class A Amplifier	90	- 3	—	—	—	4.5 1.4	11200 19000	1300 760	14.5 14.5	—	—	—	1LE3	
1LG5	Remote-Cutoff Pentode	B5	F	1.4	0.05	Class A Amplifier	90 90	0 - 1.5	45 90	0.4 0.9	1.7 3.7	1.0 $\frac{1}{2}$ 500000	800 1150	—	—	—	—	1LG5		
1LH4	Diode High-Mu Triode	B5	D.C. F	1.4	0.05	Triode Unit as Class A Amplifier	For other characteristics, refer to Type 1H5-GT.										—	—	—	1LH4
1LN5	RF Amplifier Pentode	B5	D.C. F	1.4	0.05	Class A Amplifier	90	0	90	0.35	1.6	1.1 $\frac{1}{2}$	800	—	—	—	—	1LN5		

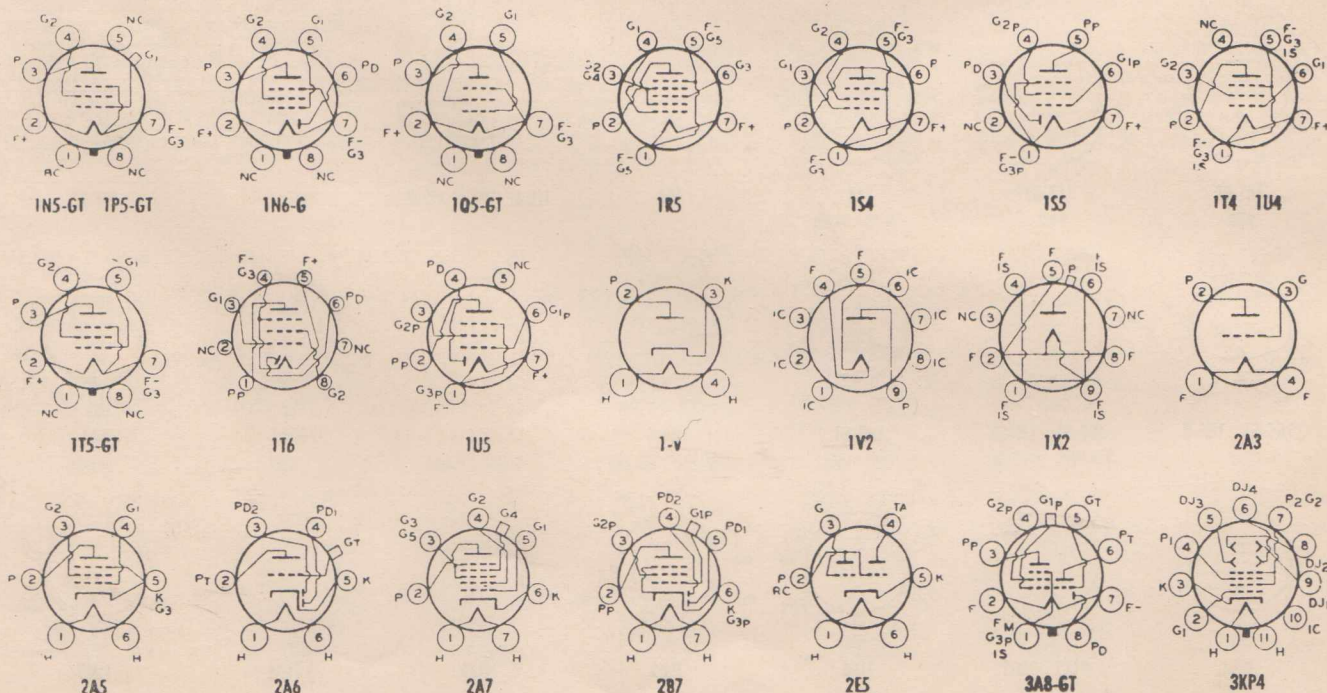
For footnotes, see preceding page



# 1N5-GT to 3KP4

Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
1N5-GT	RF Amplifier Pentode	C3	D.C. F	1.4	0.05	Class A Amplifier	90	0	90	0.3	1.2	1.5 $\Omega$	750	—	—	—	1N5-GT
1N6-G	Diode-Power Amplifier Pentode	D1	D.C. F	1.4	0.05	Pentode Unit as Class A Amplifier	90	-4.5	90	0.7	3.4	300000	800	—	25000	0.1	1N6-G
1P5-GT	Remote-Cutoff Beam Power Amplifier	C3	D.C. F	1.4	0.05	Class A Amplifier	90	0	90	0.7	2.3	800000	750	—	—	—	1P5-GT
1Q5-GT	Beam Power Amplifier	C3	D.C. F	1.4	0.1	Class A Amplifier	90	-4.5	90	1.3	9.5	90000	2200	—	8000	0.27	1Q5-GT
1R5	Pentagrid Converter	B0	D.C. F	1.4	0.05	Converter	45 90	0	45 67.5	1.9 3.2	1.6	600000 600000	Grid #1 Resistor, 100000 ohms. Conversion Transcond., 300 micromhos.	—	—	—	1R5
1S4	Power Amplifier Pentode	B0	D.C. F	1.4	0.1	Class A Amplifier	45 90	-4.5 -7.0	45 67.5	0.8 1.4	3.9 7.4	100000 100000	1250 1575	—	8000 8000	0.065 0.27	1S4
1S5	Diode-Pentode	B0	D.C. F	1.4	0.05	Pentode Unit as AF Amplifier	Plate Supply, 90 volts applied through 1 meg. resistor. Screen Supply, 90 volts applied through 3 meg. resistor. Grid Bias, 0 volts. Grid Resistor, 10 megohms. Voltage Gain, 50 approx.	—	—	—	—	—	—	—	—	—	1S5
1T4	Super-Control RF Amplifier Pentode	B0	D.C. F	1.4	0.05	Class A Amplifier	45 90	0	45 67.5	0.7 1.4	1.7 3.5	350000 500000	700 900	—	—	—	1T4
1T5-GT	Beam Power Amplifier	C4	D.C. F	1.4	0.05	Class A Amplifier	90	-6.0	90	0.8	6.5	—	1150	—	14000	0.17	1T5-GT
1T6	Diode-Pentode	A	F	1.25	0.04	Pentode Unit as Class A Amplifier	30 45 67.5	0	30 45 67.5	0.10 0.21 0.4	0.33 0.75 1.6	500000 500000 400000	330 475 600	—	—	—	1T6
1U4	RF Amplifier Pentode	B0	D.C. F	1.4	0.05	Class A Amplifier	90	0	90	0.50	1.0	1.0 $\Omega$	900	—	—	—	1U4
1U5	Diode-Pentode	B0	D.C. F	1.4	0.05	Pentode Unit as Class A Amplifier	Plate Supply, 90 volts applied through 1 meg. resistor. Grid Bias, 0 volts. Grid Resistor, 10 megohms. Voltage Gain, 66 approx.	—	—	—	—	—	—	—	—	—	1U5
1-v	Half-Wave Rectifier	D6	H	6.3	0.3	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 325 Max. D-C Output Ma., 45	—	—	—	—	—	Min. Total Effective Plate-Supply Impedance: Up to 117 volts, 0 ohms; at 150 volts, 30 ohms; at 325 volts, 75 ohms.	—	—	—	1-v
1V2	Half-Wave Rectifier	B0a	F	0.625	0.3	Pulsed Rectifier	Max. Peak Inverse Plate Volts, 7500 Max. Peak Plate Ma., 10	—	—	—	—	—	Max. Average Plate Ma., 0.5	—	—	—	1V2
1X2	Half-Wave Rectifier	B4	F	1.25	0.2	Half-Wave Rectifier	Max. Peak Inverse Plate Volts, 15000 Max. Peak Plate Ma., 10	—	—	—	—	—	Max. Average Plate Ma., 1 Max. Frequency of Supply Voltage, 300Kc	—	—	—	1X2
2A3	Power Amplifier Triode	E3	F	2.5	2.5	Class A Amplifier Push-Pull Class AB <sub>1</sub> Amplifier	250 300 300	-45.0	—	—	60.0	800	5250	4.2	2500 5000 3000	3.5 10.0 $\Omega$ 15.0 $\Omega$	2A3
2A4-G	Glow-Discharge Triode	D3	D.C. F	2.5	-2.5	Relay Service	Max. Peak Inverse Anode Volts, 200 Max. Peak Forward Anode Volts, 200	—	—	—	—	—	—	—	Max. Peak Anode Current, 1.25 ampere Max. Av. Anode Current, 0.1 ampere	—	2A4-G
2A5	Power Amplifier Pentode	D12	H	2.5	1.75	Amplifier	—	—	—	—	—	—	—	For other characteristics, refer to Type 6F6-G.	—	2A5	
2A6	Duplex-Diode High-Mu Triode	D6	H	2.5	0.8	Triode Unit as Amplifier	—	—	—	—	—	—	—	For other characteristics, refer to Type 6SQ7.	—	2A6	
2A7	Pentagrid Converter	D6	H	2.5	0.8	Converter	—	—	—	—	—	—	—	For other characteristics, refer to Type 6A8.	—	2A7	
2B7	Duplex-Diode Pentode	D6	H	2.5	0.8	Pentode Unit as Amplifier	—	—	—	—	—	—	—	For other characteristics, refer to Type 6B8-G.	—	2B7	
2E5	Electron-Ray Tube	D6	H	2.5	0.8	Visual Indicator	—	—	—	—	—	—	—	For other characteristics, refer to Type 6E5.	—	2E5	
3A8-GT	Diode-Triode RF Amplifier Pentode	C6	D.C. F	1.4 2.8	0.1 0.05	Triode Unit as Class A Amplifier Pentode Unit as Class A Amplifier	90 90	0	—	—	0.2	200000	325	65	—	—	3A8-GT
3KP4	Directly Viewed Kinescope	G1a	H	6.3	0.6	Picture Reproduction	Focus: Electrostatic Deflection: Electrostatic Phosphor: No. 4 Picture Size: 1 $\frac{1}{8}$ " x 2 $\frac{1}{2}$ " Deflection Factors: DJ <sub>1</sub> and DJ <sub>2</sub> (nearer screen), 100 to 136 vdc/in./kv; DJ <sub>3</sub> and DJ <sub>4</sub> (nearer base), 76 to 104 vdc/in./kv.	—	—	—	—	—	—	—	Anode No. 2 and Grid No. 2 Volts, 2500 max. Anode No. 1 Volts for Focus, 320 to 600 (1000 max.) Anode No. 1 Current Range, -15 to +10 microamperes Grid No. 1 Volts for Visual Cutoff, -38 to -90	—	3KP4

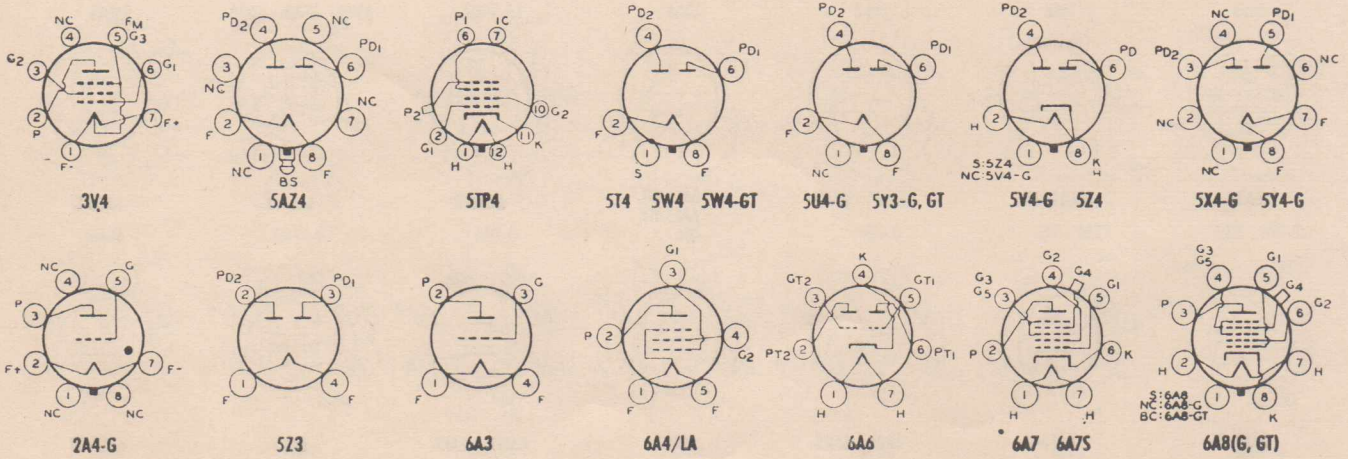
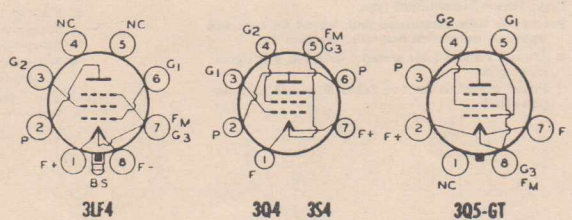
For footnotes, see following page



Type	Name	Tube Dimensions	Cathode Type and Rating			Use <small>Values to right give operating conditions and characteristics for indicated typical use</small>	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
3LF4	Beam Power Amplifier	B5	D.C. F	1.4 2.8	0.1 0.05	Class A Amplifier											3LF4
3Q4	Power Amplifier Pentode	B0	D.C. F	1.4 2.8	0.1 0.05	Class A Amplifier											3Q4
3Q5-GT	Beam Power Amplifier	C3	D.C. F	1.4 2.8	0.1 0.05	Class A Amplifier											3Q5-GT
3S4	Power Amplifier Pentode	B0	D.C. F	1.4 2.8	0.1 0.05	Class A Amplifier											3S4
3V4	Power Amplifier Pentode	B0	D.C. F	1.4 2.8	0.1 0.05	Class A Amplifier											3V4
5A2A	Full-Wave Rectifier	C2a	F	5.0	2.0	For ratings and characteristics, refer to Type 5Y3-GT.											5A2A
5T4	Full-Wave Rectifier	D7	F	5.0	2.0	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 450; Max. Peak Inverse Volts, 1550; With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 550; Max. Peak Inverse Volts, 1550											5T4
5TP4	Projection Kinescope	H1	H	6.3	0.6	Picture Reproduction With Reflective Optical System											5TP4
5U4-G	Full-Wave Rectifier	E2	F	5.0	3.0	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 450; Max. Peak Inverse Volts, 1550; With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 550; Max. Peak Inverse Volts, 1550											5U4-G
5V4-G	Full-Wave Rectifier	D10	H	5.0	2.0	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 375; Max. Peak Inverse Volts, 1400; With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 500; Max. Peak Inverse Volts, 1400											5V4-G
5W4	Full-Wave Rectifiers	C2	F	5.0	1.5	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 350; Max. Peak Inverse Volts, 1400; With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 500; Max. Peak Inverse Volts, 1400											5W4
5W4-GT	Full-Wave Rectifiers	C5	F	5.0	1.5	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 350; Max. Peak Inverse Volts, 1400; With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 500; Max. Peak Inverse Volts, 1400											5W4-GT
5X4-G	Full-Wave Rectifier	E2	F	5.0	3.0	For other ratings, refer to Type 5U4-G.											5X4-G
5Y3-G	Full-Wave Rectifiers	C5	F	5.0	2.0	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 350; Max. Peak Inverse Volts, 1400; With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 500; Max. Peak Inverse Volts, 1400											5Y3-G
5Y3-GT	Full-Wave Rectifiers	C5	F	5.0	2.0	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 350; Max. Peak Inverse Volts, 1400; With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 500; Max. Peak Inverse Volts, 1400											5Y3-GT
5Y4-G	Full-Wave Rectifier	D10	F	5.0	2.0	For other ratings, refer to Type 5Y3-GT.											5Y4-G
5Z3	Full-Wave Rectifier	E3	F	5.0	3.0	For other ratings, refer to Type 5U4-G.											5Z3
5Z4	Full-Wave Rectifier	C2	H	5.0	2.0	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 350; Max. Peak Inverse Volts, 1400; With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 500; Max. Peak Inverse Volts, 1400											5Z4
6A3	Power Amplifier Triode	E3	F	6.3	1.0	Amplifier											6A3
6A4/LA	Power Amplifier Pentode	D12	F	6.3	0.3	Class A Amplifier											6A4/LA
6A6	Twin-Triode Amplifier	D12	H	6.3	0.8	Amplifier											6A6
6A7	Pentagrid Converter	D8	H	6.3	0.3	Converter											6A7
6A7S	Pentagrid Converter	D8	H	6.3	0.3	Converter											6A7S
6A8	Pentagrid Converters	C1	H	6.3	0.3	Converter											6A8
6A8-G	Pentagrid Converters	D8	H	6.3	0.3	Converter											6A8-G
6A8-GT	Pentagrid Converters	C3	H	6.3	0.3	Converter											6A8-GT

Four vertical lines before or after type No. = Subminiature type.  
 Three vertical lines before or after type No. = Miniature type having either 7 or 9 pins.  
 Two vertical lines before or after type No. = Metal type.  
 One vertical line before or after type No. = GT or other larger glass type.  
 Light Face = Discontinued type.  
 For key to tube dimensions and legend for base and envelope connection diagrams, see page 23.  
 a Grids #3 and #5 are screen. Grid #4 is signal-input grid.  
 † Power output is for two tubes at stated plate-to-plate load.

▲ Grids #2 and #4 are screen. Grid #3 is signal-input control grid.  
**Note 1:** Subscript 1 on class of amplifier service (as AB<sub>1</sub>) indicates that grid current does not flow during any part of input cycle.  
 † For two tubes.  
 ‡ Supply voltage applied through 20000-ohm voltage-dropping resistor.  
 § 50000 ohms.  
 ¶ Megohms.  
 ■ Either ac or dc may be used on filament or heater, except as specifically noted. For use of dc on ac filament types, decrease stated grid volts by 1/2 (approx.) of filament voltage.



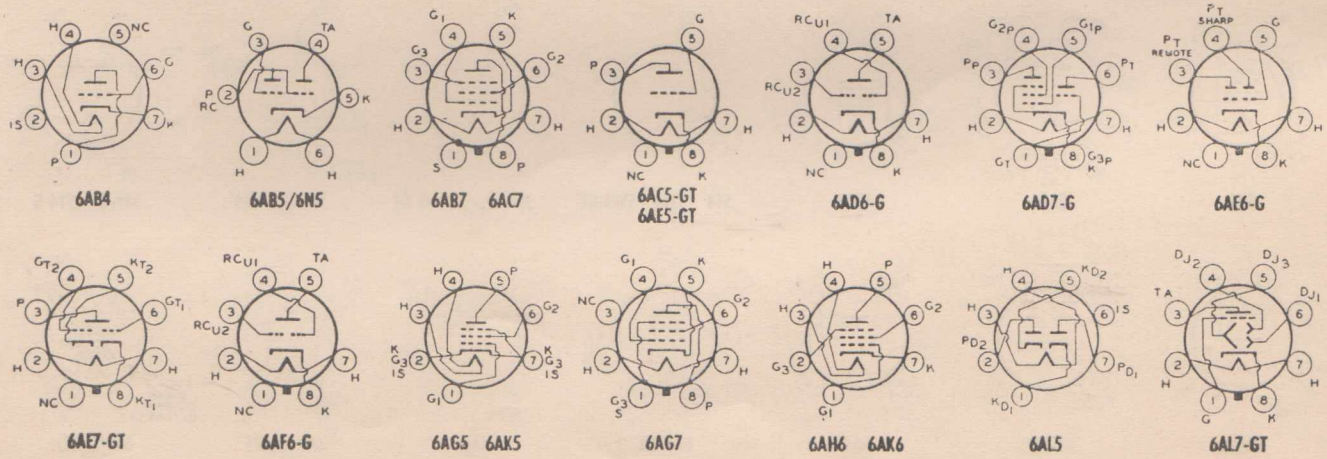
# 6AB4 to 6AL7-GT

Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
6AB4	RF Amplifier Triode	B0	H	6.3	0.15	Class A Amplifier	100 250	- 1 - 2			3.7 10.0	4000 5500	54 55				6AB4
6AB5/6N5	Electron-Ray Tube	D4	H	6.3	0.15	Visual Indicator											6AB5/6N5
6AB7	Remote-Cutoff Pentode	B2	F	6.3	0.45	Class A Amplifier	300	- 3.0	200	3.2	12.5	700000	5000				6AB7
6AC5-GT	High-Mu Power Amplifier Triode	C3	H	6.3	0.4	Class B Amplifier Dynamic-Coupled Amplifier With 76 Driver	250	0			5.0			10000	8.0		6AC5-GT
6AC7	Sharp-Cutoff Pentode	B2	H	6.3	0.45	Class A Amplifier	300	Cath. Bias	150	2.5	10.0	1.0	9000				6AC7
6AD6-G	Electron-Ray Tube Twin Indicator Type	B5a	H	6.3	0.15	Visual Indicator											6AD6-G
6AD7-G	Triode-Power Amplifier Pentode	D10	H	6.3	0.85	Triode Unit as Class A Amplifier	250	-25.0			3.7	19000	325	6			6AD7-G
						Pentode Unit as Class A Amplifier	250	-16.5	250	6.5	34.0	80000	2500		7000	3.2	
						Pentode Unit With 6F6-G as Push-Pull Class AB <sub>1</sub> Amplifier	375	Cath. Bias	250	6.7	41.0			Cathode-Bias Resistor, 470 ohms	16000	9.0	
6AE5-GT	Amplifier Triode	C3	H	6.3	0.3	Class A Amplifier	95	-15.0			7.0	3500	1200	4.2			6AE5-GT
6AE6-G	Twin-Plate Control Tube	D3	H	6.3	0.15	Remote Cutoff Triode	250	- 1.5			6.5	25000	1000	25			6AE6-G
						Remote Cutoff Triode	250	- 1.5			4.5	35000	950	33			
6AE7-GT	Twin-Input Triode Amplifier	C3	H	6.3	0.5	Class A Amp Driver For Push-Pull 6AC5-GT In Dynamic-Coupled Amplifier	250	-13.5			10.0	4650	3000	14			6AE7-GT
6AF6-G	Electron-Ray Tube Twin Indicator Type	B0c	H	6.3	0.15	Visual Indicator											6AF6-G
6AG5	Sharp-Cutoff Pentode	B0	H	6.3	0.3	As Pentode Class A Amplifier	100	Cath. Bias	100	1.5	4.5	700000	4250	Cath. Bias Res., 180 ohms			6AG5
						As Triode Class A Amplifier	180	Cath. Bias			7.0	7900	5700	Cath. Bias Res., 350 ohms			
						As Class A Amplifier	250	Cath. Bias			5.5	11000	3800	Cath. Bias Res., 825 ohms			
6AG7	Video Power Amplifier Pentode	C2	H	6.3	0.65	Class A Amplifier	300	Cath. Bias - 2.0	125	7.0	28.0						6AG7
6AH6	Sharp-Cutoff Pentode	B0	H	6.3	0.45	Class A Amplifier	300	Cath. Bias	150	2.5	10.0	500000	9000	Cath. Res., 160 ohms			6AH6
6AK5	Sharp-Cutoff Pentode	A1	H	6.3	0.175	Class A Amplifier	120	Cath. Bias	120	2.5	7.5	340000	5000	Cath. Res., 200 ohms			6AK5
6AK6	Power Amplifier Pentode	B0	H	6.3	0.15	Class A Amplifier	180	- 9.0	180	2.5	15	200000	2300		10000	1.1	6AK6
6AL5	Twin Diode	A1	H	6.3	0.3	Detector Rectifier											6AL5
6AL7-GT	Electron-Ray Tube Indicator Type	C0a	H	6.3	0.15	Visual Indicator											6AL7-GT

Three vertical rules before or after type No. = Miniature type having either 7 or 9 pins.  
 Two vertical rules before or after type No. = Metal type.  
 One vertical rule before or after type No. = GT or other larger glass type.  
 Light Face = Discontinued type.  
 For key to tube dimensions and legend for base and envelope connection diagrams, see page 23.  
 ■ Grids #3 and #5 are screen. Grid No. 4 is signal-input grid.  
 † Power output is for two tubes at stated plate-to-plate load.

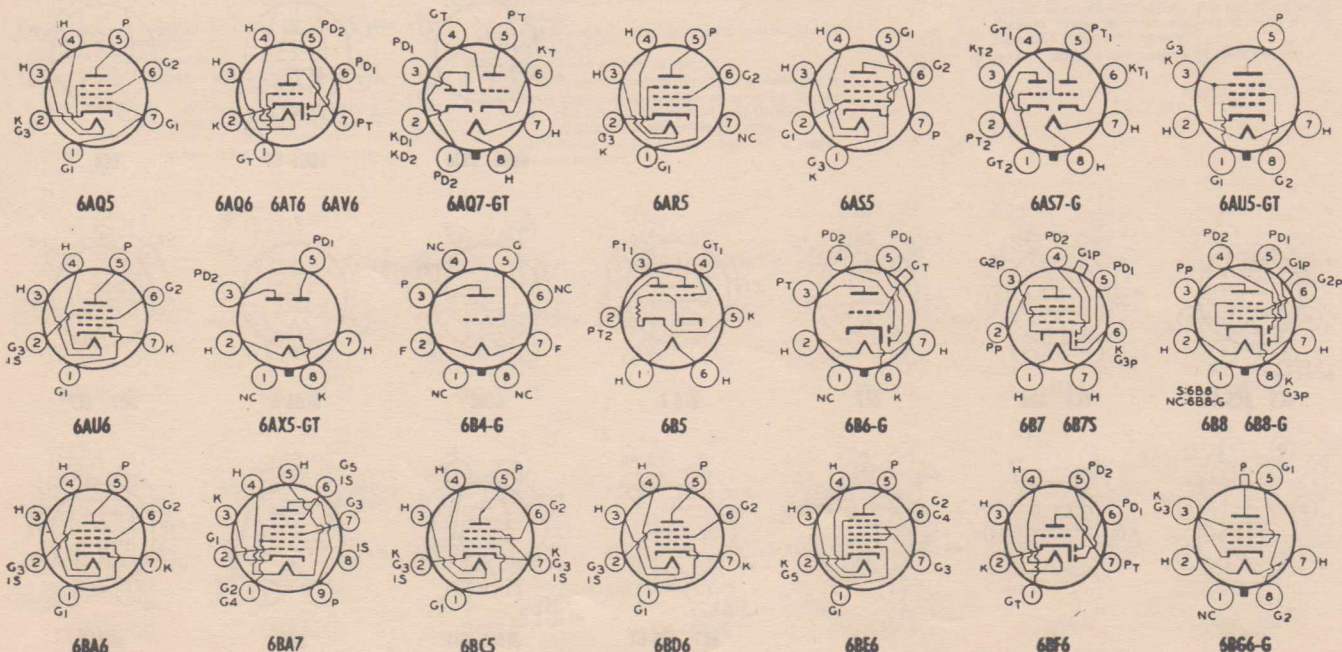
▲ Grids #2 and #4 are screen. Grid #3 is signal-input control grid.  
 Note 1: Subscript 1 on class of amplifier service (as AB<sub>1</sub>) indicates that grid current does not flow during any part of input cycle.  
 □ Grid #2 tied to plate.  
 ♦ For two tubes.  
 † Supply voltage applied through 20000-ohm voltage-dropping resistor.  
 § 50000 ohms.  
 ‡ Megohms.  
 †† Both grids connected together, likewise both cathodes.

\*\* For grid of following tube.  
 ■ Applied through plate resistor of 250000 ohms.  
 ■ Either ac or dc may be used on filament or heater, except as specifically noted. For use of dc on ac filament types, decrease stated grid volts by 1/2 (approx.) of filament voltage.  
 ▼ Applied through plate resistor of 100000 ohms.  
 • With tube mounted horizontally and pins No. 4 and No. 8 in a vertical plane (pin 4 on top), deflecting electrode No. 1 controls left-hand section of pattern, deflecting electrode No. 2 controls top right-hand section of pattern, deflecting electrode No. 3 controls bottom section of pattern.



Type	Name	Tube Dimensions	Cathode Type and Rating		Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts												
6AQ5	Beam Power Amplifier	B1	H	6.3	0.45	180	- 8.5	180	3.0	29.0	58000	3700	—	5500	2.0	6AQ5
						250	-12.5	250	4.5	45.0	52000	4100	—	10000	4.5	
6AQ6	Duplex-Diode High-Mu Triode	B0	H	6.3	0.15	100	- 1.0	—	—	0.8	61000	1150	70	—	—	6AQ6
						250	- 3.0	—	—	1.0	58000	1200	70	—	—	
6AQ7-GT	Twin-Diode High-Mu Triode	C2b	H	6.3	0.3	250	- 2	—	—	2.3	44000	1600	70	—	6AQ7-GT	
6AR5	Power Pentode	B1	H	6.3	0.4	250	-16.5	250	10	34.0	65000	2400	—	7000	3.2	6AR5
6AS5	Beam Power Amplifier	B1	H	6.3	0.8	150	- 8.5	110	2.0	35	—	5600	—	4500	2.2	6AS5
						250	-18	250	10	32.0	68000	2300	—	7600	3.4	
6AS7-G	Low-Mu Twin Power Triode	E2	H	6.3	2.5	135	—	Cath. Res., 250 ohms	—	125	280	7000	2.0	—	6AS7-G	
6AT6	Duplex-Diode High-Mu Triode	B0	H	6.3	0.3	100	- 1.0	—	—	0.8	54000	1300	70	—	—	6AT6
						250	- 3.0	—	—	1.0	58000	1200	70	—	—	
6AU5-GT	Beam Power Amplifier	C2b	H	6.3	1.25	Horizontal Deflection Amplifier in TV Equipment					Max. DC Plate Volts, 450; Max. DC Plate Ma., 100					6AU5-GT
6AU6	RF Amplifier Pentode	B0	H	6.3	0.3	100	Cath. Bias	100	2.1	5.0	50000	3900	Cath. Bias Res., 150 ohms	—	—	
6AV6	Twin-Diode High-Mu Triode	B0	H	6.3	0.3	100	- 1.0	—	—	0.5	80000	1250	100	—	—	6AV6
						250	- 2.0	—	—	1.2	62500	1600	100	—	—	
6AX5-GT	Full-Wave Rectifier	C2b	H	6.3	1.2	With Capacitive-Input Filter					Max. AC Volts per Plate (RMS), 450					6AX5-GT
6B4-G	Power Amplifier Triode	E2	F	6.3	1.0	250	- 45.0	—	—	60.0	800	5250	4.2	2500	3.20	
6B5	Direct-Coupled Power Amplifier	D12	H	6.3	0.8	325	Cath. Bias, 850 ohms	—	—	80.0	—	—	—	5000	10.0†	6B5
6B6-G	Duplex-Diode High-Mu Triode	D8	H	6.3	0.3	325	-68 volts, fixed bias	—	—	80.0	—	—	—	3000	15.0†	
6B7	Duplex-Diode Pentode	D8	H	6.3	0.3	Class A Amplifier										6B7
6B7S	Duplex-Diode Pentode	D9	H	6.3	0.3	Triode Unit as Amplifier										
6B8	Duplex-Diode Pentode	C1	H	6.3	0.3	Pentode Unit as Amplifier										6B8
6B8-G	Duplex-Diode Pentode	D8	H	6.3	0.3	100	- 3.0	100	1.7	5.8	300000	950	—	—	—	
						250	- 3.0	125	2.3	9.0	600000	1125	—	—	—	
6BA6	RF Amplifier Pentode	B0	H	6.3	0.3	100	Cath. Bias	100	4.4	10.8	250000	4300	Cath. Bias Res., 68 ohms	—	—	6BA6
250	- 3.0	100	4.2	11.0	1.0	4400	Cath. Bias Res., 68 ohms	—	—	—						
6BA7	Pentagrid Converter	D0a	H	6.3	0.3	100	- 1.0	100	10.2	3.6	500000	—	—	—	—	6BA7
250	- 1.0	100	10.0	3.8	1.0†	—	—	—	—	—						
6BC5	Sharp-Cutoff Pentode	B0	H	6.3	0.3	250	Cath. Bias	150	2.1	7.5	800000	5700	Cath. Bias Res., 180 ohms	—	—	6BC5
6BD6	Remote-Cutoff Pentode	B0	H	6.3	0.3	100	- 1	100	5.0	13.0	150000	2550	—	—	—	
250	- 3	100	3.0	9.0	800000	2000	—	—	—	—						
6BE6	Pentagrid Converter	B0	H	6.3	0.3	100	- 1.5	100	7.5	2.6	400000	—	—	—	—	6BE6
250	- 1.5	100	7.5	2.6	1.0†	—	—	—	—	—						
6BF6	Duplex-Diode Triode	B0	H	6.3	0.3	Triode Unit as Class A Amplifier										6BF6
For other characteristics, refer to Type 6SR7.																
6BG6-G	Beam Power Amplifier	F1	H	6.3	0.9	Horizontal Deflection Amplifier in TV Equipment					Max. DC Plate Volts, 700; Max. DC Plate Ma., 100					6BG6-G
Max. Peak Positive-Pulse Plate Volts, 6000; Max. Plate Dissipation, 20 watts																

For footnotes, see preceding page.





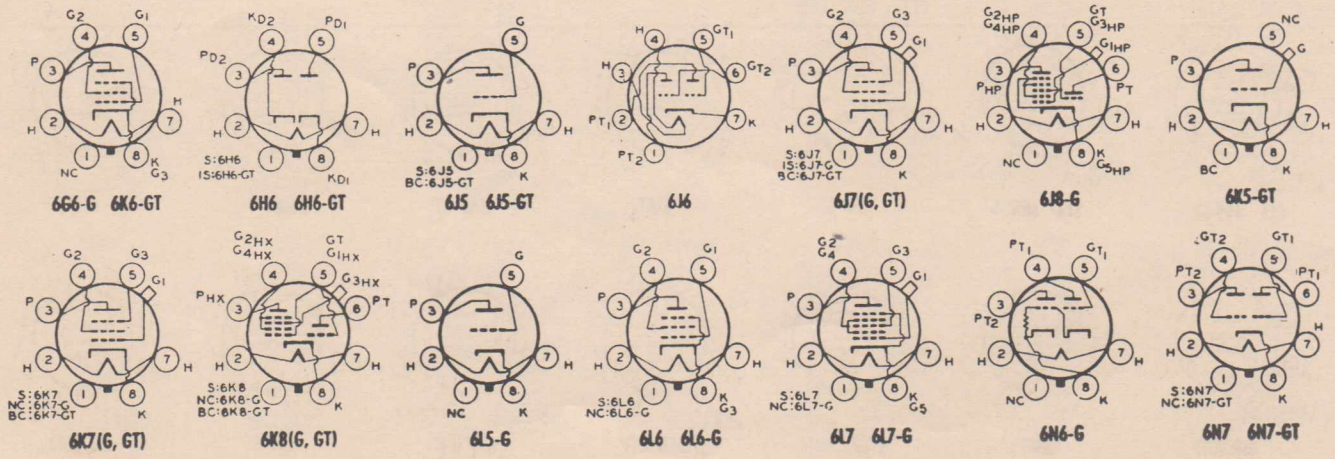


Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mbas	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type	
			C.T.	Volts	Amp.													
6G6-G	Power Amplifier Pentode	D3	H	6.3	0.15	Pentode Class A Amplifier Triode Class A Amplifier	135 180	- 6.0 - 9.0	135 180	2.0 2.5	11.5 15.0	170000 175000	2100 2300	—	12000 10000	0.6 1.1	6G6-G	
6H6 6H6-GT	Twin Diodes	A1a C3	H	6.3	0.3	Voltage Doubler Half-Wave Rectifier	Max. A.C. Supply Volts per Plate (RMS), 150 Total Effect. Plate-Supply Imped. per Plate: half-wave, 30 ohms; full-wave, 15 ohms. Max. D.C. Output Ma., 8. min. Min. Total Effective Plate-Supply Impedance: up to 117 volts, 15 ohms; at 150 volts, 40 ohms.										6H6 6H6-GT	
6J5 6J5-GT	Medium-Mu Triodes	B2 B3	H	6.3	0.3	Class A Amplifier	90 250	0 - 8.0	— —	— —	10.0 9.0	6700 7700	3000 2600	20 20	— —	— —	6J5 6J5-GT	
6J6	Medium-Mu Twin Triode	B0	H	6.3	0.45	Each Unit as Class A Amplifier Push-Pull Class C Amplifier	100 150	— -10.0	— Cath. Res. 220 ohms, both units	— 30.0	— —	8.5 —	7100 —	5300 —	38 —	— 3.5	6J6	
6J7 6J7-G 6J7-GT	Sharp-Cutoff Pentodes	C1 D8 C3	H	6.3	0.3	Pentode Class A RF Amplifier Pentode Class A AF Amplifier Pentode Bias Detector Triode Class A Amplifier	100 250 250 180	- 3.0 - 3.0 - 4.3 - 5.3	100 100 100 —	0.5 0.5 — —	2.0 2.0 — 5.3	1.05 1.0 + $\delta$ — 11000	1185 1225 — 1800	— — — 20	— — — 20	— — — —	6J7 6J7-G 6J7-GT	
6J8-G	Triode-Heptode Converter	D8	H	6.3	0.3	Triode Unit as Oscillator Heptode Unit as Mixer	100 250	— - 3.0	100 100	3.0 2.9	1.4 1.3	900000 4.05	— —	— —	— —	— —	6J8-G	
6K5-GT	High-Mu Triode	C3	H	6.3	0.3	Class A Amplifier	100 250	- 1.5 - 3.0	— —	— —	0.35 1.1	7800 5000	900 1400	70 70	— —	— —	6K5-GT	
6K6-GT	Power Amplifier Pentode	C3	H	6.3	0.4	Single-Tube Class A Amplifier Push-Pull Class A Amplifier	100 250 315	- 7.0 - 18.0 - 21.0	100 250 250	1.6 5.3 4.0	9.0 32.0 25.5	104000 9000 110000	1500 2300 2100	— — —	— — —	12000 3.40 9000	0.35 3.40 4.50	6K6-GT
6K7 6K7-G 6K7-GT	Remote-Cutoff Pentodes	C1 D8 C3	H	6.3	0.3	Class A Amplifier Mixer in Superheterodyne	100 250 250	- 1.0 - 3.0 - 10.0	100 125 100	2.7 2.6 —	9.5 10.5 —	150000 600000 —	1650 1650 —	— — —	— — —	— — —	6K7 6K7-G 6K7-GT	
6K8 6K8-G 6K8-GT	Triode-Hexode Converters	C1 D8 C10	H	6.3	0.3	Triode Unit as Oscillator Hexode Unit as Mixer	100 100 250	— - 3.0 - 3.0	100 100 100	6.2 6.0 2.3	2.5 2.5 —	400000 600000 —	Conversion Transcond., 325 micromhos. Conversion Transcond., 350 micromhos.	— — —	— — —	— — —	6K8 6K8-G 6K8-GT	
6L5-G	Medium-Mu Triode	D3	H	6.3	0.15	Class A Amplifier	135 250	- 5.0 - 9.0	— —	— —	3.5 8.0	11300 9000	1500 1900	17 17	— —	— —	6L5-G	
6L6 6L6-G	Beam Power Amplifiers	D7 E2	H	6.3	0.9	Single-Tube Class A Amplifier Push-Pull Class A Amplifier Push-Pull Class AB <sub>1</sub> Amplifier Push-Pull Class AB <sub>2</sub> Amplifier	250 270 360 360	- 14.0 - 17.5 Cath. Bias - 22.5	250 270 270 225	5.0 5.4 11.0 5.0	72.0 75.0 134.0 88.0	— — Cath. Bias Resistor, 170 ohms. Cath. Bias Resistor, 125 ohms.	— — — —	— — — —	— — — —	2500 5000 6600 9000	6.5 6.5 17.5† 24.5†	6L6 6L6-G
6L7 6L7-G	Pentagrid Mixers	C1 D8	H	6.3	0.3	Mixer in Superheterodyne Class A Amplifier	250 250	- 3.0 - 3.0	100 100	7.1 6.5	2.4 5.3	600000 1100	— —	— —	— —	— —	6L7 6L7-G	
6N6-G	Direct-Coupled Power Triode	D10	H	6.3	0.8	Class A Amplifier	—	—	—	—	—	—	—	—	—	—	6N6-G	
6N7 6N7-GT	High-Mu Twin Power Triodes	C2 C3	H	6.3	0.8	Class A Amplifier (as Driver) Class B Amplifier	250 294 300	- 5.0 - 6.0 0	— — —	— — —	— — —	6.0 7.0 —	11300 11000 —	3100 3200 —	35 35 —	20000 or more	exceeds 0.4	6N7 6N7-GT

Three vertical lines before or after type No. = Miniature type having either 7 or 9 pins.  
Two vertical lines before or after type No. = Metal type.  
One vertical line before or after type No. = GT or other larger glass type.  
Light Face = Discontinued type.  
For key to tube dimensions and, legend for base and envelope connection diagrams, see page 23.  
Note 1: Subscript 1 on class of amplifier service (as AB<sub>1</sub>) indicates that grid current does not flow during any part of input cycle.  
† Power output is for two tubes at stated plate-to-plate load.

- Grid # 2 tied to plate.
- ◆ For two tubes.
- ⚡ Supply voltage applied through 20000-ohm voltage- $\mu$ megohms.
- ⚡ For signal-input control-grid (#1); control-grid #3 bias, -3 volts.
- ✦ Grids #2 and #3 tied to plate.
- Both grids connected together; likewise, both plates.
- Note 2: Subscript 2 on class of amplifier service (as AB<sub>2</sub>) indicates that grid current flows during some part of input cycle.
- ▲ Grids #2 and #4 are screen. Grid #1 is signal-input control grid.

- \*\* For grid of following tube.
- Ⓜ Applied through plate resistor of 250000 ohms.
- Either ac or dc may be used on filament or heater, except as specifically noted. For use of dc on ac filament types, decrease stated grid volts by 1/2 (approx.) of filament voltage.
- ♥ Applied through plate resistor of 100000 ohms.



# 6P5-GT to 6SQ7-GT

Type	Name	Tube Dimensions	Cathode Type and Rating			Use <small>Values to right give operating conditions and characteristics for indicated typical use</small>	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma	Plate Current Ma	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
6P5-GT	Medium-Mu Triode	C3	H	6.3	0.3	For other characteristics, refer to Type 76.										6P5-GT	
6P7-G	Triode-Pentode	D8	H	6.3	0.3	For other characteristics, refer to Type 6F7.										6P7-G	
6Q7 6Q7-G 6Q7-GT	Twin-Diode High-Mu Triodes	C1 D8 C3	H	6.3	0.3	Triode Unit as Class A Amplifier	100 250 300	- 1.0 - 3.0	—	—	0.8 8.5	58000 58000	1200 1200	70 70	—	—	6Q7 6Q7-G 6Q7-GT
6R7 6R7-G 6R7-GT	Twin-Diode Medium-Mu Triodes	C1 D8 C2b	H	6.3	0.3	Triode Unit as Class A Amplifier	250 300	- 9.0	—	—	9.5	8500	1900	16	—	—	6R7 6R7-G 6R7-GT
6S4	Medium-Mu Triode	B3	H	6.3	0.6	Vertical Deflection Amplifier in TV Equipment	Max. DC Plate Volts, 500 Max. DC Cathode Ma., 30 Max. Peak Positive-Pulse Plate Volts, 2000 Max. Plate Dissipation, 7.5 watts										6S4
6S7 6S7-G	Remote-Cutoff Pentodes	C1 D8	H	6.3	0.15	Class A Amplifier	135 250	- 3.0 - 3.0	67.5 100	0.9 2.0	3.7 8.5	1.0 $\S$ 1.0 $\S$	1250 1750	—	—	—	6S7 6S7-G
6S8-GT	Triple-Diode Triode	C9b	H	6.3	0.3	Triode Unit as Class A Amplifier	100 250	- 1.0 - 2.0	—	—	0.4 0.9	110000 91000	900 1100	100 100	—	—	6S8-GT
6SA7	Pentagrid Converter	B2	H	6.3	0.3	Mixer	100 250	Self-Excited	100 100	8.5 8.5	3.3 3.5	500000 1.0 $\S$	Grid #1 Resistor, 20000 ohms. Conversion Transcond., 450 micromhos.			6SA7	
6SA7-GT	Pentagrid Converter	C3	H	6.3	0.3	Mixer	For other characteristics, refer to Type 6SA7.										6SA7-GT
6SB7-Y	Pentagrid Converter	B2	H	6.3	0.3	Mixer	100 250	- 1.0 - 1.0	100 100	10.2 10.0	3.6 3.8	500000 1.0 $\S$	Grid #1 Resistor, 20000 ohms Conversion Transcond., 950 micromhos			6SB7-Y	
6SC7	Twin-Triode Amplifier	B2	H	6.3	0.3	Each Unit as Amplifier	250	- 2.0	—	—	2.0	53000	1325	70	—	—	6SC7
6SF5 6SF5-GT	High-Mu Triodes	B2 C3	H	6.3	0.3	Class A Amplifier	100 250 300	- 1.0 - 2.0	—	—	0.4 0.9	85000 66000	1150 1500	100 100	—	—	6SF5 6SF5-GT
6SF7	Diode-Remote-Cutoff Pentode	B2	H	6.3	0.3	Pentode Unit as Class A Amplifier	100 250	- 1.0 - 1.0	100 100	4.3 4.1	13.5 13.9	200000 700000	1975 2050	—	—	—	6SF7
6SG7	Remote-Cutoff Pentode	B2	H	6.3	0.3	Class A Amplifier	100 250 250	- 1.0 - 1.0 - 2.5	100 125 150	3.2 4.4 3.4	8.2 11.6 9.2	250000 900000 1.0 + $\S$	4100 4700 4000	—	—	—	6SG7
6SH7	Sharp-Cutoff Pentode	B2	H	6.3	0.3	Class A Amplifier	100 250	- 1.0 - 1.0	100 150	2.1 4.1	5.3 10.8	350000 900000	4000 4900	—	—	—	6SH7
6SJ7 6SJ7-GT	Sharp-Cutoff Pentodes	B2 C3	H	6.3	0.3	Class A Amplifier	100 250 300	- 3.0 - 3.0	100 100 860	0.9 0.8	2.9 3.0	700000 1.0 + $\S$	1575 1650	—	—	—	6SJ7 6SJ7-GT
6SK7 6SK7-GT	Remote-Cutoff Pentodes	B2 C3	H	6.3	0.3	Class A Amplifier	100 250	- 1.0 - 3.0	100 100	4.0 2.6	13.0 9.2	120000 800000	2350 2000	—	—	—	6SK7 6SK7-GT
6SL7-GT	Twin-Triode Amplifier	C3	H	6.3	0.3	Each Unit as Amplifier	250	- 2.0	—	—	2.3	44000	1600	70	—	—	6SL7-GT
6SN7-GT	Twin-Triode Amplifier	C3	H	6.3	0.6	Each Unit as Amplifier	For other characteristics, refer to Type 6J5.										6SN7-GT
6SQ7 6SQ7-GT	Twin-Diode High-Mu Triodes	B2 C3	H	6.3	0.3	Triode Unit as Class A Amplifier	100 250 300	- 1.0 - 2.0	—	—	0.5 1.1	110000 85000	925 1175	100 100	—	—	6SQ7 6SQ7-GT

Three vertical rules before or after type No. = Miniature type having either 7 or 9 pins.  
Two vertical rules before or after type No. = Metal type.  
One vertical rule before or after type No. = GT or other larger glass type.  
Light Face = Diaconized type.

For key to tube dimensions and, legend for base and envelope connection diagrams, see page 23.  
† Power output is for two tubes at stated plate-to-plate load.

▲ Grids #2 and #4 are screen. Grid #3 is signal-input control grid.

Note 1: Subscript 1 on class of amplifier service (as AB<sub>1</sub>) indicates that grid current does not flow during any part of input cycle.

◆ For two tubes.

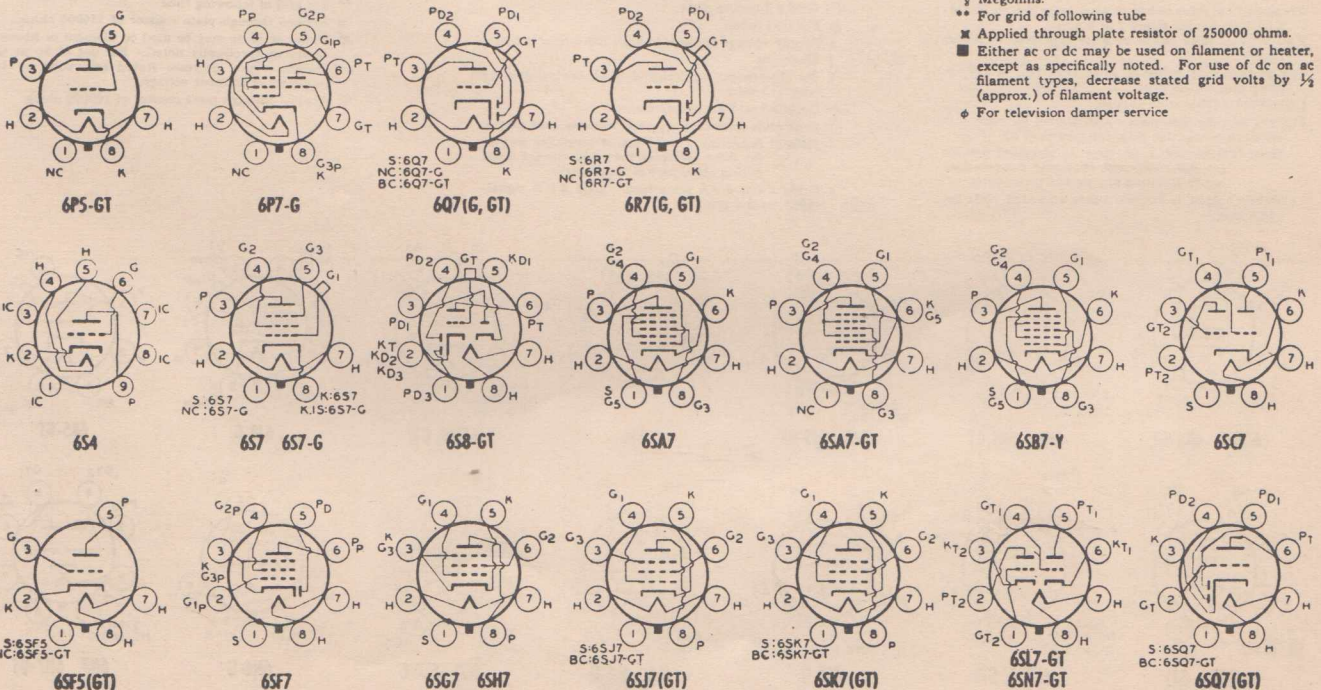
§ Megohms.

\*\* For grid of following tube

■ Applied through plate resistor of 250000 ohms.

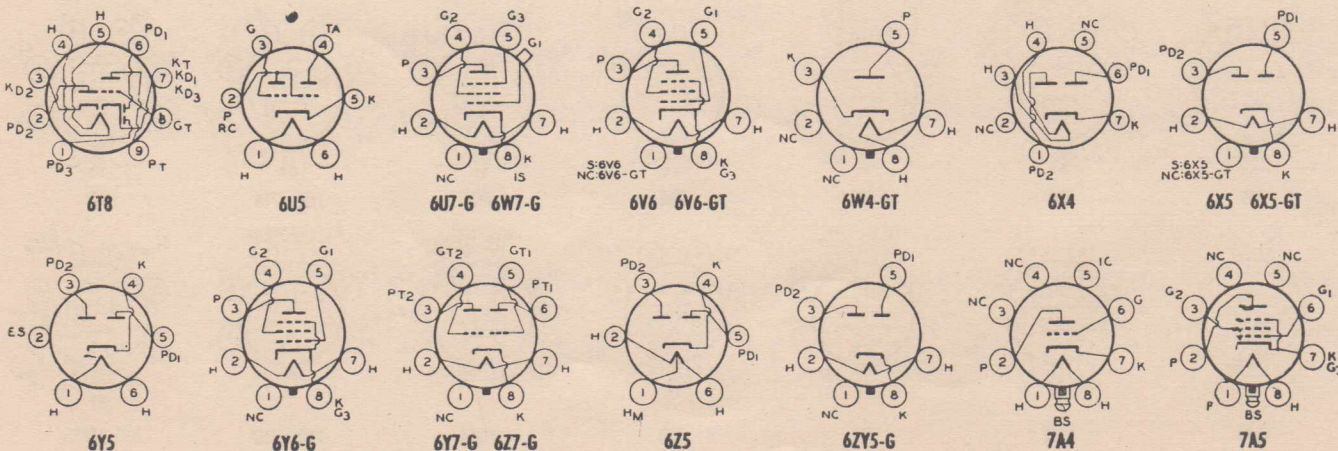
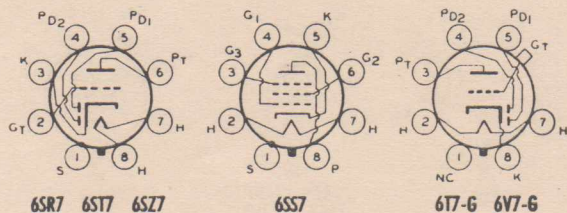
■ Either ac or dc may be used on filament or heater, except as specifically noted. For use of dc on ac filament types, decrease stated grid volts by 1/2 (approx.) of filament voltage.

◆ For television damper service



Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
6SR7	Duplex-Diode Triode	B2	H	6.3	0.3	250	- 9.0	—	—	9.5	8500	1900	16	10000	0.3	6SR7	
6SS7	Remote-Cutoff Pentode	B2	H	6.3	0.15	100 250	- 1.0 - 3.0	100 100	3.1 2.0	12.2 9.0	120000 1.0 $\Omega$	1930 1850	—	—	—	6SS7	
6ST7	Duplex-Diode Triode	B2	H	6.3	0.15	For other characteristics, refer to Type 6SR7.										6ST7	
6SZ7	Duplex-Diode High-Mu Triode	B2	H	6.3	0.15	100 250	- 1.0 - 3.0	—	—	0.8 1.0	61000 58000	1150 1200	70 70	—	—	6SZ7	
6T7-G	Duplex-Diode High-Mu Triode	D8	H	6.3	0.15	135 250	- 1.5 - 3.0	—	—	0.9 1.2	65000 62000	1000 1050	65 65	—	—	6T7-G	
6T8	Triple-Diode High-Class Triode	B0a	H	6.3	0.45	100 250	- 1 - 3	—	—	0.8 1.0	54000 58000	1300 1200	70 70	—	—	6T8	
6U5	Electron-Ray Tube	D4	H	6.3	0.3	Plate & Target Supply = 125 volts, Triode Plate Resistor = 0.5 meg. Target Current = 1.0 ma. Grid Bias, -8 volts; Shadow Angle, 0°. Bias, 0 volts; Angle, 90°; Plate Current, 0.19 ma. Plate & Target Supply = 250 volts, Triode Plate Resistor = 1.0 meg. Target Current = 4.0 ma. Grid Bias, -22 volts; Shadow Angle, 0°. Bias, 0 volts; Angle, 90°; Plate Current, 0.24 ma.										6U5	
6U7-G	Remote-Cutoff Pentode	D12a	H	6.3	0.3	100 250	- 3.0 - 3.0	100 100	2.2 2.0	8.0 8.2	250000 800000	1500 1600	—	—	—	6U7-G	
6V6	Beam Power Amplifiers	C2	H	6.3	0.45	180	- 8.5	180	3.0	29.0	58000	3700	—	5500	2.0	6V6	
6V6-GT		C3				250	- 12.5	250	4.5	45.0	52000	4100	—	5000	4.5		6V6-GT
6V7-G	Duplex-Diode Triode	D8	H	6.3	0.3	For other characteristics, refer to Type 85.										6V7-G	
6W4-GT	Half-Wave Rectifier	C2a	H	6.3	1.2	Max. A-C Plate Volts (RMS), 350 Max. Peak Inverse Volts 3500 $\Phi$ , 1250 Max. D-C Output Ma., 100 Max. Peak Plate Ma., 600 Min. Total Effect. Supply Imped. per Plate, 145 ohms.										6W4-GT	
6W7-G	Sharp-Cutoff Pentode	D8	H	6.3	0.15	250	- 3.0	100	0.5	2.0	1.5 $\Omega$	1225	—	—	6W7-G		
6X4	Full-Wave Rectifier	B3	H	6.3	0.6	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 325 Max. Peak Inverse Volts, 1250 Max. D-C Output Ma., 70 Max. Peak Plate Ma., 210 Min. Total Effect. Supply Imped. per Plate, 150 ohms										6X4	
6X5	Full-Wave Rectifiers	C2	H	6.3	0.6	With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1250 Max. D-C Output Ma., 70 Max. Peak Plate Ma., 210 Min. Value of Input Choke, 8 henries										6X5	
6X5-GT		C3				With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 325 Max. Peak Inverse Volts, 1250 Max. D-C Output Ma., 70 Max. Peak Plate Ma., 210 Min. Total Effect. Supply Imped. per Plate, 150 ohms											
6Y5	Full-Wave Rectifier	D5	H	6.3	0.8	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 350 Max. D-C Output Ma., 50										6Y5	
6Y6-G	Beam Power Amplifier	D10	H	6.3	1.25	135 200	-13.5 -14.0	135 135	3.5 2.2	58.0 61.0	9300 18300	7000 7100	—	2000 2600	3.6 6.0	6Y6-G	
6Y7-G	Twin-Triode Amplifier	D3	H	6.3	0.6	For other characteristics, refer to Type 79.										6Y7-G	
6Z5	Full-Wave Rectifier	D5	H	6.3	0.8 12.6	0.4	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 230 Max. D-C Output Ma., 60										6Z5
6Z7-G	Twin-Triode Amplifier	D3	H	6.3	0.3	135 180	0	—	—	Power Output is for one tube at stated plate-to-plate load.			9000 12000	2.5 4.2	6Z7-G		
6ZY5-G	Full-Wave Rectifier	D3	H	6.3	0.3	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 325 Max. Peak Inverse Volts, 1250 Max. D-C Output Ma., 40 Max. Peak Plate Ma., 120 Min. Total Effect. Supply Imped. per Plate, 225 ohms										6ZY5-G	
7A4	Medium-Mu Triode	B5	H	6.3	0.3	For other characteristics, refer to Type 6J5.										7A4	
7A5	Beam Power Amplifier	C2a	H	6.3	0.75	110 125	- 7.5 - 9.0	110 125	3.0 3.3	40.0 44.0	16000 17000	5800 6000	—	2500 2700	1.5 2.2	7A5	

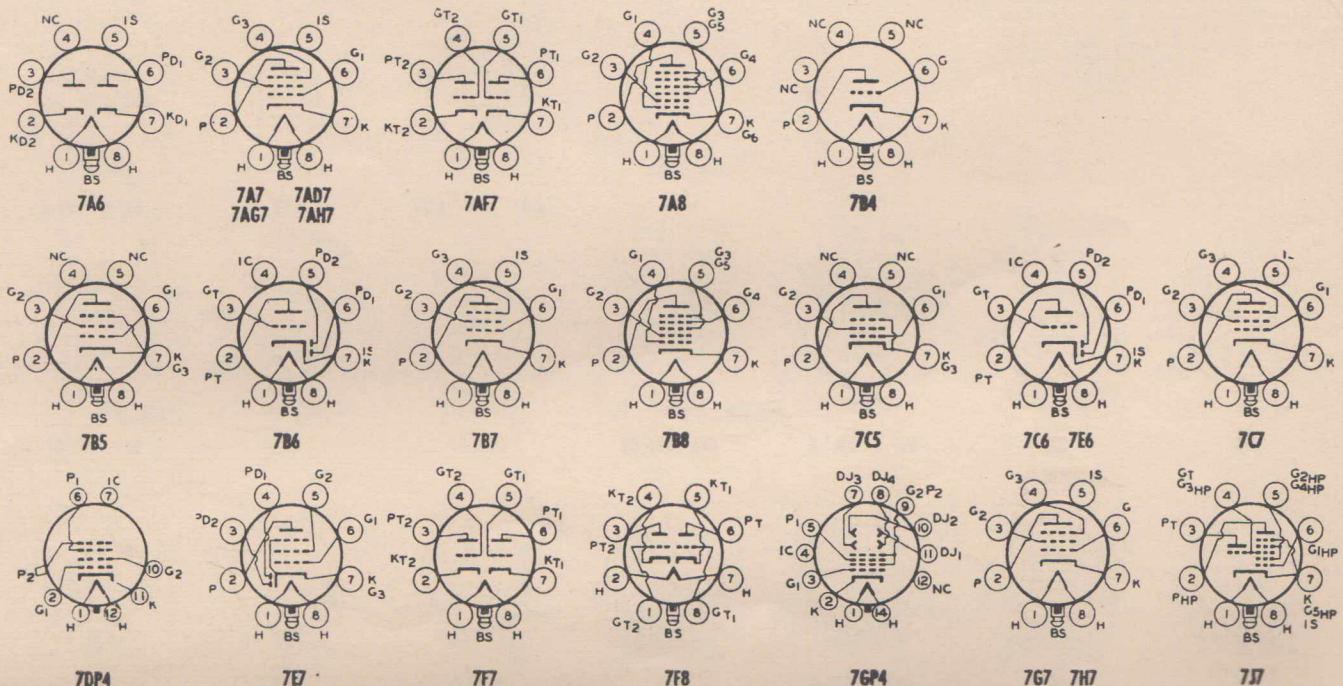
For footnotes, see preceding page.



# 7A6 to 7J7

Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
7A6	Twin Diode	B5	H	6.3	0.15	Detector Rectifier	Maximum A-C Voltage per Plate.....150 Volts, RMS Maximum D-C Output Current per plate..... 8 Milliamperes									7A6	
7A7	Remote-Cutoff Pentode	B5	H	6.3	0.3	Class A Amplifier	For other characteristics, refer to Type 6SK7.									7A7	
7AD7	Power Pentode	C2a	H	6.3	0.6	Class A Amplifier	300	Cath. Bias -10	150	7.0	28.0	300000	9500	Cath. Res., 68 ohms	7AD7		
7AF7	Medium-Mu Twin Triode	B5	H	6.3	0.3	Each Unit as Class A Amplifier	250	Cath. Bias -10	100	9.0	7600	2100	16	Cath. Res., 1100 ohms	7AF7		
7AG7	Sharp-Cutoff Pentode	B5	H	6.3	0.15	Class A Amplifier	100	Cath. Bias -10	100	9.0	6500	2600	17	Cathode-Bias Resistor, 250 ohms	7AG7		
7AH7	Sharp-Cutoff Pentode	B5	H	6.3	0.15	Class A Amplifier	250	Cath. Bias -10	250	2.0	6.0	1 meg.	4200	Cath. Res., 250 ohms	7AH7		
7A8	Octode Converter	B5	H	6.3	0.15	Converter	100	- 3.0	75	2.7	1.8	650000	Anode-Grid (#2): 250 $\mu$ max. volts, 4.2 ma. Oscillator-Grid (#1) Resistor $\mu$ . Conversion Transcond., 550 micromhos.		7A8		
7B4	High-Mu Triode	B5	H	6.3	0.3	Amplifier	250	- 3.0	100	3.2	3.0	700000	For other characteristics, refer to Type 6SF5.		7B4		
7B5	Power Amplifier Pentode	C2a	H	6.3	0.4	Class A Amplifier	For other characteristics, refer to Type 6K6-GT.									7B5	
7B6	Duplex-Diode High-Mu Triode	B5	H	6.3	0.3	Triode Unit as Amplifier	For other characteristics, refer to Type 6SQ7.									7B6	
7B7	Remote-Cutoff Pentode	B5	H	6.3	0.15	Class A Amplifier	250	- 3.0	100	1.7	8.5	750000	1750	—	7B7		
7B8	Pentagrid Converter	B5	H	6.3	0.3	Converter	For other characteristics, refer to Type 6A8.									7B8	
7C5	Beam Power Amplifier	C2a	H	6.3	0.45	Class A Amplifier	For other characteristics, refer to Type 6V6-GT.									7C5	
7C6	Duplex-Diode High-Mu Triode	B5	H	6.3	0.15	Triode Unit as Class A Amplifier	250	- 1.0	—	—	1.3	100000	1000	100	7C6		
7C7	Sharp-Cutoff Pentode	B5	H	6.3	0.15	Class A Amplifier	100	- 3.0	100	0.4	1.8	1.25	1225	—	7C7		
7DPA	Directly Viewed Kinescope	I1	H	6.3	0.6	Picture Reproduction	Focus: Electrostatic Deflection: Magnetic Deflection Angle: 50° Phosphor: No. 4 Size of Picture with Rounded Ends: 4 3/4" x 6 3/4"			Requires External Double-Field Ion-Trap Magnet			Anode-No. 2 Volts 8000 (max.) Anode-No. 1 Volts for Focus, 1216 to 1644 (2400 max.) Grid-No. 2 Volts, 250 (410 max.) Grid-No. 1 Volts for Visual Cutoff, -27 to -63			7DPA	
7E6	Duplex-Diode Triode	B5	H	6.3	0.3	Triode Unit as Amplifier	For other characteristics, refer to Type 6R7.									7E6	
7E7	Duplex-Diode Pentode	B5	H	6.3	0.3	Pentode Unit as Class A Amplifier	100	- 1.0	100	2.7	10.0	150000	1600	—	7E7		
7F7	Twin-Triode Amplifier	B5	H	6.3	0.3	Each Unit as Amplifier	250	- 3.0	100	1.6	7.5	700000	1300	—	7F7		
7F8	Twin-Triode Amplifier	B5	H	6.3	0.3	Each Unit as Class A Amplifier	250	Cathode-Bias Res., 500 ohms			6.0	—	3300	48	—	7F8	
7G7	Sharp-Cutoff Pentode	B5	H	6.3	0.45	Class A Amplifier	250	- 2.0	100	2.0	6.0	800000	4500	—	7G7		
7GP4	Directly Viewed Kinescope	K	H	6.3	0.6	Picture Reproduction	Anode-No. 2 and Grid-No. 2 Volts, 4000 (max.) Anode-No. 1 Volts for Focus, 1080 to 1600 Grid-No. 1 Volts for Visual Cutoff, 48 to 112			For other characteristics, refer to Type 7JP4.						7GP4	
7H7	Sharp-Cutoff Pentode	B5	H	6.3	0.3	Class A Amplifier	100	- 1.0	100	2.6	7.5	350000	4000	—	7H7		
7J7	Triode-Heptode Converter	B5	H	6.3	0.3	Triode Unit as Oscillator	100	- 2.5	150	3.2	10.0	800000	4000	—	7J7		
						Heptode Unit as Mixer	250	- 3.0	100	2.6	1.5	500000	280	Conversion Transcond., 280 micromhos.	7J7		
							250	- 3.0	100	2.8	1.4	1.5	Conversion Transcond., 290 micromhos.	7J7			

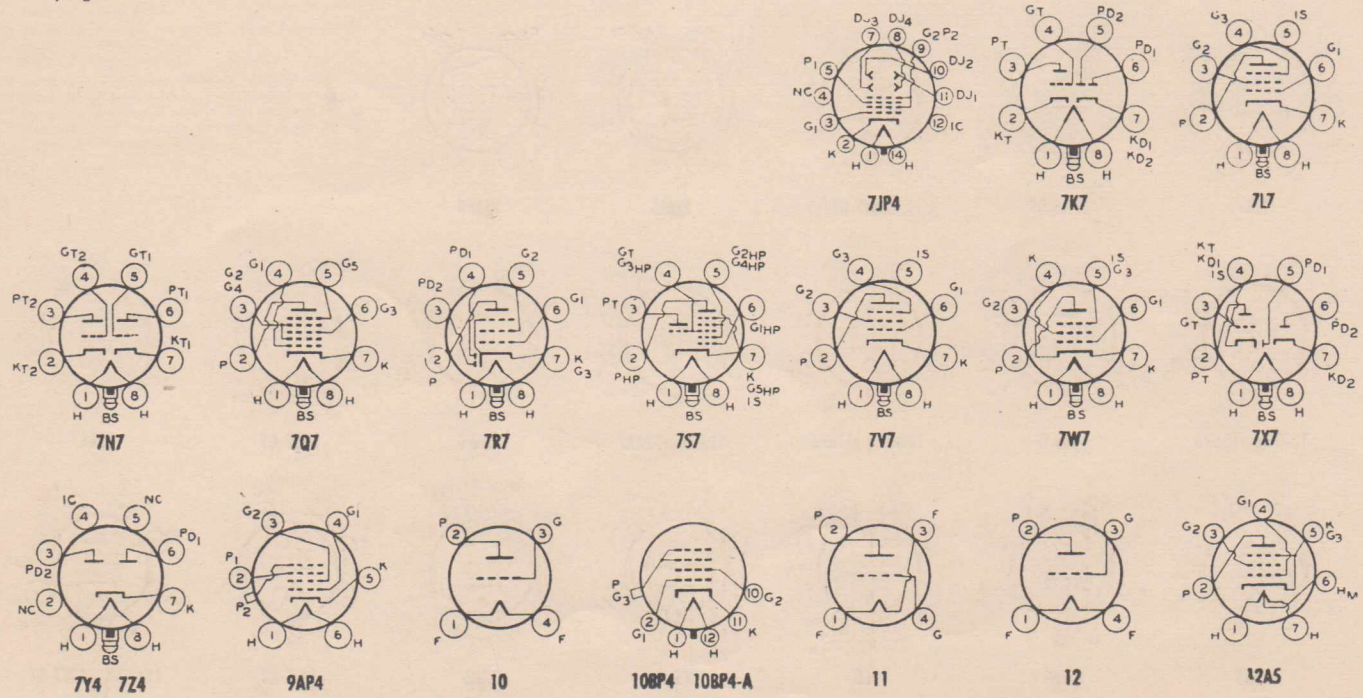
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Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) μmhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
7JP4	Directly Viewed Kinescope	J	H	6.3	0.6	Focus: Electrostatic Deflection: Electrostatic Phosphor: No. 4 Size of Picture with Rounded Ends: 4 7/8" x 6 1/2"										7JP4	
7K7	Twin-Diode-High-Mu Triode	B5	H	6.3	0.3	250	-2	—	—	2.3	44000	1600	70	—	—	7K7	
7L7	RF Amplifier Pentode	B5	H	6.3	0.3	100	-1.0	100	2.4	5.5	100000	3000	—	—	7L7		
7N7	Twin-Triode Amplifier	C2a	H	6.3	0.6	For other characteristics, refer to Type 6SN7-GT										7N7	
7Q7	Pentagrid Converter	B5	H	6.3	0.3	100	-2.0	100	8.5	3.5	500000	Grid #1 Resistor, 20000 ohms.	—	—	7Q7		
7R7	Duplex-Diode Pentode	B5	H	6.3	0.3	100	-1.0	100	2.2	5.5	350000	3000	—	—	7R7		
7S7	Triode-Heptode Converter	B5	H	6.3	0.3	100	-2.0	100	3.0	1.9	500000	Triode-Grid & Heptode-Grid Current, 0.3 ma.	—	—	7S7		
7V7	RF Amplifier Pentode	B5	H	6.3	0.45	300	—	150	3.9	10.0	300000	5800	—	—	7V7		
7W7	Rr Amplifier Pentode	B5	H	6.3	0.45	For other characteristics, refer to Type 7V7.										7W7	
7X7	Twin Diode-High-Mu Triode	C2a	H	6.3	0.3	100	0	—	—	1.2	85000	1000	85	—	7X7		
7Y4	Full-Wave Rectifier	B5	H	6.3	0.5	With Capacitive-Input Filter: Max. A-C Volts per Plate (RMS), 325 Max. Peak Inverse Volts, 1250 Max. D-C Output Ma., 70 Min. Total Effect. Supply Imped. per Plate, 150 ohms.										7Y4	
7Z4	Full-Wave Rectifier	C2a	H	6.3	0.9	With Inductive-Input Filter: Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1250 Max. D-C Output Ma., 100 Min. Value of Input Choke, 10 henries										7Z4	
9AP4	Directly Viewed Kinescope	O	H	2.5	2.1	Focus: Electrostatic Deflection: Magnetic Phosphor: No. 4 Picture Size: 5 3/8" x 7 1/4"										9AP4	
10@	Power Amplifier Triode	E3	F	7.5	1.25	350	-32.0	—	—	16.0	5150	1550	8.0	11000	0.9	10@	
10BP4	Directly Viewed Kinescope	This type has clear glass face plate, but in other respects is same as 10BP4-A.														10BP4	
10BP4-A	Directly Viewed Kinescope "With Filterglass" Face Plate	M	H	6.3	0.3	Focus: Magnetic Deflection: Angle: 57° Phosphor: No. 4 Size of Picture with Rounded Ends: 6 1/8" x 9 1/8"										10BP4-A	
11	Detector Amplifier Triode	D2a	D.C. F	1.1	0.25	90	-4.5	—	—	2.5	15500	425	6.6	—	11		
12	Power Amplifier Pentode	D5	H	6.3	0.6	100	-15.0	100	3.0	17.0	50000	1700	—	4500	0.8	12	
12A5	Power Amplifier Pentode	D5	H	12.6	0.3	180	-25.0	180	8.0	45.0	35000	2400	—	3300	3.4	12A5	

Three vertical rules before or after type No. = Miniature type having either 7 or 9 pins.  
 Two vertical rules before or after type No. = Metal type.  
 One vertical rule before or after type No. = GT or other larger glass type.  
 Light Face = Discontinued type.  
 For key to tube dimensions and, legend for base and envelope connection diagrams, see page 23.  
 \* For Grid-leak Detection—plate volts 45, grid return to + filament or to cathode.  
 @ Grids #3 and #5 are screen. Grid No. 4 is signal-input grid.

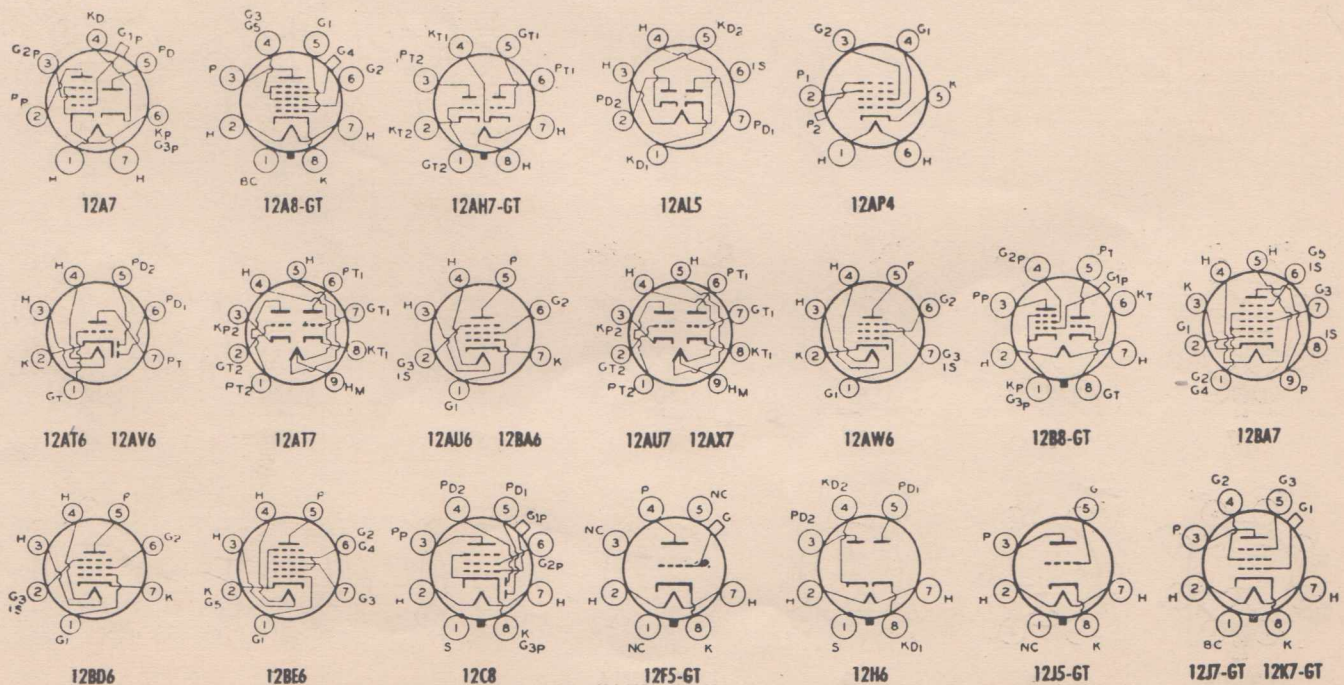
▲ Grids #2 and #4 are screen. Grid #3 is signal-input control grid.  
 ■ Supply voltage applied through 20000-ohm voltage-dropping resistor.  
 ● 50000 ohms.  
 § Megohms.  
 ■ Either ac or dc may be used on filament or heater, except as specifically noted. For use of dc on ac filament types, decrease stated grid volts by 1/2 (approx.) of filament voltage.  
 @ Superseded by 10-Y. See Power and Gas Tubes Booklet PG-101A.



# 12A7 to 12K7-GT

Type	Name	Tube Dimensions	Cathode Type and Rating			Use <small>Values to right give operating conditions and characteristics for indicated typical use</small>	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
12A7	Rectifier-Pentode	D9	H	12.6	0.3	135	-13.5	135	2.5	9.0	102000	975	—	13500	0.55	12A7	
						Pentode Unit as Class A Amplifier Half-Wave Rectifier Maximum A-C Plate Voltage: 125 Volts, RMS Maximum D-C Output Current: 30 Milliamperes											
12A8-GT	Pentagrid Converter	C3	H	12.6	0.15	For other characteristics, refer to Type 6A8.										12A8-GT	
12AH7-GT	Twin Triode	C0a	H	12.6	0.15	100	-3.6	—	—	3.7	10300	1550	16	—	—	12AH7-GT	
						180	-6.5	—	—	7.6	8400	1900	16	—	—		
12AL5	Twin-Diode	A1	H	12.6	0.15	For other characteristics, refer to Type 6AL5.										12AL5	
12AP4	Directly Viewed Kinescope	Q	H	2.5	2.1	Focus: Electrostatic Deflection: Magnetic Phosphor: No. 4 Picture Size: 7 $\frac{3}{8}$ " x 9 $\frac{3}{4}$ "		Anode-No. 2 Volts, 7000 (max.) Anode-No. 1 Volts for Focus, 1192 to 1788 (2000 max.) Grid-No. 2 Volts 250 (300 max.)			Grid-No. 1 Volts for Visual Cutoff, -20 to -60 Grid-No. 1 Signal Voltage, (Peak-to-Peak) value, 30 volts approx.					12AP4	
12AT6	Duplex-Diode High-Mu Triode	B0	H	12.6	0.15	For other characteristics, refer to Type 6AT6.										12AT6	
12AT7	High-Mu Twin Triode	B0a	H	6.3	0.3	100	—	—	—	11.8	15000	4000	60	—	—	12AT7	
						250	—	—	—	10.0	10900	5500	60	—	—		
12AU6	RF Amplifier Pentode	B0	H	12.6	0.15	For other characteristics, refer to Type 6AU6.										12AU6	
12AU7	Twin-Triode Amplifier	B0a	H	6.3	0.3	100	0	—	—	10.5	6500	3100	20	—	—	12AU7	
						250	-8.5	—	—	10.5	7700	2200	17	—	—		
12AV6	Twin-Diode High-Mu Triode	B0	H	12.6	0.15	For other characteristics, refer to Type 6AV6.										12AV6	
12AW6	RF Amplifier Pentode	B0	H	12.6	0.15	For other characteristics, refer to Type 6AG5.										12AW6	
12AX7	High-Mu Twin Triode	B0a	H	6.3	0.3	100	-1.0	—	—	0.5	80000	1250	100	—	—	12AX7	
						250	-2.0	—	—	1.2	62500	1600	100	—	—		
12B8-GT	Triode-Pentode	C10a	H	12.6	0.3	90	0	—	—	2.8	37000	2400	90	—	—	12B8-GT	
						90	-3.0	90	2.0	7.0	200000	1800	—	—			
12BA6	RF Amplifier Pentode	B0	H	12.6	0.15	For other characteristics, refer to Type 6BA6.										12BA6	
12BA7	Pentagrid Converter	B0a	H	12.6	0.15	For other characteristics, refer to Type 6BA7.										12BA7	
12BD6	Remote-Cutoff Pentode	B0	H	12.6	0.15	For other characteristics, refer to Type 6BD6.										12BD6	
12BE6	Pentagrid Converter	B0	H	12.6	0.15	For other characteristics, refer to Type 6BE6.										12BE6	
12C8	Duplex-Diode Pentode	C1	H	12.6	0.15	250	-3.0	125	2.3	10.0	600000	1325	—	—	—	12C8	
						Pentode Unit as RF Amplifier Pentode Unit as AF Amplifier 90 $\times$ Cath. Bias, 3500 ohms. Screen Resistor = 1.1 meg. Grid Resistor, ** Gain per stage = 55 300 $\times$ Cath. Bias, 1600 ohms. Screen Resistor = 1.2 meg. / 0.5 megohm. (Gain per stage = 79)											
12F5-GT	High-Mu Triode	C2b	H	12.6	0.15	For other characteristics, refer to Type 6SF5.										12F5-GT	
12H6	Twin-Diode	A1a	H	12.6	0.15	For other ratings, refer to Type 6H6.										12H6	
12J5-GT	Medium-Mu Triode	C3	H	12.6	0.15	For other characteristics, refer to Type 6J5.										12J5-GT	
12J7-GT	Sharp-Cutoff Pentode	C3	H	12.6	0.15	For other characteristics, refer to Type 6J7.										12J7-GT	
12K7-GT	Remote-Cutoff Pentode	C3	H	12.6	0.15	For other characteristics, refer to Type 6K7.										12K7-GT	

For footnotes, see following page.



Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) μmhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type				
			C. T.	Volts	Amp.																
12K8	Triode-Hexode Converter	C1	H	12.6	0.15												12K8				
12LP4	Directly Viewed Kinescope	This type has clear glass face plate, but in other respects is same as 12LP4-A														12LP4					
12LP4-A	Directly Viewed Kinescope With "Filterglass" Face Plate	N	H	6.3	0.6	Picture Reproduction	Focus: Magnetic Deflection: Magnetic Deflection Angle: 57° Phosphor: No. 4 Size of Picture with Rounded Ends: 8 1/2" x 11 3/4"			Requires External Double-Field Ion-Trap Magnet		Anode Volts, 12000 max. Grid-No. 2 Volts, 250 (410 max.) Grid-No. 1 Volts for Visual Cutoff. -27 to -63 volts Grid-No. 1—Circuit Resistance, 1.5 megohms max.			12LP4-A						
12Q7-GT	Duplex-Diode High-Mu Triode	C3	H	12.6	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6Q7.														12Q7-GT
12SA7	Pentagrid Converter	B2	H	12.6	0.15	Mixer	For other characteristics, refer to Type 6SA7.														12SA7
12SA7-GT	Pentagrid Converter	C3	H	12.6	0.15	Mixer	For other characteristics, refer to Type 6SA7.														12SA7-GT
12SC7	Twin-Triode Amplifier	B2	H	12.6	0.15	Each Unit as Class A Amplifier	For other characteristics, refer to Type 6SC7.														12SC7
12SF5	High-Mu Triode	B2	H	12.6	0.15	Class A Amplifier	For other characteristics, refer to Type 6SF5.														12SF5
12SF5-GT	High-Mu Triode	C3	H	12.6	0.15	Class A Amplifier	For other characteristics, refer to Type 6SF5.														12SF5-GT
12SF7	Diode-Remote-Cutoff Pentode	B2	H	12.6	0.15	Pentode Unit as Amplifier	For other characteristics, refer to Type 6SF7.														12SF7
12SG7	Semi-Remote-Cutoff Pentode	B2	H	12.6	0.15	Class A Amplifier	For other characteristics, refer to Type 6SG7.														12SG7
12SH7	Sharp-Cutoff Pentode	B2	H	12.6	0.15	Class A Amplifier	For other characteristics, refer to Type 6SH7.														12SH7
12SJ7	Sharp-Cutoff Pentodes	B2	H	12.6	0.15	Class A Amplifier	For other characteristics, refer to Type 6SJ7.														12SJ7
12SJ7-GT	Sharp-Cutoff Pentodes	C3	H	12.6	0.15	Class A Amplifier	For other characteristics, refer to Type 6SJ7.														12SJ7-GT
12SK7	Remote-Cutoff Pentodes	B2	H	12.6	0.15	Class A Amplifier	For other characteristics, refer to Type 6SK7.														12SK7
12SK7-GT	Remote-Cutoff Pentodes	C3	H	12.6	0.15	Class A Amplifier	For other characteristics, refer to Type 6SK7.														12SK7-GT
12SL7-GT	Twin-Triode Amplifier	C3	H	12.6	0.15	Each Unit as Amplifier	For other characteristics, refer to Type 6SL7-GT.														12SL7-GT
12SN7-GT	Twin-Triode Amplifier	C3	H	12.6	0.3	Each Unit as Amplifier	For other characteristics, refer to Type 6J5.														12SN7-GT
12SQ7	Duplex-Diode High-Mu Triode	B2	H	12.6	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6SQ7.														12SQ7
12SQ7-GT	Duplex-Diode High-Mu Triode	C3	H	12.6	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6SQ7.														12SQ7-GT
12SR7	Duplex-Diode Triode	B2	H	12.6	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6SR7.														12SR7
12SR7-GT	Duplex-Diode Triode	C3	H	12.6	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6SR7.														12SR7-GT
12S8-GT	Triple-Diode-High-Mu Triode	C8a	H	12.6	0.15	Triode Unit as Class A Amplifier	100 250	-1 -2	— —	— —	0.4 0.9	110000 91000	900 1100	100 100	— —	— —	— —	12S8-GT			
12Z3	Half-Wave Rectifier	D5	H	12.6	0.3	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 235 Min. Total Effective Plate-Supply Impedance: Up to 117 Max. D-C Output Ma., 55 volts, 0 ohms; at 150 volts, 30 ohms; at 235 volts, 75 ohms.														12Z3
14A4	Medium-Mu Triode	B5	H	12.6	0.15	Class A Amplifier	For other characteristics, refer to Type 6J5.														14A4
14A5	Beam Power Amplifier	B5	H	12.6	0.15	Class A Amplifier	250	-12.5	250	3.5	30	70000	3000	—	7500	2.8	—	14A5			
14A7	Remote-Cutoff Pentode	B5	H	12.6	0.15	Class A Amplifier	100 250	-1.0 -3.0	100 100	4.0 2.6	13.0 9.2	120000 800000	2350 2000	— —	— —	— —	— —	14A7			

Three vertical rules before or after type No. = Miniature type having either 7 or 9 pins.  
Two vertical rules before or after type No. = Metal type.

One vertical rule before or after type No. = GT or other larger glass type.  
Light Face = Discontinued type.

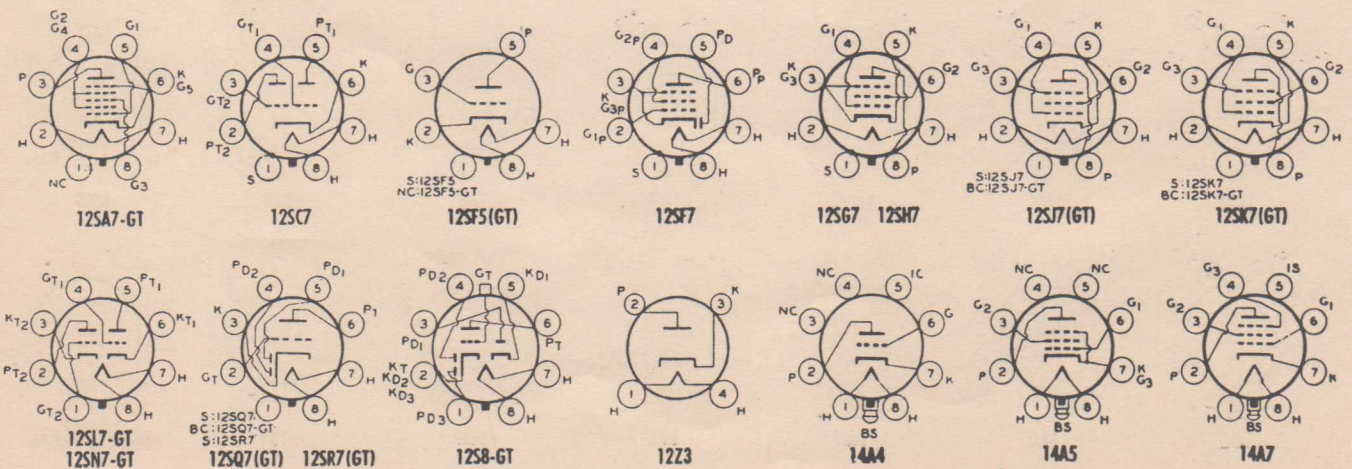
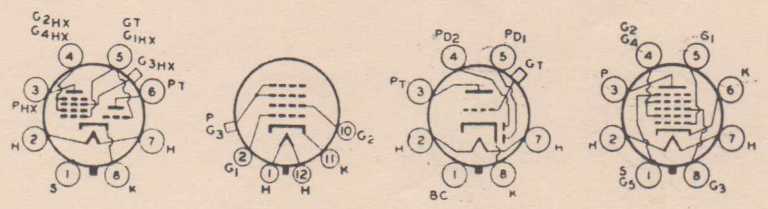
For key to tube dimensions and legend for base and envelope connection diagrams, see page 23.

Grids #3 and #5 are screen. Grid No. 4 is signal-input grid.

Grid #2 tied to plate.  
Grids #2 and #4 are screen. Grid #3 is signal-input control grid.

\*\* For grid of following tube.  
Applied through plate resistor of 250000 ohms.

Either ac or dc may be used on filament or heater, except as specifically noted. For use of dc on ac filament types, decrease stated grid volts by 1/2 (approx.) of filament voltage.

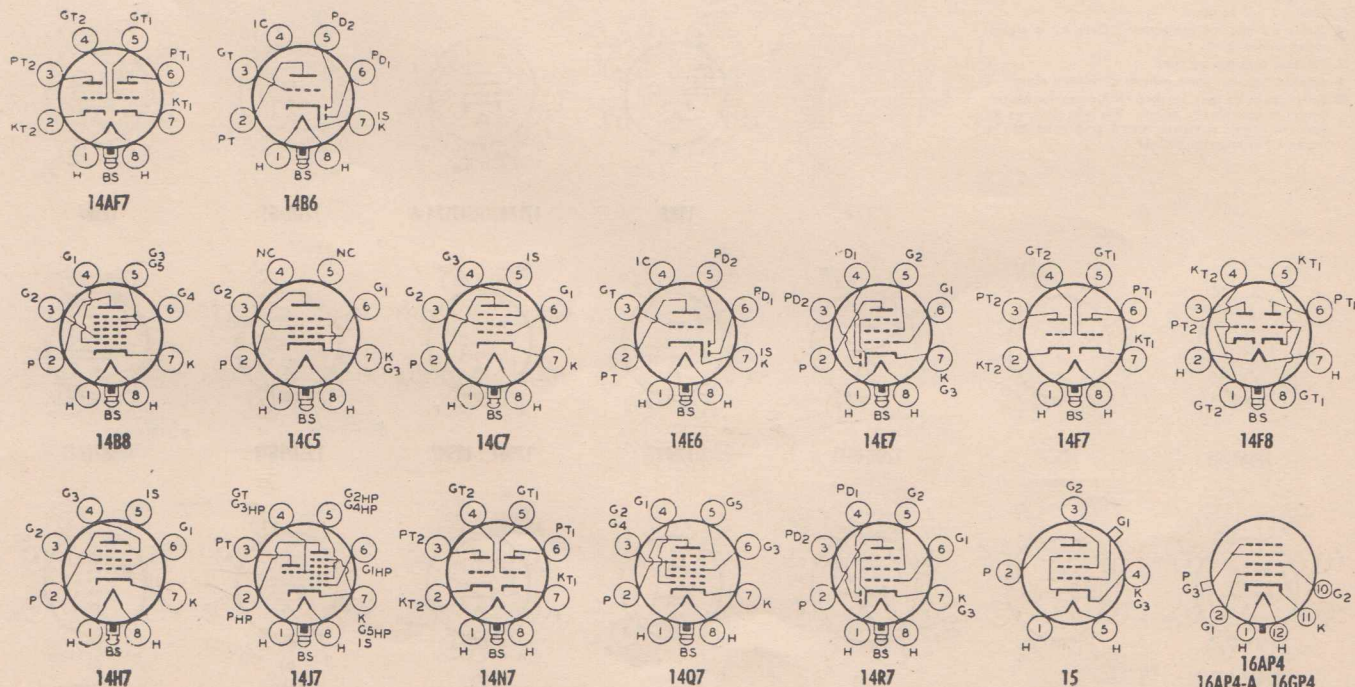


# 14AF7 to 16GP4

Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
14AF7	Medium-Mu Twin Triode	85	H	12.6	0.15												14AF7
14B6	Duplex-Diode High-Mu Triode	85	H	12.6	0.15												14B6
14B8	Pentagrid Converter	85	H	12.6	0.15												14B8
14C5	Beam Power Amplifier	C2a	H	12.6	0.225	180 315	- 8.5 -13	180 225	3.0 2.2	29.0 34.0	58000 77000	3700 3750		5500 8500	2 5.5		14C5
14C7	Sharp-Cutoff Pentode	85	H	12.6	0.15												14C7
14E6	Duplex-Diode Triode	86	H	12.6	0.15												14E6
14E7	Twin-Diode-Remote-Cutoff Pentode	85	H	12.6	0.15	100 250	- 1 - 3	100 100	2.7 1.6	10.0 7.5	150000 700000	1600 1300					14E7
14F7	Twin-Triode Amplifier	85	H	12.6	0.15												14F7
14F8	Medium-Mu Twin Triode	80b	H	12.6	0.15	250		Cathode-Bias Res., 500 ohms		6.0		3300	48				14F8
14H7	Remote-Cutoff Pentode	86	H	12.6	0.15												14H7
14J7	Triode-Heptode Converter	85	H	12.6	0.15												14J7
14N7	Twin-Triode Amplifier	C2a	H	12.6	0.3												14N7
14Q7	Pentagrid Converter	85	H	12.6	0.15												14Q7
14R7	Duplex-Diode Pentode	85	H	12.6	0.15												14R7
15	RF Amplifier Pentode	D9	D.C. H	2.0	0.22	67.5 135	- 1.5 - 1.5	67.5 67.5	0.3 0.3	1.85 1.85	630000 800000	710 750					15
16AP4	Directly Viewed Kinescope	P	H	6.3	0.6												16AP4
16AP4-A	Directly Viewed Kinescope	P0	H	6.3	0.6												16AP4-A
16GP4	Directly Viewed Kinescope	L	H	6.3	0.6												16GP4

Three vertical rules before or after type No. = Miniature type having either 7 or 9 pins.  
 Two vertical rules before or after type No. = Metal type.  
 One vertical rule before or after type No. = GT or other larger glass type.  
 Light Face = Discontinued type.  
 For key to tube dimensions and, legend for base and envelope connection diagrams, see page 23.  
 • Grids #3 and #5 are screen. Grid No. 4 is signal-input grid.

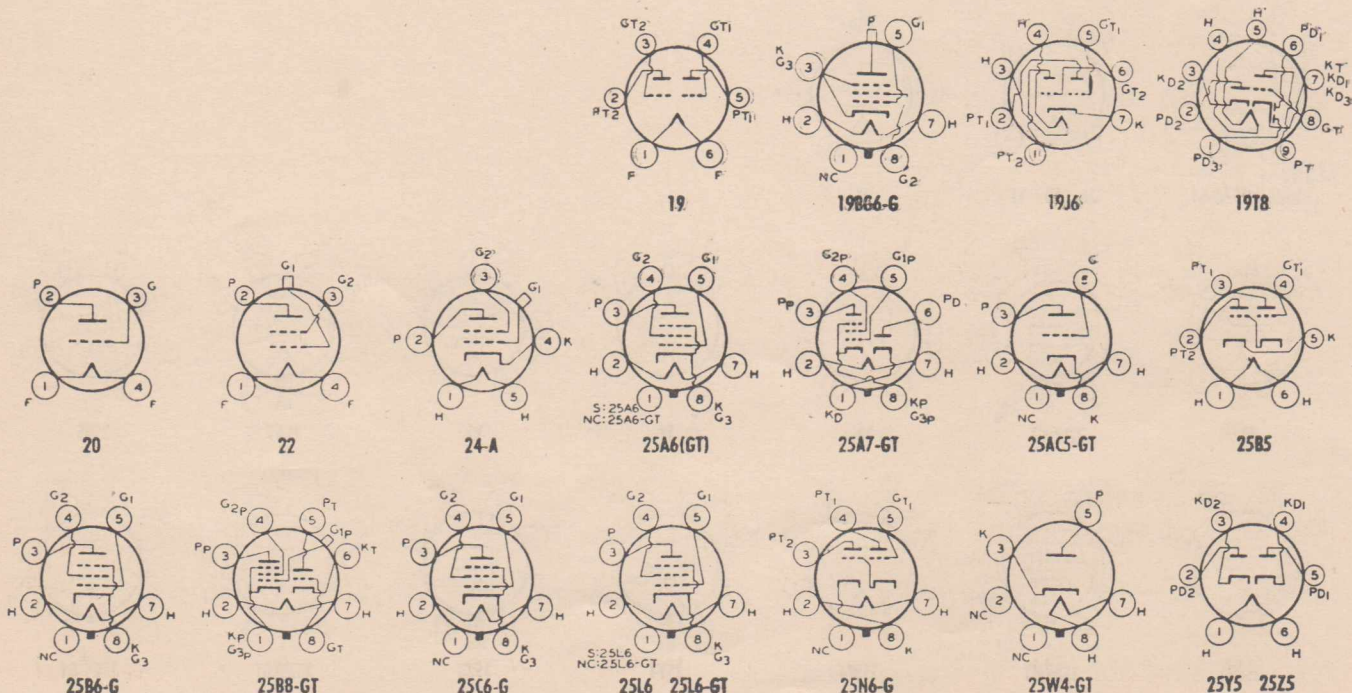
▲ Grids #2 and #4 are screen. Grid #3 is signal-input control grid.  
 ♦ For two tubes.  
 ✖ Applied through plate resistor of 250000 ohms.  
 ■ Either ac or dc may be used on filament or heater, except as specifically noted. For use of dc on ac filament types, decrease stated grid volts by 1/2 (approx.) of filament voltage.  
 \* Maximum.  
 # Value is for both units operating at the specified conditions.





Type	Name	Tube Dimensions	Cathode Type and Rating		Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) umhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C.T.	Volts												
19	Twin-Triode Amplifier	D5	D.C. F	2.0	0.26	Amplifier									19	
19BG6-G	Beam Power Amplifier	F1	H	18.9	0.3	Horizontal Deflection Amplifier in TV Equipment									19BG6-G	
19J6	Medium-Mu Twin Triode	80	H	18.9	0.15	100	Cathode-Bias Res., 50k ohms		8.5	7100	5300	38	Max. DC Plate Volts, 500 Max. DC Plate Current, 100 ma.		19J6	
19T8	Triode-Diode High-Mu Triode	80a	H	18.9	0.15	Each Unit as Class A Amplifier Triode Unit as Class A Amplifier									19T8	
20	Power Amplifier Triode	D1	D.C. F	3.3	0.132	90	-16.5	—	—	3.0	8000	415	3.3	9600	0.045	20
22	RF Amplifier Tetrode	E1	D.C. F	3.3	0.132	135	-1.5	45	0.6*	1.7	725000	375	—	—	—	22
24-A	RF Amplifier Tetrode	E1	H	2.5	1.75	135	-1.5	67.5	1.3*	3.7	325000	500	—	—	—	24-A
						180	-3.0	90	1.7*	4.0	400000	1000	—	—	—	
25A6	Power Amplifier Pentode	C2	H	25.0	0.3	250	-3.0	90	1.7*	4.0	600000	1050	—	—	—	25A6
25A6-GT	Power Amplifier Pentode	C3	H	25.0	0.3	250K	(-5.0 approx.)	20 to 45	Plate current to be adjusted to 0.1 milliamperes with no signal.						25A6-GT	
25A7-GT	Rectifier Pentode	C3	H	25.0	0.3	95	-15.0	95	4.0	20.0	45000	2000	—	4500	0.9	25A7-GT
25AC5-GT	High-Mu Power Amplifier Triode	C3	H	25.0	0.3	160	-18.0	120	6.5	33.0	42000	2375	—	5000	2.2	25AC5-GT
						For other characteristics, refer to Type 25A6.										
25B5	Direct-Coupled Power Amplifier	D9a	H	25.0	0.3	100	-15.0	100	4.0	20.5	50000	1800	—	4500	0.77	25B5
						For other characteristics, refer to Type 25N6-G.										
25B6-G	Power Amplifier Pentode	D10	H	25.0	0.3	105	-16.0	105	2.0	48.0	15500	4800	—	1700	2.4	25B6-G
25B8-GT	Triode-Pentode	C3	H	25.0	0.15	200	-23.0	135	1.8	62.0	18000	5000	—	2500	7.1	25B8-GT
						100	-1.0	—	—	0.6	75000	1500	112	—	—	
25C6-G	Beam Power Amplifier	D10	H	25.0	0.3	100	-3.0	100	2.0	7.6	185000	2000	—	—	—	25C6-G
25L6	Beam Power Amplifier	C2	H	25.0	0.3	Class A Amplifier										25L6
						For other characteristics, refer to Type 6Y6-G.										
25L6-GT	Beam Power Amplifier	C3	H	25.0	0.3	110	-7.5	110	4.0	49.0	13000	9000	—	2000	2.1	25L6-GT
25N6-G	Direct-Coupled Power Amplifier	D8	H	25.0	0.3	200	-8.0	110	2.0	50.0	30000	9500	—	3000	4.3	25N6-G
25W4-GT	Half-Wave Rectifier	C2b	H	25.0	0.3	Output Triode: Plate Volts, 180; Plate Ma., 46; Load, 4000 ohms. Triode: Plate Volts, 100; Grid Volts, 0; A-F Signal Volts (Peak), 29.7; Plate Ma., 5.8.										25W4-GT
25Y5	Rectifier-Doubler	D8	H	25.0	0.3	For other characteristics, refer to Type 6W4-GT.										25Y5
25Z5	Rectifier-Doubler	D8	H	25.0	0.3	Max. A-C Volts per Plate (RMS), 235 Max. D-C Output Ma. per Plate, 75										25Z5
For other ratings, refer to Type 25Z6.																

For footnotes, see preceding page.

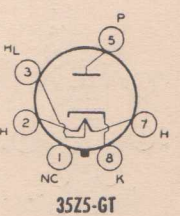
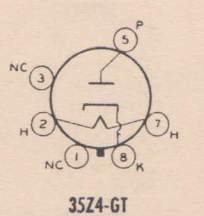
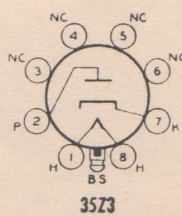
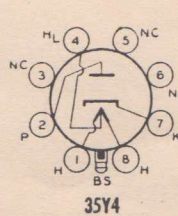
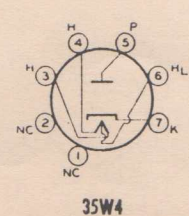
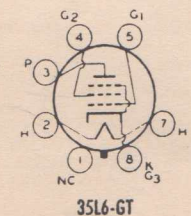
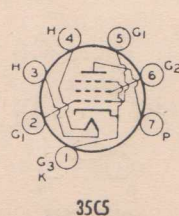
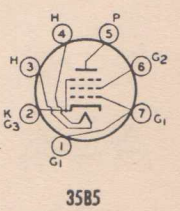
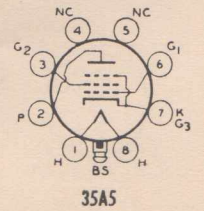
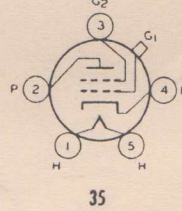
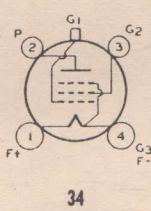
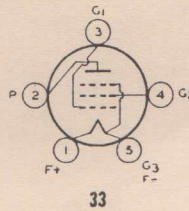
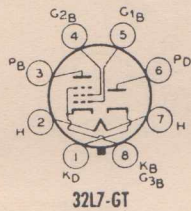
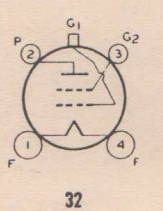
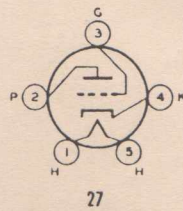
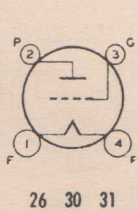
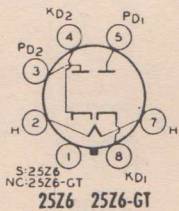


# 25Z6 to 35Z5-GT

Type	Name	Tube Dimensions	Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
25Z6 25Z6-GT	Vacuum Rectifier-Doublers	C2 C3	H	25.0	0.3	Voltage Doubler	Max. A-C Volts per Plate (RMS), 117		Min. Total Effective Plate-Supply Impedance: Half-Wave, 30 ohms; Full-Wave, 15 ohms.		25Z6						
						Half-Wave Rectifier	Max. D-C Output Ma., 75		Min. Total Effect. Supply Imped. per Plate: Up to 117 volts, 15 ohms; at 150 volts, 40 ohms; at 235 volts, 100 ohms.			25Z6-GT					
26	Amplifier Triode	D12	F	1.5	1.05	Class A Amplifier	90 180	- 7.0 -14.5	2.9 6.2	8900 7300	935 1150		8.3 8.3	7000 5700	0.185 0.375	26	
27	Detector* Amplifier Triode	D5	H	2.5	1.75	Class A Amplifier	135 250	- 9.0 -21.0	4.5 5.2	9000 9250	1000 975	9.0 9.0	27				
						Bias Detector	250	{ -30.0 } { approx. }	Plate current to be adjusted to 0.2 milliampere with no signal.								
30	Medium-Mu Triode	D5	D.C. F	2.0	0.06	Amplifier	For other characteristics, refer to Type 1H4-G.										30
31	Power Amplifier Triode	D6	D.C. F	2.0	0.13	Class A Amplifier	135 180	-22.5 -30.0	8.0 12.3	4100 3600	925 1050	3.8 3.8	7000 5700	0.185 0.375	31		
						Screen-Grid RF Amplifier	135 180	- 3.0 - 3.0	67.5 67.5	0.4 0.4	1.7 1.7	950000 1.0+§	640 650	32			
32	RF Amplifier Tetrode	E1	D.C. F	2.0	0.06	Bias Detector	180	{ - 6.0 } { approx. }	67.5	Plate current to be adjusted to 0.2 milliampere with no signal.						32	
						Amplifier Unit as Class A Amplifier	90 90	- 5.0 - 7.0	90 90	3.0 2.0	38.0 27.0	15000 17000	6000 4800	2600 2600	0.8 1.0		
32L7-GT	Rectifier-Beam Power Amplifier	C3	H	32.5	0.3	Half-Wave Rectifier	Maximum A-C Plate Voltage ..... 125 Volts, RMS Maximum D-C Output Current ..... 60 Milliamperes.										32L7-GT
33	Power Amplifier Pentode	D12	D.C. F	2.0	0.26	Class A Amplifier	180	-18.0	180	5.0	22.0	55000	1700	6000	1.5	33	
34	Supercontrol RF Amplifier Pentode	E1	D.C. F	2.0	0.06	Screen-Grid RF Amplifier	135 180	{ - 3.0 } { min. }	67.5 67.5	1.0 1.0	2.8 2.8	600000 1.0§	600 620	2500 5000	3.3 3.3	34	
						Supercontrol RF Amplifier Tetrode	180 250	{ - 3.0 } { min. }	90 90	2.5* 2.5*	6.3 6.5	300000 400000	1020 1050				
35A5	Beam Power Amplifier	C2a	H	35.0	0.15	Single-Tube Class A Amplifier	For other characteristics, refer to Type 35L6-GT.										35A5
35B5	Beam Power Amplifier	B3	H	35.0	0.15	Class A Amplifier	For other characteristics, refer to Type 35C5.										35B5
35C5	Beam Power Amplifier	B3	H	35.0	0.15	Class A Amplifier	110	- 7.5	110	3.0	40.0	13000	5800	2500	1.5	35C5	
35L6-GT	Beam Power Amplifier	C3	H	35.0	0.15	Single-Tube Class A Amplifier	110 200	- 7.5 - 8.0	110 125	3.0 2.0	40.0 43.0	14000 34000	5800 6100	2500 5000	1.5 3.3	35L6-GT	
						With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 117 Min. Total Effect. Plate-Supply Impedance, 15 ohms Max. D-C Output Ma.: With Pilot and No Shunt Res., 60; With Pilot and Shunt Res., 90; Without Pilot, 100										
35W4	Half-Wave Rectifier Heater Tap for Pilot	B3	H	35.0	0.15	With Capacitive-Input Filter	For other characteristics, refer to Type 35W4.										35W4
35Y4	Half-Wave Rectifier	C2a	H	35.0	0.15	With Capacitive-Input Filter	For other ratings, refer to Type 35Z4-GT.										35Y4
35Z3	Half-Wave Rectifier	C2a	H	35.0	0.15	With Capacitive-Input Filter	For other ratings, refer to Type 35Z4-GT.										35Z3
35Z4-GT	Half-Wave Rectifier	C3	H	35.0	0.15	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 235		Min. Total Effective Plate-Supply Impedance: Up to 117 volts, 15 ohms; at 235 volts, 100 ohms.		35Z4-GT						
35Z5-GT	Half-Wave Rectifier Heater Tap for Pilot	C3	H	35.0	0.15	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 235		Min. Total Effect. Plate-Supply Imped.: Up to 117 volts, 15 ohms; at 235 volts, 100 ohms. Max. D-C Output Ma.: With Pilot and No Shunt Res., 60; With Pilot and Shunt Res., 90; Without Pilot, 100.		35Z5-GT						

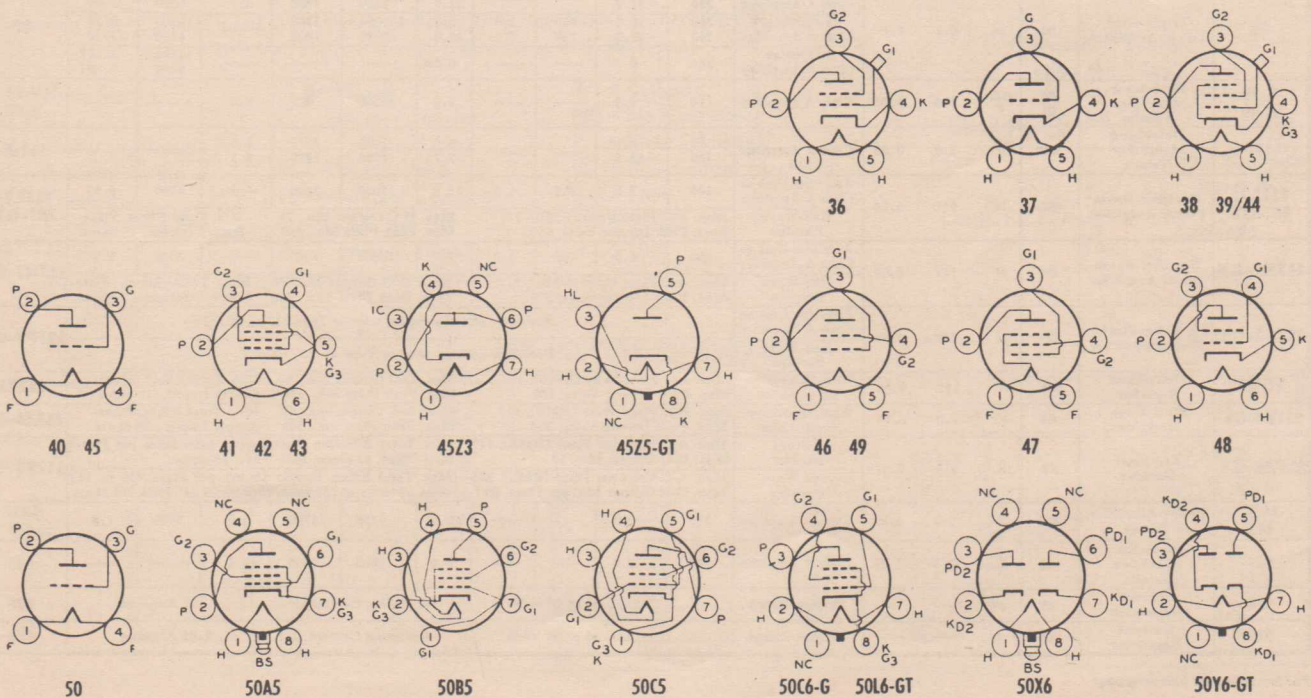
Three vertical rules before or after type No. = Miniature type having either 7 or 9 pins  
Two vertical rules before or after type No. = Metal type.  
One vertical rule before or after type No. = GT or other larger glass type.  
Light Face = Discontinued type.  
For key to tube dimensions and legend for base and envelope connection diagrams, see page 23.  
★ For Grid-leak Detection—plate volts 45, grid return to + filament or to cathode.  
† Power output is for two tubes at stated plate-to-plate load.  
□ Grid # 2 tied to plate  
◆ For two tubes

§ Megohms.  
Note 2: Subscript 2 on class of amplifier service (as AB<sub>2</sub>) indicates that grid current flows during some part of input cycle.  
\*\* For grid of following tube.  
x Applied through plate resistor of 250000 ohms.  
■ Either ac or dc may be used on filament or heater, except as specifically noted. For use of dc on ac filament types, decrease stated grid volts by 1/2 (approx.) of filament voltage.  
♥ Applied through plate resistor of 100000 ohms.  
♦ Grids # 1 and # 2 tied together.  
‡ Panel lamp section is between pins 2 and 2\*  
\* Maximum.



Type	Name	Tube Dimensions	Cathode Type and Rating			Use <small>Values to right give operating conditions and characteristics for indicated typical use</small>	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) $\mu$ mhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
			C. T.	Volts	Amp.												
36	RF Amplifier Tetrode	D9	H	6.3	0.3	Screen-Grid RF Amplifier	100	-1.5	55	1.7*	1.8	550000	850				36
						Bias Detector	250	-3.0	90		3.2	550000	1080				
37	Detector* Amplifier Triode	D5	H	6.3	0.3	Class A Amplifier	90	-6.0			2.5	11500	800	9.2			37
						Bias Detector	250	-18.0			7.5	1100	1100	9.2			
38	Power Amplifier Pentode	D9	H	6.3	0.3	Class A Amplifier	100	-9.0	100	1.2	7.0	140000	875		15000	0.27	38
							250	-18.0	250	3.8	22.0	100000	1200		10000	2.50	
39/44	Remote-Cutoff Pentode	D9	H	6.3	0.3	Class A Amplifier	90	-3.0	90	1.6	5.6	400000	1000				39/44
							250	min.	90	1.4	5.8	1.0 $\phi$	1050				
40	Medium-Mu Triode	D12	D.C. F	5.0	0.25	Class A Amplifier	135 $\times$	-1.5			0.2	150000	200	30			40
							180 $\times$	-3.0			0.2	150000	200	30			
41	Power Amplifier Pentode	D5	H	6.3	0.4	Amplifier	For other characteristics, refer to Type 6K6-GT.										41
42	Power Amplifier Pentode	D12	H	6.3	0.7	Amplifier	For other characteristics, refer to Type 6F6-G.										42
43	Power Amplifier Pentode	D12	H	25.0	0.3	Amplifier	For other characteristics, refer to Type 25A6.										43
45	Power Amplifier Triode	D12	F	2.5	1.5	Class A Amplifier	180	-31.5			31.0	1650	2125	3.5	2700	0.82	45
						Push-Pull Class AB <sub>2</sub> Amplifier	275	-56.0			36.0 $\phi$	1700	2050	3.5	4600	2.00	
45Z3	Half-Wave Rectifier	B0	H	45.0	0.075	Half-Wave Rectifier	275										45Z3
45Z5-GT	Half-Wave Rectifier Heater Tap for Pilot	C3	H	45.0	0.15	With Capacitive-Input Filter	For other ratings, refer to Type 35Z5-GT.										45Z5-GT
46	Dual-Grid Power Amplifier	E3	F	2.5	1.75	Class A Amplifier	250	-33.0			22.0	2380	2350	5.6	6400	1.25	46
						Class B Amplifier	300	0			8.0 $\phi$						
47	Power Amplifier Pentode	E3	F	2.5	1.75	Class A Amplifier	400				12.0 $\phi$			5800	20.0 $\uparrow$	47	
							250	-16.5	250	6.0	31.0	60000	2500		7000		2.7
48	Power Amplifier Tetrode	E3	D.C. H	30.0	0.4	Tetrode	96	-19.0	96	9.0	52.0		3800		1500	2.0	48
						Class A Amplifier	125	-20.0	100	9.5	56.0		3900		1500	2.5	
49	Dual-Grid Power Amplifier	D12	D.C. F	2.0	0.12	Tetrode Push-Pull Class A Amplifier	125	-20.0	100		100.0 $\phi$				3000	5.0 $\uparrow$	49
						Class A Amplifier	135	-20.0			6.0	4175	1125	4.7	11000	0.17	
50	Power Amplifier Triode	F1a	F	7.5	1.25	Class B Amplifier	180	0			4.0 $\phi$			12000	3.5 $\uparrow$	50	
						Class A Amplifier	300	-54.0			35.0	2000	1900	3.8	4600		1.6
50A5	Beam Power Amplifier	C2a	H	50.0	0.15	Class A Amplifier	400	-70.0			55.0	1800	2100	3.8	3670	3.4	50A5
							450	-84.0			55.0	1800	2100	3.8	4350	4.6	
50B5	Beam Power Amplifier	B3	H	50.0	0.15	Class A Amplifier	For other characteristics, refer to Type 50L6-GT.										50B5
50C5	Beam Power Amplifier	B3	H	50.0	0.15	Class A Amplifier	For other characteristics, refer to Type 50C5.										50C5
50C6-G	Beam Power Amplifier	D10	H	50.0	0.15	Class A Amplifier	110	-7.5	110	4.0	49.0	10000	7500		2500	1.9	50C5
							135	-13.5	135	3.5	58.0	9300	7000		2000	3.6	
50C6-G	Beam Power Amplifier	D10	H	50.0	0.15	Class A Amplifier	200	-14.0	135	2.2	61.0	18300	7100		2600	6.0	50C6-G
							110	-7.5	110	4.0	49.0	13000	8000		2000	2.1	
50L6-GT	Beam Power Amplifier	C3	H	50.0	0.15	Class A Amplifier	200	0	125	2.2	46.0	28000	8000		4000	3.8	50L6-GT
50X6	Rectifier-Doubler	C2a	H	50.0	0.15	Rectifier-Doubler	Max. A-C Volts per Plate (RMS), 117 Max. D-C Output Ma., 75 Min. Total Effective Plate-Supply Impedance: Half-Wave, 30 ohms; Full-Wave, 15 ohms.										50X6
						Half-Wave Rectifier	Max. A-C Volts per Plate (RMS), 235 Max. D-C Output Ma. per Plate, 75 Min. Total Effect. Supply Imped. per Plate: Up to 117 volts, 15 ohms; at 150 volts, 40 ohms; at 235 volts, 100 ohms.										
50Y6-GT	Rectifier-Doubler	C3	H	50.0	0.15	Rectifier-Doubler	For other ratings, refer to Type 25Z6.										50Y6-GT

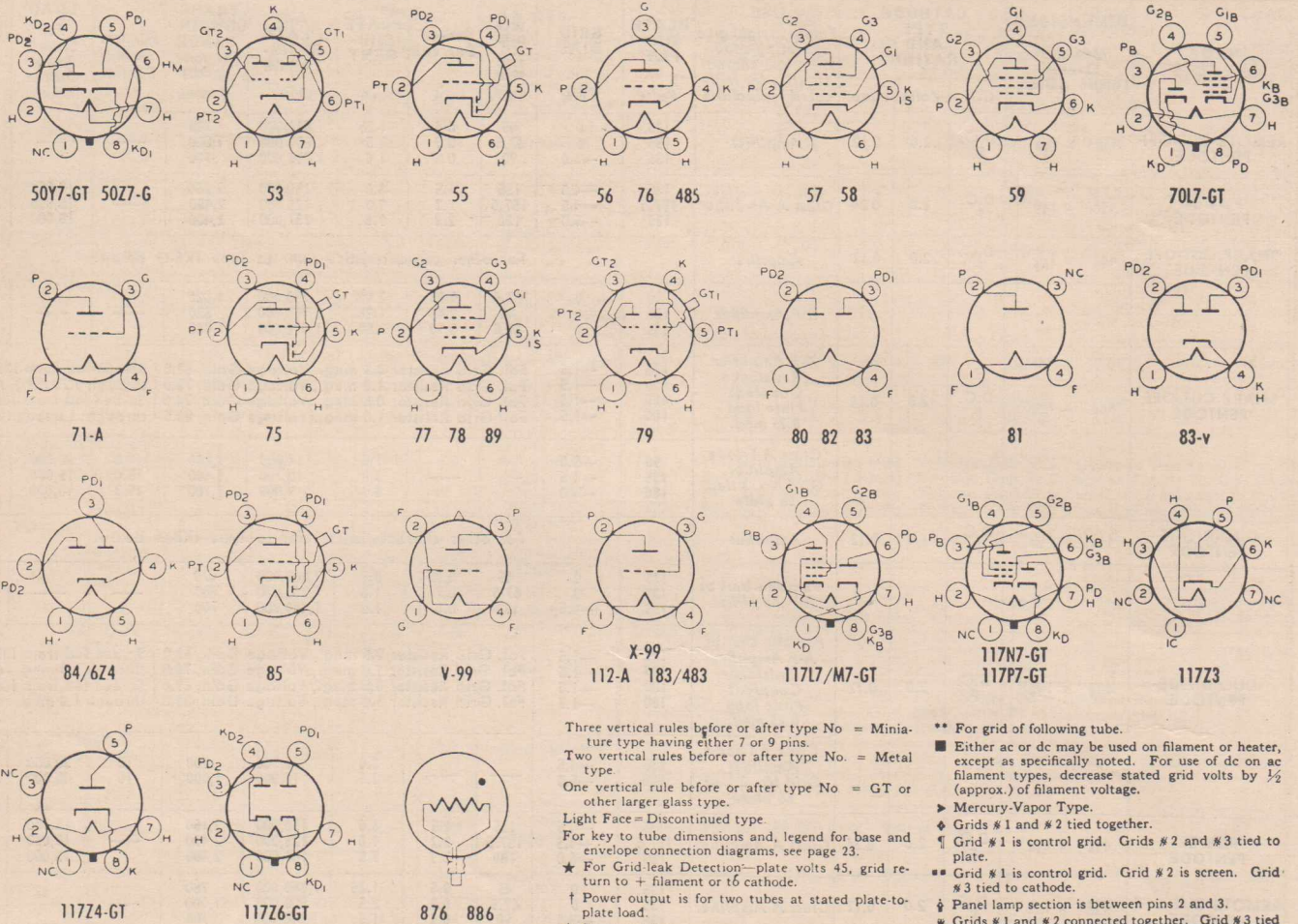
For footnotes, see preceding page.



# 50Y7-GT to 886

Type	Name	Tube Dimensions	Cathode Type and Rating			Use <i>Values to right give operating conditions and characteristics for indicated typical use</i>	Plate Supply Volts	Grid Bias Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance (Grid-plate) μmhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type	
			C. T.	Volts	Amp.													
50Y7-GT	Rectifier-Doubler Heater Tap for Pilot	C2b	H	50.0	0.15	Voltage Doubler Half-Wave Rectifier	Max. A-C Volts per Plate (RMS), 117 Max. D-C Output ma., 65	—	—	26.0	2300	2600	6.0	5000	1.25	—	50Y7-GT	
50Z7-G	Rectifier-Doubler Heater Tap for Pilot	D3	H	50.0	0.15	Voltage Doubler Half-Wave Rectifier	Max. A-C Volts per Plate (RMS), 235 Max. D-C Output Ma. per Plate, 65	—	—	35.0	55000	2500	—	6000	3.0	—	50Z7-G	
53	Twin-Triode Amplifier	D12	H	2.5	2.0	Amplifier	Max. A-C Volts per Plate (RMS), 117 Max. D-C Output Ma., 65	—	—	26.0	2300	2600	6.0	5000	1.25	—	53	
55	Duplex-Diode Triode	D9	H	2.5	1.0	Triode Unit as Amplifier	Max. A-C Volts per Plate (RMS), 117 Max. D-C Output Ma., 65	—	—	26.0	2300	2600	6.0	5000	1.25	—	55	
56	Medium-Mu Triode	D5	H	2.5	1.0	Amplifier Detector	Max. A-C Volts per Plate (RMS), 117 Max. D-C Output Ma., 65	—	—	26.0	2300	2600	6.0	5000	1.25	—	56	
57	Sharp-Cutoff Pentode	D13	H	2.5	1.0	Amplifier Detector	Max. A-C Volts per Plate (RMS), 117 Max. D-C Output Ma., 65	—	—	26.0	2300	2600	6.0	5000	1.25	—	57	
58	Remote-Cutoff Pentode	D13	H	2.5	1.0	Amplifier Mixer	Max. A-C Volts per Plate (RMS), 117 Max. D-C Output Ma., 65	—	—	26.0	2300	2600	6.0	5000	1.25	—	58	
59	Triple-Grid Power Amplifier	E3	H	2.5	2.0	Triode Class A Amplifier	250	-28.0	—	—	26.0	2300	2600	6.0	5000	1.25	59	
						Pentode Class A Amplifier	250	-18.0	250	9.0	35.0	55000	2500	—	6000	3.0		
						Triode Class B Amplifier	300 400	0	—	—	20.0 26.0	—	—	—	4600 6000	15.0 20.0		
70L7-GT	Rectifier-Beam Power Amplifier	C10	H	70.0	0.15	Amplifier Unit as Class A Amplifier Half-Wave Rectifier	110 — 7.5	110	3.0	40.0	15000	7500	—	2000	1.8	—	70L7-GT	
71-A	Power Amplifier Triode	D12	F	5.0	0.25	Class A Amplifier	90 180	-16.5 -40.5	—	—	10.0 20.0	2170 1750	1400 1700	3.0 3.0	3000 4800	0.125 0.790	—	71-A
75	Duplex-Diode High-Mu Triode	D9	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 65Q7.											75
76	Detector Amplifier Triode	D5	H	6.3	0.3	Class A Amplifier	250	-13.5	—	—	5.0	9500	1450	13.8	—	—	—	76
						Bias Detector	250	-20.0 (approx.)	—	—	—	—	—	—	—	—	—	
77	Triple-Grid Detector Amplifier	D9	H	6.3	0.3	Class A Amplifier	100 250	-1.5 -3.0	60 100	0.4 0.5	1.7 2.3	600000 1.0+§	1100 1250	—	—	—	77	
						Bias Detector	250	-1.95	50	—	—	—	—	—	—	—		—
78	Remote-Cutoff Pentode	D9	H	6.3	0.3	Amplifier Mixer	For other characteristics, refer to Type 6K7.											78
79	Twin-Triode Amplifier	D9	H	6.3	0.6	Class B Amplifier	180 250	0 0	—	—	—	—	—	—	7000 14000	5.5 8.0	—	79
80	Full-Wave Rectifier	D12	F	5.0	2.0	For other ratings, refer to Type 5Y3-GT.											80	
81	Half-Wave Rectifier	F1a	F	7.5	1.25	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 700 Max. Peak Inverse Volts, 2000					Max. D-C Output Ma., 85 Max. Peak Plate Ma., 500					81	
82	Full-Wave Rectifier	D12	F	2.5	3.0	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1550					Max. D-C Output Ma., 115 Max. Peak Plate Ma., 600 Min. Total Effect. Supply Imped. per Plate, 50 ohms.					82	
83	Full-Wave Rectifier	E3	F	5.0	3.0	With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 550 Max. Peak Inverse Volts, 1550					Max. D-C Output Ma., 115 Max. Peak Plate Ma., 600 Min. Value of Input Choke, 6 henries					83	
						With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1550					Max. D-C Output Ma., 225 Max. Peak Plate Ma., 1000 Min. Total Effect. Supply Imped. per Plate, 50 ohms.						
83-v	Full-Wave Rectifier	D12	H	5.0	2.0	With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 550 Max. Peak Inverse Volts, 1550					Max. D-C Output Ma., 225 Max. Peak Plate Ma., 1000 Min. Value of Input Choke, 3 henries					83-v	
84/6Z4	Full-Wave Rectifier	D6	H	6.3	0.5	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 325 Max. Peak Inverse Volts, 1250					Max. D-C Output Ma., 60 Max. Peak Plate Ma., 180 Min. Total Effect. Supply Imped. per Plate, 150 ohms.					84/6Z4	
						With Inductive-Input Filter	Max. A-C Plate Volts (RMS), 450 Max. Peak Inverse Volts, 1250					Max. D-C Output Ma., 60 Max. Peak Plate Ma., 180 Min. Value of Input Choke, 10 henries						
85	Duplex-Diode Triode	D9	H	6.3	0.3	Triode Unit as Class A Amplifier	135 250	-10.5 -20.0	—	—	3.7 8.0	11000 7500	750 1100	8.3 8.3	25000 20000	0.075 0.350	85	
						As Triode	160 250	-20.0 -31.0	—	—	17.0 32.0	3300 2600	1425 1800	4.7 4.7	7000 5500	0.30 0.90		
						As Pentode	100 250	-10.0 -25.0	100 250	1.6 5.0	9.5 32.0	104000 70000	1200 1800	—	—	10700 6750		0.33 3.40
89	Triple-Grid Power Amplifier	D9	H	6.3	0.4	As Triode	180	0	—	—	6.0	—	—	—	13600 9400	2.50 3.50	89	
						As Pentode	250	-25.0	—	—	—	—	—	—	—	—		—
V-99 X-99	Detector Amplifier Triode	C4 D1	D.G. F	3.3	0.063	Class A Amplifier	90	- 4.5	—	—	2.5	15500	425	6.6	—	—	V-99 X-99	
112-A	Detector Amplifier Triode	D12	D.G. F	5.0	0.25	Class A Amplifier	90 180	- 4.5 -13.5	—	—	5.0 7.7	5400 4700	1575 1800	8.5 8.5	—	—	112-A	
117L7/ M7-GT	Rectifier-Beam Power Amplifier	C6b	H	117	0.09	Amplifier Unit as Class A Amplifier	105	- 5.2	105	4.0	43.0	17000	5300	—	4000	0.85	117L7/ M7-GT	
						Half-Wave Rectifier	Max. A-C Plate Volts (RMS), 117 Max. Peak Inverse Volts, 350					Max. D-C Output Ma., 75 Max. Peak Plate Ma., 450 Min. Total Effect. Plate-Supply Imped., 15 ohms.						
117N7-GT	Rectifier-Beam Power Amplifier	C6b	H	117	0.09	Amplifier Unit as Class A Amplifier	100	- 6.0	100	5.0	51.0	16000	7000	—	3000	1.2	117N7-GT	
						Half-Wave Rectifier	Max. A-C Plate Volts (RMS), 117 Max. Peak Inverse Volts, 350					Max. D-C Output Ma., 75 Max. Peak Plate Ma., 450 Min. Total Effect. Plate-Supply Impedance 15ohms.						
117P7-GT	Rectifier-Beam Power Amplifier	C6b	H	117	0.09	Amplifier Unit as Class A Amplifier Half-Wave Rectifier	For other characteristics, refer to Type 117L7/M7-GT.											117P7-GT
117Z3	Half-Wave Rectifier	B1a	H	117	0.04	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 117 Max. Peak Inverse Volts, 330					Max. D-C Output Ma., 90 Max. Peak Plate Ma., 540 Min. Total Effect. Plate-Supply Imped., 15 ohms					117Z3	
117Z4-GT	Half-Wave Rectifier	C0	H	117.0	0.04	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 117 Max. Peak Inverse Volts, 350					Max. D-C Output ma., 90 Max. Peak Plate ma., 540 Supply Imped., 30 ohms					117Z4-GT	
117Z6-GT	Rectifier-Doubler	C3	H	117	0.075	Voltage Doubler	Max. A-C Volts per Plate (RMS), 117 Max. D-C Output Ma., 60					Min. Total Effective Plate-Supply Impedance per Plate: Half-Wave, 30 ohms; Full-Wave, 15 ohms.					117Z6-GT	
						Half-Wave Rectifier	Max. A-C Volts per Plate (RMS), 235 Max. D-C Output Ma. per Plate, 60					Min. Total Effect. Supply Imped. per Plate: Up to 117 volts, 15 ohms; at 150 volts, 40 ohms; at 235 volts, 100 ohms.						
183/ 483	Power Amplifier Triode	D12	F	5.0	1.25	Class A Amplifier	250	-60.0	—	—	30.0	1750	1700	3.0	5000	1.8	183/ 483	
485	Detector Amplifier Triode	D5	H	3.0	1.25	Class A Amplifier	180	- 9.0	—	—	5.8	8900	1400	12.5	—	—	485	
876	Current Regulator	Q1	F	—	—	Voltage Range	40 to 60 Volts					Operating Current.....1.7 Amperes					876	
886	Current Regulator	Q1	F	—	—	Voltage Range	40 to 60 Volts					Operating Current.....2.05 Amperes					886	

For footnotes, see following page



Three vertical rules before or after type No = Miniature type having either 7 or 9 pins.  
 Two vertical rules before or after type No. = Metal type.  
 One vertical rule before or after type No = GT or other larger glass type.  
 Light Face = Discontinued type.  
 For key to tube dimensions and, legend for base and envelope connection diagrams, see page 23.  
 ★ For Grid-leak Detection—plate volts 45, grid return to + filament or 16 cathode.  
 † Power output is for two tubes at stated plate-to-plate load.  
 ‡ For two tubes  
 § Megohms

\*\* For grid of following tube.  
 ■ Either ac or dc may be used on filament or heater, except as specifically noted. For use of dc on ac filament types, decrease stated grid volts by 1/2 (approx.) of filament voltage.  
 ▶ Mercury-Vapor Type.  
 † Grids #1 and #2 tied together.  
 ‡ Grid #1 is control grid. Grids #2 and #3 tied to plate.  
 ■ Grid #1 is control grid. Grid #2 is screen. Grid #3 tied to cathode.  
 † Panel lamp section is between pins 2 and 3.  
 ‡ Grids #1 and #2 connected together. Grid #3 tied to plate.  
 ◆ Panel lamp section is between pins 6 and 7.

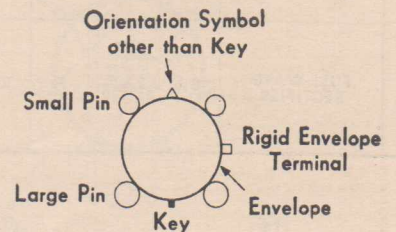
## LEGEND FOR BASE AND ENVELOPE CONNECTION DIAGRAMS

Bottom Views

### KEY TO TERMINAL DESIGNATIONS

Subscripts B, D, HP, HX, P, T, and TR indicate, respectively, beam unit, diode unit, heptode unit, hexode unit, pentode unit, triode unit, and tetrode unit in multi-unit types.

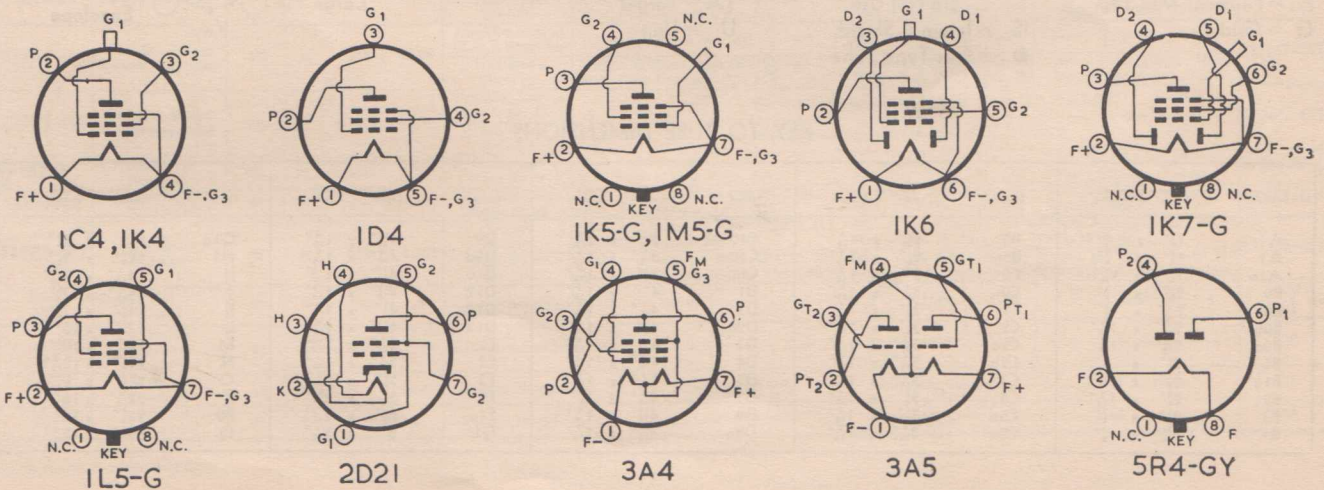
- |                                   |                                            |                            |
|-----------------------------------|--------------------------------------------|----------------------------|
| BC = Base Sleeve                  | H = Heater                                 | K = Cathode                |
| BS = Base Shell                   | H <sub>L</sub> = Heater Tap for Panel Lamp | NC = No Connection         |
| DJ = Deflecting Electrode         | H <sub>M</sub> = Heater Mid-Tap            | P = Plate (Anode)          |
| ES = External Shield              | IC = Internal Connection-Do Not Use        | RC = Ray-Control Electrode |
| F = Filament                      | IS = Internal Shield                       | S = Shell                  |
| F <sub>M</sub> = Filament Mid-Tap | ● = Gas-Type Tube                          | TA = Target                |
| G = Grid                          |                                            | U = Unit                   |



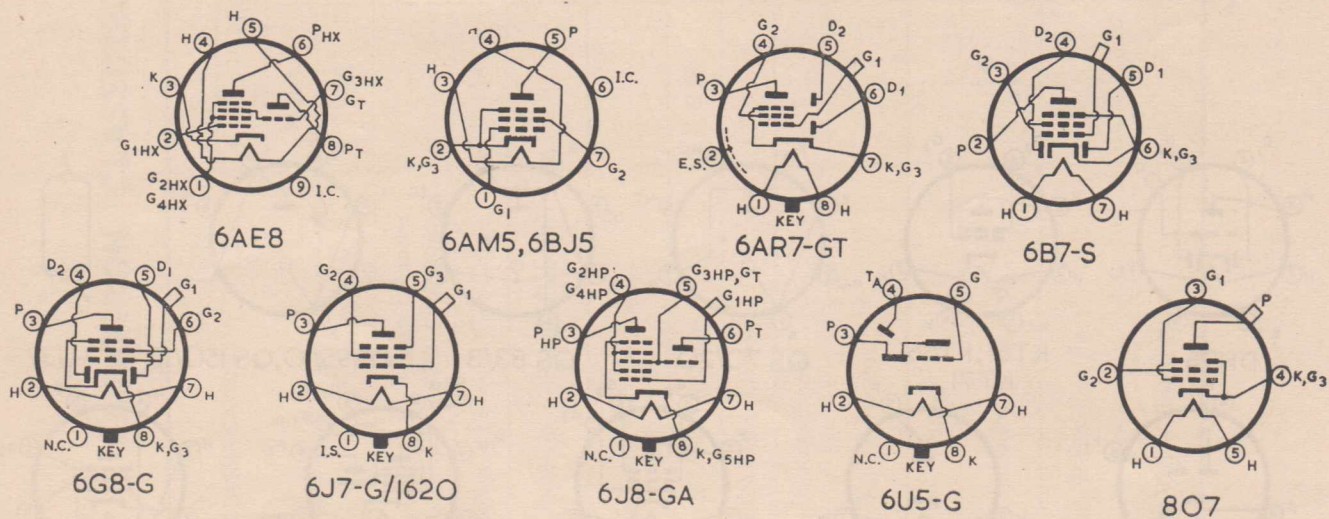
### KEY TO TUBE DIMENSIONS

Symbol	Maximum Overall Length x Diameter	Symbol	Maximum Overall Length x Diameter	Symbol	Maximum Overall Length x Diameter	Symbol	Maximum Overall Length x Diameter	Symbol	Maximum Overall Length x Diameter
A	1 3/4" x 3/8"	B5	2 3/8" x 1 1/8"	C10	3 7/8" x 1 9/16"	D9	4 17/32" x 1 9/16"	G1a	1 1/2" x 2 3/8"
A1	1 3/4" x 3/8"	B5a	2 1/2" x 1 1/8"	C10a	3 1/8" x 1 5/16"	D9a	4 19/32" x 1 9/16"	H1	1 1/2" x 5 1/8"
A1o	1 3/4" x 3/8"	C0	3" x 1 1/8"	C11	3 3/4" x 1 3/8"	D10	4 5/8" x 1 13/16"	I1	1 4 1/16" x 7 5/8"
B0	2 1/4" x 3/8"	C0a	3 1/8" x 1 1/8"	D1	4" x 1 3/8"	D12	4 11/16" x 1 13/16"	J	1 4 1/16" x 7 1/8"
B0a	2 1/4" x 3/8"	C1	3 1/8" x 1 1/8"	D2	4 1/8" x 1 9/16"	D12a	4 7/8" x 1 9/16"	K	1 4 1/16" x 7 1/8"
B0b	2 9/16" x 1 3/8"	C2	3 1/8" x 1 1/8"	D2a	4 1/8" x 1 3/8"	D13	4 13/16" x 1 16"	L	1 7 1/16" x 1 16"
B0c	2 3/8" x 1 3/8"	C2a	3 5/8" x 1 1/8"	D3	4 1/8" x 1 9/16"	E1	5 1/8" x 1 13/16"	M	1 8" x 1 10 3/8"
B1	2 5/8" x 3/8"	C2b	3 3/8" x 1 1/8"	D4	4 3/8" x 1 3/8"	E2	5 5/8" x 1 16"	N	1 9 1/8" x 1 12 1/8"
B1a	2 5/8" x 1 1/8"	C3	3 3/8" x 1 1/8"	D5	4 1/8" x 1 16"	E3	5 3/8" x 2 1/16"	O	2 1 1/8" x 9 1/8"
B2	2 5/8" x 1 1/8"	C5	3 5/8" x 1 3/8"	D7	4 1/8" x 1 16"	F1	5 1/8" x 2 1/16"	P	2 1 1/8" x 1 16"
B3	2 5/8" x 3/8"	C5a	3 1/8" x 1 3/8"	D8	4 3/8" x 1 16"	F1a	6 1/8" x 2 1/16"	Po	2 2 1/8" x 1 16"
B4	2 1/8" x 3/8"	C9a	3 1/8" x 1 3/8"	D8a	4 1/8" x 1 16"	G1	8" x 2 1/16"	Q	2 5 1/8" x 1 12 1/8"

TYPE	NAME	DIMENSIONS Maximum Overall Length x Diam.	CATHODE TYPE AND RATING			USE <i>Values to right give operating conditions and characteristics for indicated typical use</i>	PLATE SUPPLY Volts	GRID BIAS Volts	SCREEN SUPPLY Volts	Screen Current mA.	PLATE CURRENT mA.	A-C PLATE RESISTANCE Ohms	TRANS-CONDUCTANCE (or conv. cond.) $\mu$ mhos	Amplification Factor	LOAD For Stated Power Output Ohms	POWER OUTPUT Watts
			C.T.	Volts	Amp.											
1C4	REMOTE CUT-OFF PENTODE	4 1/8" x 1 1/8"	D.C. F.	2.0	0.12	Amplifier	135 135 135	0 0 -3.0	45 67.5 90	0.5 0.9 0.5	1.25 2.5 1.5	1,560,000 800,000 1,850,000	780 1,000 700	—	—	—
ID4	POWER PENTODE	4 1/8" x 1 1/8"	D.C. F.	2.0	0.24	Class A Amplifier	135 157.5 180	-4.5 -4.5 -6.0	135 157.5 180	1.5 2.2 2.3	6.0 9.0 9.5	150,000 125,000 137,000	2,150 2,400 2,400	—	15,000 15,000 15,000	0.35 0.55 0.75
1K4	SHARP CUT-OFF PENTODE	4 1/8" x 1 1/8"	D.C. F.	2.0	0.12	Amplifier	For other characteristics refer to Type 1K5-G below.									
1K5-G	SHARP CUT-OFF PENTODE	4 3/8" x 1 1/8"	D.C. F.	2.0	0.12	R-F Amplifier	90 135 135	0 0 0	67.5 45 67.5	0.95 0.48 0.93	2.48 1.25 2.50	750,000 1,750,000 1,000,000	1,020 820 1,050	—	—	—
						A-F Amplifier (Resistance Coupled) Plate load 0.25 meg.	135 135 180 180	-1.5 -1.5 -1.5 -1.5	Fol. Grid Resistor 0.5 meg., Voltage Gain, 62.5 Fol. Grid Resistor 1.0 meg., Voltage Gain, 75.0 Fol. Grid Resistor 0.5 meg., Voltage Gain, 74.0 Fol. Grid Resistor 1.0 meg., Voltage Gain, 88.5		Screen fed from 135 volts through 0.75 meg. resistor. Screen fed from 180 volts through 1.0 meg resistor.					
						Class A Triode Amplifier Grid No. 2 tied to plate	90 135 180	-3.0 -4.5 -6.0	— — —	— — —	1.5 3.5 5.9	14,800 10,700 9,000	1,000 1,400 1,700	14.8 15.0 15.3	30,000 15,000 10,000	.013 .05 0.1
						For other characteristics refer to Type 1K7-G below.										
1K6	DUO-DIODE PENTODE	4 1/8" x 1 1/8"	D.C. F.	2.0	0.12	Amplifier	For other characteristics refer to Type 1K7-G below.									
1K7-G	DUO-DIODE PENTODE	4 3/8" x 1 1/8"	D.C. F.	2.0	0.12	Pentode Unit as R-F Amplifier	135 135 135	0 0 -4.5	45 67.5 135	0.35 0.7 0.5	0.9 1.8 1.5	2,000,000 1,250,000 1,400,000	620 800 700	—	—	—
						A-F Amplifier (Resistance Coupled) Plate load 0.25 meg.	135 135 180 180	-1.5 -1.5 -1.5 -1.5	Fol. Grid Resistor 0.5 meg., Voltage Gain, 63.0 Fol. Grid Resistor 1.0 meg., Voltage Gain, 76.0 Fol. Grid Resistor 0.5 meg., Voltage Gain, 69.0 Fol. Grid Resistor 1.0 meg., Voltage Gain, 83.0		Screen fed from 135 volts through 1.0 meg. resistor. Screen fed from 180 volts through 1.0 meg. resistor.					
						Class A Triode Amplifier Grid No. 2 tied to plate	135 180	-4.5 -6.0	— —	— —	2.0 3.5	16,500 15,000	900 1,000	15 15	30,000 40,000	.038 .06
						For other characteristics refer to Type 1K7-G below.										
1L5-G	POWER PENTODE	4 3/8" x 1 1/8"	D.C. F.	2.0	0.24	Class A Amplifier	135 157.5 180	-4.5 -4.5 -6.0	135 157.5 180	1.5 2.2 2.3	6.0 9.0 9.5	150,000 125,000 137,000	2,150 2,400 2,400	—	15,000 15,000 15,000	0.35 0.55 0.75
1M5-G	REMOTE CUT-OFF PENTODE	4 3/8" x 1 1/8"	D.C. F.	2.0	0.12	Class A Amplifier	135 135 135	0 0 -3.0	45 67.5 90	0.5 0.9 0.5	1.25 2.5 1.5	1,560,000 800,000 1,850,000	780 1,000 700	—	—	—
2D21	THYRATRON TETRODE	2 1/4" x 3/4"	H.	6.3	0.6	Relay Tube and Grid-Controlled Rectifier	Max. Peak Inverse Volts, 1,300 Max. Peak Forward Volts, 650					Max. Peak Cathode Ma., 500 Average Cathode Ma., 100				
3A4	POWER AMPLIFIER PENTODE	2 1/4" x 3/4"	D.C. F.	1.4 2.8	0.2 0.1	Class A Amplifier	135 150	-7.5 -8.4	90 90	2.6 2.2	14.8 13.3	90,000 100,000	1,900 1,900	—	8,000 8,000	0.6 0.7
						R-F Power Amplifier	150	—	135	6.5	18.3	Grid Resistor, 0.2 megohm Grid Current, 0.13 ma.			—	1.2 at 10 Mc
3A5	H-F TWIN TRIODE	2 1/4" x 3/4"	D.C. F.	1.4 2.8	0.22 0.11	Each Unit as Class A Amplifier	90	-2.5	—	—	3.7	8,300	1,800	15	—	—
						Push-Pull Class C Amplifier	135	-20.0	from Grid resistor, 4,000 ohms		30.0	Grid Current, 5 ma. Driving Power, 0.2 watt			—	2.0 at 40 Mc
5R4-GY	FULL-WAVE RECTIFIER	5 1/8" x 2 1/8"	F.	5.0	2.0	With Choke Input Filter	Peak Inverse Voltage = 2800 max. volts Peak Plate Current per Plate = 650 max. mA.		R.M.S. Voltage per Plate = 1,000 max. volts. D-C Output Current = 175 max. mA. Choke Inductance = 10.0 min. henrys.							
						With Condenser Input Filter	R.M.S. Voltage per Plate = 1,000 max. volts. D-C Output Current = 150 max. mA. Filter-Input Condenser = 4 max. microfarads. Total Plate Supply Impedance per Plate = 575 min. ohms.									

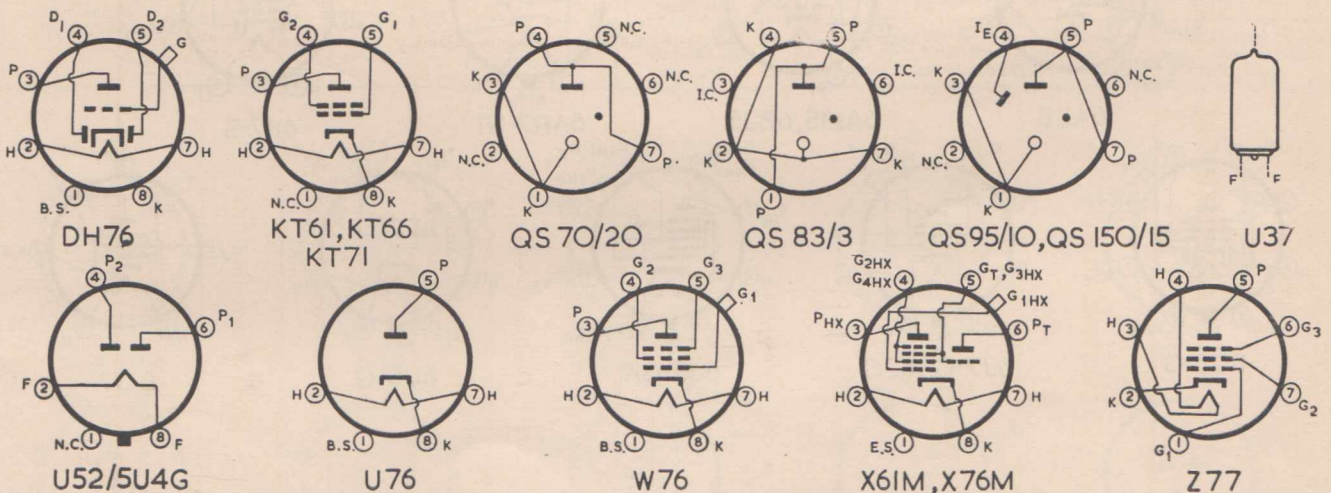


TYPE	NAME	DIMENSIONS Maximum Overall Length x Diam.	CATHODE TYPE AND RATING			USE <i>Values to right give operating condi- tions and charac- teristics for indi- cated typical use</i>	PLATE SUP- PLY Volts	GRID BIAS Volts	SCREEN SUPPLY Volts	Screen Current mA.	PLATE CUR- RENT mA.	A-C PLATE RESIS- TANCE Ohms	TRANS- CONDUCT- TANCE (or conv. cond.) μ mhos	Amplifi- cation Factor	LOAD For Stated Power Output Ohms	POWER OUT- PUT Watts	
			C.T.	Volts	Amp.												
6AE8	TRIODE-HEXODE CONVERTER	2 1/4" x 7/8"	H.	6.3	0.3	Converter	250	0	75	3.4	4.5	700,000	780	—	—	—	
6AM5	POWER PENTODE	2 1/4" x 3/4"	H.	6.3	0.2	Class A Amplifier	250	-13.5	250	2.4	16	150,000	2,600	390	16,000	1.4	
6AR7-GT	DUO-DIODE REMOTE CUT-OFF PENTODE	3 3/8" x 1 1/16"	H.	6.3	0.3	Pentode Unit as A-F Amplifier	250	-2	100	1.8	7.0	1 meg.	2,500	2,500	—	—	
6B7S	DUO-DIODE REMOTE CUT-OFF PENTODE	4 1/2" x 1 1/16"	H.	6.3	0.3	Pentode Unit as Class A Amplifier	For other characteristics refer to Type 6G8-G below.										
6BJ5	POWER PENTODE	2 3/4" x 3/4"	H.	6.3	0.64	Class A Amplifier	250	-5	250	5.5	35	40,000	10,500	420	7,000	4.0	
6G8-G	DUO-DIODE REMOTE CUT-OFF PENTODE	4 1/2" x 1 1/16"	H.	6.3	0.3	Pentode Unit as R-F Amplifier	250	-3.0	100	1.5	6.5	850,000	1,100	900	—	—	
							250	-3.0	125	2.2	9.5	510,000	1,210	600	—	—	
							135	Fol. Grid Resistor 0.5 meg., Voltage Gain 63.5									
							250	Fol. Grid Resistor 1.0 meg., Voltage Gain 75.0									
							250	Fol. Grid Resistor 0.5 meg., Voltage Gain 77.0									
							250	Fol. Grid Resistor 1.0 meg., Voltage Gain 93.0									
													Cathode Bias Resistor = 2,000 ohms. Screen-Supply Voltage Divider Net- work:—1.0 megohm to B + max. and 0.25 megohm to Earth.				
6J7-G /1620	LOW-NOISE PENTODE	4 1/2" x 1 1/16"	H.	6.3	0.3	Low-Noise Amplifier	For other characteristics refer to Type 6J7-G, see page 9.										
6J8-GA	TRIODE- HEPTODE CONVERTER	4 3/8" x 1 1/16"	H.	6.3	0.45	Heptode Unit as Mixer	250	-3.0	100	2.9	1.3	4,000,000	290	Triode Plate fed from 50,000 ohms, Current 0.4 mA.			
							250 max. volts through 20,000 ohms, Current = 5.0 mA. Oscillator (triode) Grid Resistor 50,000 ohms, Current 0.4 mA.	100	0	—	—	7.0	10,600	1,600	17	—	—
6U5-G	TUNING INDICATOR	4 5/8" x 1 1/16"	H.	6.3	0.3	Tuning Indicator	Plate and Target Supply = 100 volts. Triode Plate Resistor = 0.5 meg. Target Current = 1.0 mA. Grid Bias, -8 volts; Shadow Angle, 0°. Bias, 0 volts; Angle 90°; Plate Current, 0.19 mA.										
							Plate and Target Supply = 250 volts Triode Plate Resistor = 1.0 meg. Target Current = 4.0 mA. Grid Bias, -22 volts; Shadow Angle, 0°. Bias, 0 volts; Angle, 90°; Plate Current, 0.24 mA.										
161	BARRETTER	3 3/8" x 1 3/8"	F.	—	0.16	Current Regulator	Voltage Range, 100-200 volts. Edison Screw Base.										
302	BARRETTER	5 1/2" x 2 3/8"	F.	—	0.3	Current Regulator	Voltage Range, 112-195 volts. Edison Screw Base.										
807	POWER TETRODE	5 3/4" x 2 7/8"	H.	6.3	0.9	Class A Amplifier	275	-15	275	6.2	86	21,500	6,300	135	2,380	8.25	



# DH76 to Z77

TYPE	NAME	DIMENSIONS Maximum Overall Length x Diam.	CATHODE TYPE AND RATING			USE <i>Values to right give operating condi- tions and charac- teristics for indi- cated typical use</i>	PLATE SUP- PLY Volts	GRID BIAS Volts	SCREEN SUPPLY Volts	Screen Current mA.	PLATE CUR- RENT mA.	A-C PLATE RESIS- TANCE Ohms	TRANS- CONDUCT- TANCE (or conv. cond.) μmhos	Amplifica- tion Factor	LOAD For Stated Power Output Ohms	POWER OUT- PUT Watts
			C.T.	Volts	Amp.											
DH76	DUO-DIODE HIGH-MU TRIODE	4 3/16" x 1 1/2"	H.	13.0	0.16	250	-3	—	—	1.0	58,000	1,200	70	—	—	
KT61	POWER TETRODE	4 1/8" x 1 1/2"	H.	6.3	0.95	250	-4.3	250	7.5	40	75,000	10,500	790	6,000	4.3	
KT66	POWER TETRODE	5 5/16" x 2 1/8"	H.	6.3	1.27	250	-15	250	6.3	85	22,500	6,300	142	2,200	7.25	
KT71	POWER TETRODE	4 1/8" x 1 3/8"	H.	48.0	0.16	175	-9.8	175	12.0	70	—	—	—	2,500	5.0	
QS.70/20	VOLTAGE REGULATOR	2 1/2" x 3/4"	—	—	—	Min. D-C Starting Volts, 105. D-C Operating Current, 20 Ma. max., 2 Ma. min.							D-C Operating Volts, 70.			
QS.83/3	VOLTAGE REFERENCE VALVE	2 1/2" x 3/4"	—	—	—	Voltage Stability, 0.1%. Min. D-C Starting Volts, 130. D-C Operating Current Range, 1-5 Ma.							D-C Operating Volts, 83.			
QS.95/10	VOLTAGE REGULATOR	2 1/2" x 3/4"	—	—	—	Min. Ignition Electrode Volts, 150. Min. D-C Starting Volts, 110. D-C Operating Current, 10 Ma. max., 2 Ma. min.							D-C Operating Volts, 95.			
S.150/15	VOLTAGE REGULATOR	2 1/2" x 3/4"	—	—	—	Min. Ignition Electrode Volts, 240. Min. D-C Starting Volts, 170. D-C Operating Current, 15 Ma. max., 2 Ma. min.							D-C Operating Volts, 150.			
U37	HIGH VOLTAGE RECTIFIER	1 1/2" x 1/2"	F.	1.4	0.14	Peak Inverse Voltage, 15,000. Peak Plate Current, 12mA.							D-C Output Current, 2 mA. Surge Plate Current, 40 mA.			
U52 /5U4-G	FULL-WAVE RECTIFIER	5 5/16" x 2 1/8"	F.	5.0	2.25	With Choke Input Filter		Peak Inverse Voltage = 1430 max. volts Peak Plate Current per Plate = 770 max. mA.		R.M.S. Voltage per Plate = 500 max. volts. D-C Output Current = 250 Max. mA. Choke Inductance = 3.0 min. henrys.						
						With Condenser Input Filter				R.M.S. Voltage per Plate = 500 max. volts. D-C Output Current = 250 max. mA. Filter-Input Condenser = 8 max. microfarads. Total Plate Supply Impedance per Plate = 150 min. ohms.						
U76	HALF-WAVE RECTIFIER	3 1/2" x 1 1/8"	H.	30.0	0.16	With Condenser Input Filter		Max. A.C. R.M.S. Plate, 250 volts. Max. D-C Output, 100 mA. Max. Peak Inverse, 700 volts. Max. Peak Plate Current, 500 mA. Plate Supply Impedance, 100 ohms. Filter Input Condenser = 32 max. microfarads.								
W76	REMOTE CUT-OFF PENTODE	4 7/8" x 1 3/8"	H.	13.0	0.16	175	-2.3	100	1.7	8.5	500,000	1,500	750	—	—	
X61M	TRIODE-HEXODE CONVERTER	4 1/2" x 1 3/8"	H.	6.3	0.3	250	-3	100	2.8	3.7	700,000	620	—	—	—	
						Oscillator Plate fed from 250 volts through 30,000 ohms. Current = 3.5 mA. Oscillator Grid Resistor, 50,000 ohms. Current = 0.3 mA.										
X76M	TRIODE-HEXODE CONVERTER	4 3/8" x 1 3/8"	H.	13.0	0.16	250	-3	100	2.8	3.7	700,000	620	—	—	—	
						Oscillator Plate fed from 250 volts through 30,000 ohms. Current = 3.5 mA. Oscillator Grid Resistor, 50,000 ohms. Current = 0.3 mA.										
Y61	TUNING INDICATOR	This Valve is identical in all respects to Type 6U5-G.														
Z77	R-F AMPLIFIER PENTODE	2 1/2" x 3/4"	H.	6.3	0.3	Class A Amplifier	Pent.	250	-2	250	2.5	10	300,000	7,500	Cathode Bias Res. 160 ohms.	
						Triode	250	-2	—	—	12.5	10,000	7,500	75	Cathode Bias Res. 160 ohms	





# RADIOTRON CLASSIFIED EQUIPMENT VALVE TYPES — JAN.-JUNE, 1951

CLASSIFICATIONS	Current Receiver Equipment Types						Additional Types for T.V.	Additional Types for Miscell. Application	
	Battery		A.C.		A.C./D.C.			Miniature	Octal
	Miniature	Octal	Miniature	Octal	Miniature	Octal			
Frequency Converters	1R5	1C7-G	6BE6	6A8-G	12BE6				
			6AE8	6J8-GA X61M					
R-F Pentodes. Remote Cut-Off	1T4	1M5-G	6BA6	6U7-G	12BA6				
R-F & A-F Pentodes. Sharp Cut-Off		1K5-G	6AU6		12AU6	Z77	6J7-G 6J7-G/1620		
Double-Diode R-F Pentodes		1K7-G		6AR7-GT 6B8-G					
Diode A-F Pentodes	1S5								
Double-Diode Triodes			6AV6	6SQ7-GT	12AT6				
Double-Diodes									
Double-Triodes									
Triodes									
Output Tetrodes & Pentodes	3S4 3V4	1L5-G	6AQ6 6BJ5	6V6-GT	50C5		6AL5 6J6 12AT7	12AU7 12AX7	6SN7-GT
Half-Wave Rectifiers								6C4	
Full-Wave Rectifiers			6X4	5Y3-GT 6X5-GT		35W4			6L6-G KT66
									U52/5U4-G

N.B.—Recommended types are shown in bold face.

# RADIOTRON SUBSTITUTION CHART

The alternative valves listed below have been chosen from a comparison of electrical characteristics. It will be necessary to check the physical dimensions and basing before proceeding to make a change. Reference should also be made to the operating voltages and currents printed earlier in this booklet to determine what alterations, if any, are required.

A metallised equivalent or alternative should be sought in place of a metallised original, and vice versa. If this does not prove possible, a non-metallised valve might be used in place of a metallised valve with safety, but not necessarily vice versa. If only a metallised valve is available in place of a plain valve, any screening can should be removed.

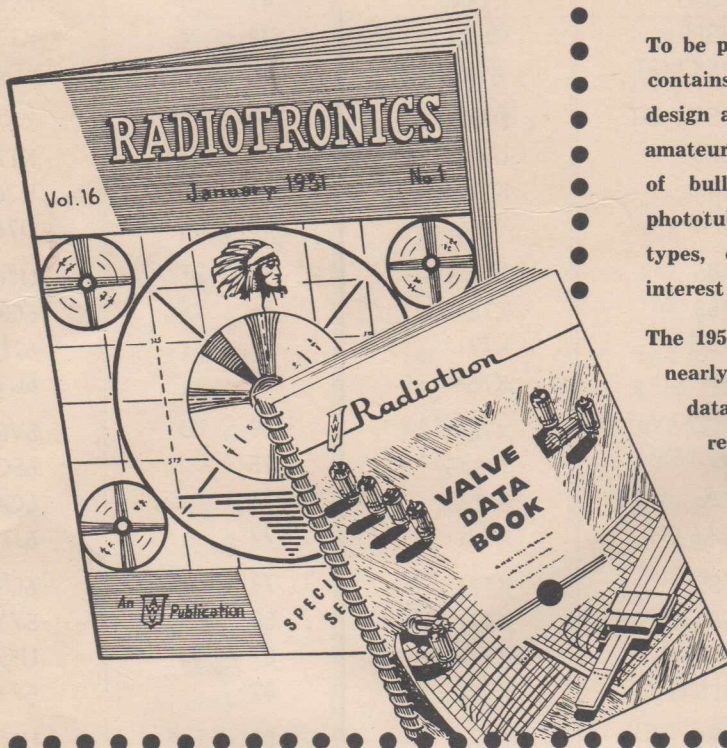
The use of equivalent or alternative radio-frequency amplifiers and converters may involve re-alignment of the receiver. Such converters, whilst probably quite satisfactory on the broadcast band, may give considerably different performance from the original on the short wave bands.

Directly and indirectly heated rectifiers may, in general, replace each other without difficulty.

Valve Type	Suggested Replacement	Valve Type	Suggested Replacement	Valve Type	Suggested Replacement
0Z4-G	6X5-GT	1LN5	1T4	6AQ6	6AV6
1A4-P	1M5-G	1N5-GT	1T4	6AQ7-GT	6SQ7-GT
1A5-GT	3V4	1P5-GT	1T4	6AR5	6AQ5
1A6	1C7-G	1Q5-GT	3V4	6AS5	6AQ5
1A7-GT	1R5	1S4	3S4	6AT6	6AV6
1B4-P	1K5-G	1T5-GT	3V4	6B4-G	KT66 (triode)
1B5/25S	1K7-G	1U4	1T4	6B5	6V6-GT
1B7-GT	1R5	1U5	1S5	6B6-G	6SQ7-GT
1C4	1M5-G	1-V	6X5-GT	6B7	6G8-G
1C5-G	3V4	2A3	KT66 (triode)	6B7S	6G8-G
1C6	1C7-G	2A5	6V6-GT	6B8	6G8-G
1D4	1L5-G	2A6	6SQ7-GT	6BH6	6AU6
1D5-GT	1M5-G	2A7	6A8-G	6BJ6	6BA6
1D7-G	1C7-G	2B7	6G8-G	6C5	6C4
1E5-GP	1K5-G	2E5	6U5-G	6C6	6J7-G
1F4	1L5-G	3LF4	3V4	6C8-G	6SN7-GT
1F5-G	1L5-G	3Q4	3V4	6D6	6U7-G
1F6	1K7-G	3Q5-GT	3V4	6D8-G	6A8-G
1F7-G	1K7-G	5T4	U52/5U4-G	6E5	6U5-G
1G5-G	1L5-G	5V4-G	U52/5U4-G	6F5-GT	6SQ7-GT
1H5-G	1S5	5W4-GT	5Y3-GT	6F6-G	6V6-GT
1H6-G	1K7-G	5X4-G	U52/5U4-G	6F8-G	6SN7-GT
1J5-G	1L5-G	5Y4-G	5Y3-GT	6G6-G	6AM5
1K4	1K5-G	5Z3	U52/5U4-G	6H6-GT	6AL5
1K6	1K7-G	5Z4	U52/5U4-G	6J5-GT	6C4
1L4	1T4	6A3	KT66 (triode)	6J8-G	X61M
1LA4	3V4	6A4	6V6-GT	6K5-GT	6SQ7-GT
1LA6	1R5	6A7	6A8-G	6K6-G	6V6-GT
1LB4	3V4	6AB5/6N5	6U5-G	6K7-G	6U7-G
1LC5	1T4	6AB7	6BA6	6K8-G	X61M
1LC6	1R5	6AC7	Z77	6L5-G	6C4
1LD5	1S5	6AE5-GT	6C4	6L6-G	KT66
1LG5	1T4	6AG6-G	KT61	6N6-G	6V6-GT
1LH4	1S5	6AK6	6AQ5	6P5-GT	6C4

Valve Type	Suggested Replacement	Valve Type	Suggested Replacement	Valve Type	Suggested Replacement
6Q7-GT	6SQ7-GT	7X7	6SQ7-GT	37	6C4
6S7-G	6U7-G	7Y4	6X5-GT	38	6V6-GT
6SA7-GT	6BE6	7Z4	5Y3-GT	39/44	6U7-G
6SC7	6SN7-GT	10	KT66 (triode)	41	6V6-GT
6SF5-GT	6SQ7-GT	12A8-GT	X76M	42	6V6-GT
6SF7	6AR7-GT	12F5-GT	DH76	43	KT71
6SG7	6BA6	12K7-GT	W76	45	KT61 (triode)
6SH7	6AU6	12K8	X76M	45Z5-GT	U76
6SL7-GT	12AX7	12Q7-GT	DH76	46	KT66 (triode)
6SS7	6SK7-GT	12SA7	X76M	47	6V6-GT
6SZ7	6SQ7-GT	12SF5	DH76	48	KT71
6T7	6SQ7-GT	12SK7-GT	W76	50	KT66 (triode)
6U5	6U5-G	12SQ7-GT	DH76	50A5	KT71
6W7-G	6J7-G	12Z3	U76	50L6-GT	KT71
6Y6-G	KT61	14A5	KT71	50X6	U76
6ZY5-G	6X5-GT	14A7	W76	50Y6-GT	U76
7A4	6C4	14B6	DH76	50Z7-G	U76
7A5	6V6-GT	14B8	X76M	56	6C4
7A6	6AL5	14C5	KT71	57	6J7-G
7A7	6SK7-GT	14J7	X76M	58	6U7-G
7A8	X61M	14Q7	X76M	59	6V6-GT
7AF7	6SN7-GT	19	1J6-G	75	6SQ7-GT
7AG7	6AU6	24A	6J7-G	76	6C4
7AH7	6BA6	25A6-GT	KT71	77	6J7-G
7B4	6SQ7-GT	25B5	KT71	78	6U7-G
7B5	6V6-GT	25B6-G	KT71	80	5Y3-GT
7B6	6SQ7-GT	25C6-G	KT71	81	U52/5U4-G
7B7	6SK7-GT	25L6-GT	KT71	82	5Y3-GT
7B8	6A8-G	25Y5	U76	83	U52/5U4-G
7C5	6V6-GT	25Z5	U76	83-V	U52/5U4-G
7C6	6SQ7-GT	25Z6-GT	U76	84	6X5-GT
7C7	6SJ7-GT	27	6C4	89	6V6-GT
7E7	6G8-G	30	1H4-G	117Z4-GT	U76
7F8	6SN7-GT	32	1K5-G	117Z6-GT	U76
7G7	6AU6	33	1L5-G	2050	2D21
7H7	6BA6	34	1M5-G	2051	2D21
7J7	X61M	35	6U7-G	DH76	12AT6
7L7	6AU6	35A5	KT71	KT61	6BJ5
7N7	6SN7-GT	35L6	KT71	KT71	50C5
7Q7	6BE6	35Y4	U76	U76	35W4
7R7	6AR7-GT	35Z3	U76	W76	12BA6
7S7	X61M	35Z4-GT	U76	X61M	6AE8
7V7	6AU6	35Z5-GT	U76	X76M	12BE6
7W7	6AU6	36	6J7-G	Y61	6U5-G

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and a New **VALVE DATA BOOK**



To be published monthly, the 1951 Radiotronics contains Articles on A-M and TV receiver design and construction—Additional articles for amateurs and experimenters—Regular mailings of bulletins on receiver and power valves, phototubes, cathode ray tubes, miscellaneous types, etc.—more short articles of practical interest to receiver designers.

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