

Sylvania

Radio Tube Characteristics Chart



Notice

This chart has been completely revised and many new and old types have been added to make it of more use to servicemen.

Please note that the inclusion of many of these old types does not mean that they are available from Sylvania. They are included for your reference in finding substitutes, etc. Consult our price list for types currently available.

The data published here have been compiled from various sources and while believed to be accurate, no responsibility can be assumed in case of error.

How To Use This Chart

The types are listed in numerical and alphabetical order because there are now so many types it is difficult to remember even the style of construction or whether it has a filament or cathode as emitter. The second column now lists the style of construction. Lock-In, Miniature and GT are, of course, well known, but the letters "T" and "ST" may need explaining. "T" means tubular bulb and "ST" is the dome topped bulb as now used in Type 6D6, 24, etc. The following number gives the nominal maximum diameter in eighths of inches.

New columns have been added to show the type of emitter, (cathode or filament), and for interelectrode capacitances on those types having capacitance ratings. On converters the capacitances shown are respectively, Signal Grid to Plate; R-F Input; and Mixer Output. The capacitance values shown are for a shielded tube when the data are available, since this is the latest standard method. Except in the case of obsolete (or newly announced) types, more complete technical data may be found in the Manual.

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**SYLVANIA
ELECTRIC**

EMPORIUM, PENNA.

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SYLVANIA ELECTRIC PRODUCTS, INC.

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SYLVANIA TUBES — AVERAGE CHARACTERISTICS

Type	Construction		Emitter		Note Capacitances in μf			Use	Plate Volts	Negative Grid Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Plate Resistance Ohms	Micromhos Mutual Conductance	Amplification Factor	Ohms Load for Stated Power Output	Undertorted Power Output Milli-watts	Type
	Style	Class	Rating Diag.	Type	Volts	Amps	Cap.													Cin.	Cout.
OAA4	ST-12	Gas Triode	4-V	Cold K														OAA4	
OB3/VR90-30	ST-12	Diode	4-W	Cold K														OB3/VR90-30	
OC3/VR105-30	ST-12	Diode	4-W	Cold K														OC3/VR105-30	
OD3/VR150-30	ST-12	Diode	4-W	Cold K														OD3/VR150-30	
OZ4	Metal	Gas Duodi.	4-R	Cold K														OZ4	
OZ4G	T-7	Gas Duodi.	4-R	Cold K														OZ4G	
O1A	ST-14	Triode	4-D	Filament	5.0	0.25	8.1	3.1	2.2									O1A	
1A3	Miniature	Diode	5-AP	Cathode	1.4	0.15												1A3	
1A4P	ST-12	Pentode	4-M	Filament	2.0	0.06	.007m	5.0	11.0									1A4P	
1A4T	ST-12	Tetrode	4-K	Filament	2.0	0.06	.010m	5.0	11.0									1A4T	
1A5GT	GT	Pentode	6-X	Filament	1.4	0.05												1A5GT	
1A6	ST-12	Heptode	6-L	Filament	2.0	0.06	0.25	10.5	9.0									1A6	
1A7GT	GT	Heptode	7-Z	Filament	1.4	0.05	0.5m	7.0	10.0									1A7GT	
1A85	Lock-in	Pentode	5-8F	Filament	1.2	0.13	0.25m	2.80	4.2									1A85	
1B4P	ST-12	Pentode	4-M	Filament	2.0	0.06	.007m	5.0*	11.0*									1B4P	
1B5/85S	ST-12	Diode-Tri.	6-M	Filament	2.0	0.06	3.6	1.6	1.9									1B5/85S	
1B7GT	GT	Heptode	7-Z	Filament	1.4	0.10	0.34	7.0	7.5									1B7GT	
1C5GT	GT	Pentode	6-X	Filament	1.4	0.10												1C5GT	
1C6	ST-12	Heptode	6-L	Filament	2.0	0.12	0.3	10.0	10.0									1C6	
1C7G	ST-12	Heptode	7-Z	Filament	2.0	0.12	0.26	10.0	14.0									1C7G	
1D5GP	ST-12	Pentode	5-Y	Filament	2.0	0.06	.007m	5.0*	12.0*									1D5GP	
1D5GT	ST-12	Tetrode	5-R	Filament	2.0	0.06	.010m	4.4	10.8									1D5GT	
1D7G	ST-12	Heptode	7-Z	Filament	2.0	0.06	0.25	10.5	9.0									1D7G	
1D8GT	GT	Diode Triode Pentode	8-AJ	Filament	1.4	0.100												1D8GT	
1E4G	GT	Triode	5-S	Filament	1.4	0.05	2.4	2.4	6.0									1E4G	
1E5GP	ST-12	Pentode	5-Y	Filament	2.0	0.06	.007m	5.5	12.0									1E5GP	
1E7G	ST-12	Duo. Pentode	8-C	Filament	2.0	0.24												1E7G	
1F4	ST-12	Pentode	5-K	Filament	2.0	0.12												1F4	
1F5G	ST-12	Pentode	6-X	Filament	2.0	0.12												1F5G	
1F6	ST-12	Diode. Pent.	6-W	Filament	2.0	0.06	.007m	4.0	9.0									1F6	
1F7G	ST-12	Duodi. Pent.	7-AD	Filament	2.0	0.06	.01m	3.8*	9.5*									1F7G	
1F7GV	ST-12	Duodi. Pent.	7-AD	Filament	2.0	0.60												1F7GV	
1G4GT	GT	Triode	5-S	Filament	1.4	0.05												1G4GT	
1G5G	ST-14	Pentode	6-X	Filament	2.0	0.12												1G5G	
1G6GT	GT	Duodiode	7-AB	Filament	1.4	0.10												1G6GT	
1H4G	ST-12	Triode	5-S	Filament	2.0	0.06												1H4G	
1H5GT	GT	Diode Triode	5-Z	Filament	1.4	0.05	1.1	0.35	4.0									1H5GT	
1H6G	ST-12	Duodiode-Tri.	7-AA	Filament	2.0	0.06	3.6	1.6	1.9									1H6G	
1J5G	ST-14	Pentode	6-X	Filament	2.0	0.12												1J5G	
1J6G	ST-12	Duodiode	7-AB	Filament	2.0	0.24												1J6G	
1L4	Miniature	Pentode	6-AR	Filament	1.4	0.05	.008m	3.8	7.5									1L4	
1LA4	Lock-in	Pentode	5-AD	Filament	1.4	0.05												1LA4	

PENNSYLVANIA TUBES — AVERAGE CHARACTERISTICS

Type	Construction		Emitter			Note (1) (2) Capacitances in $\mu\mu\text{f}$.			Use	Plate Volts	Negative Grid Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Plate Resistance Ohms	Microhms Mutual Conductance	Amplifi- cation Factor	Ohms Load for Stated Power Output	Undis- sorted Power Output Milli- watts	Type
	Style	Class	Basing Diag.	Type	Volts	Amps	Cgp.	Ch.													Cout.
1LA6	Lock-in	Heptode	7-AK	Filament	1.4	0.05	0.4	7.5	8.0	90	0.0	45	0.55	0.6	750,000	950 Δ	(G2 - 90 V. Max., 1.2 Ma.)	20,000	35	1LA6
1LB4	Lock-in	Pentode	5-AD	Filament	1.4	0.05				45	4.5	45	1.6	0.3	300,000	650		16,000	100	1LB4
1LC5	Lock-in	Pentode	7-AO	Filament	1.4	0.05	.007m	3.2	7.0	90	0.0	45	1.1	0.8	200,000	925		12,000	300	1LC5
1LC6	Lock-in	Heptode	7-AK	Filament	1.4	0.05	0.28	9.0	5.5	45	0.0	45	0.75	0.7	700,000	750	(G2 - 45 V. Max., 1.4 Ma.)			1LC6
1LD5	Lock-in	Diode Pent.	6-AX	Filament	1.4	0.05	0.18	3.2	6.0	45	0.0	45	0.35	0.12	750,000	350	(G2 - 45 V. Max., 1.4 Ma.)			1LD5
1LE3	Lock-in	Triode	4-AA	Filament	1.4	0.05	1.7	11.7	3.0	90	0.0	45	4.5	0.1	11,200	375				1LE3
1LH4	Lock-in	Diode-Triode	5-AG	Filament	1.4	0.05				90	0.0	90	0.15		240,000	375				1LH4
1LN5	Lock-in	Pentode	7-AO	Filament	1.4	0.05	.007m	3.4	8.0	90	0.0	90	1.6	0.35	1.1 Meg.	800				1LN5
1N5GT	GT	Pentode	5-Y	Filament	1.4	0.05	.007m	3.4	10.0	90	0.0	90	1.2	0.3	1.5 Meg.	750				1N5GT
1N6GT	GT	Diode Pent.	7-AM	Filament	1.4	0.05				90	4.5	90	3.4	0.7	300,000 Δ	800		25,000	100	1N6GT
1P5GT	GT	Pentode	5-Y	Filament	1.4	0.05	.007m	3.0	10.0	90	0.0	90	2.3	0.7	800,000	750				1P5GT
1O5GT	GT	Beam Amp.	6-AF	Filament	1.4	0.10				90	4.5	90	9.5	1.3	2,000	2,000				1O5GT
1R4-1294	Lock-in	H. F. Diode	4-AH	Cathode	1.4	.150				Half-Wave Cathode Type Rectifier for High Frequency Use.										1R4-1294
1R5	Miniature	Heptode	7-AT	Filament	1.4	0.05	0.4m	7.0	12.0	45	0.0	45	0.7	1.9	600,000	335 Δ				1R5
1S4	Miniature	Pentode	7-AV	Filament	1.4	0.1				45	0.0	45	1.7	3.0	500,000 Δ	300 Δ				1S4
1S5	Miniature	Diode Pent.	6-AU	Filament	1.4	0.05	0.2	2.0	4.0	45	4.5	45	3.8	0.8	100,000 Δ	1,250		8,000	65	1S5
1SA6GT	GT	Pentode	6-BD	Filament	1.4	0.05	.01m	5.2	8.6	90	7.0	67.5	7.4	1.4	100,000 Δ	1,575		8,000	270	1SA6GT
1SB6GT	GT	Diode Pent.	6-BE	Filament	1.4	0.05	0.25	3.2	3.0	67.5	0.0	67.5	1.6	0.4	600,000	625				1SB6GT
1T4	Miniature	Pentode	6-AR	Filament	1.4	0.05	.008m	3.8	7.5	45	0.0	45	1.1	0.3	700,000	750				1T4
1T5GT	GT	Beam Amp.	6-AF	Filament	1.4	0.30				45	0.0	45	1.9	0.7	350,000	700				1T5GT
1V	ST-12	Diode	4-G	Cathode	6.3	0.30				395 A. C. Volts Per Plate, RMS, 45 Ma. Output Current.	60.0	90	6.5	1.4	1,150			14,000	170	1V
2A3	ST-16	Triode	4-D	Filament	2.5	2.50	16.0	7.0	5.0	300	45.0	300	40.0	Per Tube, Push Pull, Fixed Bias	800	5,350		2,500	3,500	2A3
2A4G	ST-12	Gas Triode	5-S	Filament	2.5	2.50				350	62.0	300	40.0	Per Tube, Push Pull, Fixed Bias	800	5,350		3,000 \ddagger	15,000	2A4G
2A5	ST-14	Pentode	6-B	Cathode	2.5	1.75				Instantaneous Forward or Inverse Anode Volts = 900 Peak Anode Amps. = 1.25 Average Anode Current = 0.1 Amp. Max. Averaging Time = 45 Seconds. Cold Starting Time = 2 Seconds.										2A5
2A6	ST-12	Duodiode Tri.	6-C	Cathode	2.5	0.80	1.7	1.7	3.8	250	2.0	90	0.9		91,000	1,100				2A6
2A7, 2A7S	ST-12	Heptode	7-G	Cathode	2.5	0.80	0.3m	8.5	9.0	250	2.5	90	3.7		8,300	1,800				2A7, 2A7S
2B7, 2B7S	ST-12	Duodi. Pent.	7-D	Cathode	2.5	0.80				Characteristics Same as Type 6A7.										2B7, 2B7S
2E5	T-9	Electron Ray	6-R	Cathode	2.5	0.80				Characteristics Same as Type 6B7.										2E5
2V3G	ST-12	Duodiode	5-D	Cathode	2.5	1.35				Characteristics Same as Type 6E5.										2V3G
2W3GT	GT	Diode	4-Y	Filament	2.5	5.0				The Two Diode Plates each Draw Approximately 40.0 Ma. with 50 Volts D.C. on the Plates.										2W3GT
2X2, 879	ST-12	Diode	4-X	Filament	2.5	1.50				6000 A. C. Volts Per Plate, RMS, 35 Ma. Output Current. Condenser input to Filter.										2X2, 879
2Z2, G84	ST-12	Diode	4-AB	Cathode	2.5	1.75				350 A. C. Volts Per Plate, RMS, 35 Ma. Output Current. Condenser input to Filter.										2Z2, G84
3A4	Miniature	Pentode	4-B	Filament	2.5	1.50				4,500 A. C. Volts Per Plate, RMS, 7.5 Ma. Output Current. Condenser Input to Filter.										3A4
3A5	Miniature	Duotriode	7-BB	Filament	1.4	0.20	0.35m	4.8	7.0	135	7.5	90	14.8	2.6	90,000	1,900		8,000	600	3A4
3A8GT	GT	Diode Tri.-Pent.	8-AS	Filament	1.4	0.05	.012m	3.0	10.6	150	8.4	90	13.3	2.2	100,000	1,900		8,000	700	3A5
3B5GT	GT	Beam Amp.	7-AP	Filament	1.4	0.10				135	2.5	90	3.7		8,300	1,800				3A8GT
3B7-1291	Lock-in	Duotriode	7-BE	Filament	2.8	0.05				135	20.0	30.0	30.0		Push-Pull Class C F. Amplifier	15		20,000		3B5GT
3D6-1299	Lock-in	Beam Amp.	6-BB	Filament	1.4	.120				90	0.0	90	0.15	0.3	240,000	375				3B7-1291
3LF4	Lock-in	Beam Amp.	6-BB	Filament	1.4	0.10				45	4.5	45	4.4	0.3	100,000	1,400		8,000	70	3D6-1299
3Q4	Miniature	Pentode	7-BA	Filament	1.4	0.10				135	0	67.5	6.7	0.5	100,000	1,500		5,000	180	3LF4

(1) Values are given shielded unless marked with (*).
 (2) Converter tube capacitances given are signal grid to plate;
 RF Input; Mixer Output.
 m. maximum.
 Δ Applied through 250,000 ohms.
 \ddagger Per tube or Section—No Signal.
 \S Plate and Target Supply Voltage.
 \P With Average Power input of 320 Mw. Grid to Grid.
 \R Pentode Operation.
 \S Applied through 200,000 ohms.
 \P For two tubes with 40 volts RMS applied to each grid.
 \ddagger Approximate.
 Δ Conversion Conductance.
 150 Volts RMS applied to two grids.

SYLVANIA TUBES — AVERAGE CHARACTERISTICS

Type	Construction		Emitter			Note (1) Capacitances in $\mu\mu\text{f}$.			Use	Plate Volts	Negative Grid Volts	Screen Volts	Plate Current Mb.	Screen Current Ma.	Plate Resistance Ohms	Microhms Mutual Conductance	Amplification Factor	Ohms Load for Rated Power Output	Undistorted Power Output Milli-watts	Type
	Style	Class	Basing Diag.	Type	Volts	Amps	Co.	Cin.													Coat.
3Q5GT	GT	Beam Amp.	7-AP	Filament	1.4	0.10			Power Amp.	90	4.5	90	9.5	1.3	75,000	2,900		8,000	270	3Q5GT
354	Miniature	Pentode	7-BA	Filament	2.8	0.05			Power Amp.	90	7.0	67.5	8.0	1.0	80,000	2,000		8,000	230	354
4A6G	ST-12	Duodiode	8-L	Filament	2.0	0.12	30	5.0	7.0	90	7.0	67.5	7.4	1.4	100,000	1,575		8,000	235	4A6G
5T4	Metal	Duodiode	5-T	Filament	4.0	0.06			Rectifier	90	1.5	10.8	1.1	1.1	26,500	750	20	8,000	1,000	5T4
5U4G	ST-16	Duodiode	5-T	Filament	5.0	3.00			F-W Rect.	450 A. C. Volts Per Plate, RMS, 225 Ma. Output Current.					Condenser Input to Filter.					5U4G
5V4G	ST-14	Duodiode	5-L	Cathode	5.0	2.00			F-W Rect.	450 A. C. Volts Per Plate, RMS, 225 Ma. Output Current.					Condenser Input to Filter.					5V4G
5W4GT	GT	Duodiode	5-T	Filament	5.0	1.50			F-W Rect.	375 A. C. Volts Per Plate, RMS, 175 Ma. Output Current.					Condenser Input to Filter.					5W4GT
5X3	ST-14	Duodiode	4-C	Filament	5.0	2.0			Rectifier	400 A. C. Volts Per Plate, RMS, 110 Ma. Output Current.					Condenser Input to Filter.					5X3
5X4G	ST-16	Duodiode	5-Q	Filament	5.0	2.00			F-W Rect.	450 A. C. Volts Per Plate, RMS, 225 Ma. Output Current.					Condenser Input to Filter.					5X4G
5Y3GT	GT	Duodiode	5-T	Filament	5.0	2.00			F-W Rect.	450 A. C. Volts Per Plate, RMS, 225 Ma. Output Current.					Condenser Input to Filter.					5Y3GT
5Y4G	ST-14	Duodiode	5-Q	Filament	5.0	2.00			F-W Rect.	450 A. C. Volts Per Plate, RMS, 225 Ma. Output Current.					Condenser Input to Filter.					5Y4G
5Z3	ST-16	Duodiode	4-C	Filament	5.0	3.00			F-W Rect.	450 A. C. Volts Per Plate, RMS, 225 Ma. Output Current.					Condenser Input to Filter.					5Z3
5Z4	Metal	Duodiode	5-L	Cathode	5.0	2.00			F-W Rect.	450 A. C. Volts Per Plate, RMS, 225 Ma. Output Current.					Condenser Input to Filter.					5Z4
5Z4GT	GT	Duodiode	5-L	Cathode	5.0	2.00			F-W Rect.	450 A. C. Volts Per Plate, RMS, 225 Ma. Output Current.					Condenser Input to Filter.					5Z4GT
6A3	ST-16	Triode	4-D	Filament	6.3	1.00	16.0	7.0	5.0	250	45.0	60.0	60.0	4.2	800	5,250		2,500	3,200	6A3
6A4-LA	ST-14	Pentode	5-B	Filament	6.3	0.30			Power Amp.	325	68.0	40.0	40.0	4.2	800	5,250		3,000*	15,000	6A4-LA
6A5G	ST-16	Triode	6-T	Cathode	6.3	1.25			Power Amp.	135	9.0	135	13.0	2.8	52,600	2,100		9,500	700	6A5G
6A6	ST-14	Duodiode	7-B	Cathode	6.3	0.80			Power Amp. P.P., AB1 Amp. Driver	180	12.0	180	9.2	3.9	60,000	2,500		8,000	1,500	6A6
6A7, 6A7S	ST-12	Heptode	7-C	Cathode	6.3	0.30	0.3	8.5	9.0	250	0.0	250	17.5	4.0	800	5,250		3,500	3,750	6A7, 6A7S
6A8	Metal	Heptode	8-A	Cathode	6.3	0.30	0.6	12.0	12.0	300	5.0	300	6.0	6.0	11,300	3,100		10,000*	15,000	6A8
6A8G	GT	Heptode	8-A	Cathode	6.3	0.30	0.6	9.5	12.0	294	6.0	294	7.0	7.0	11,000	3,200		10,000*	15,000	6A8G
6A8S/6N5	GT	Heptode	8-A	Cathode	6.3	0.30	0.6	9.5	12.0	100	1.5	50	1.1	1.3	600,000	360*		7,000	3,700	6A8S/6N5
6A8T	Metal	Heptode	8-A	Cathode	6.3	0.30	0.6	9.5	12.0	250	3.0	100	3.5	2.7	360,000	550*		10,000*	8,000	6A8T
6AC5GT	GT	Triode	6-R	Cathode	6.3	0.15			Indicator	135	3.0	200	12.5	3.2	700,000*	5,000		3,500		6AC5GT
6AC7	Metal	Pentode	8-N	Cathode	6.3	0.45	0.15m	8.0	5.0	300	13	150	39.0	3.0	36,700	3,400		7,000	3,700	6AC7
6AD5G, GT	ST-12, GT	Triode	6-Q	Cathode	6.3	0.3	3.3*	4.1*	3.9*	250	1.5	250	5.0	6.5	19,000*	2,300		7,000	3,200	6AD5G, GT
6AD6G	T-9	Electron Ray	7-AG	Cathode	6.3	0.15			Indicator	100	2.0	150	10.0	2.5	750,000*	9,000	6,750*	1,500	100	6AD6G
6AD7G	ST-14	Tri. Pentode	8-AY	Cathode	6.3	0.85			Tri. Amp.	250	2.0	250	3.9	6.5	66,000	1,500		7,000	3,200	6AD7G
6AE5GT	GT	Triode	6-Q	Cathode	6.3	0.30			Amplifier	95	15	250	7.0	7.0	80,000*	2,300		7,000	3,200	6AE5GT
6AE6G	ST-12	Duo Plate Triode	7-AH	Cathode	6.3	0.15			Amplifier	250	2.0	250	3.9	6.5	66,000	1,500		7,000	3,200	6AE6G
6AE7GT	GT	Duodiode	7-AX	Cathode	6.3	0.50	2.5	3.0	1.8	250	13.5	10.0	10.0	1.4	4,650	3,000		4,650	3,000	6AE7GT
6AF5G	ST-12	Triode	6-O	Cathode	6.3	0.30			Amplifier	180	18.0	180	7.0	7.4	4,200	1,500		4,200	1,500	6AF5G
6AF6G	T-9	Twin Elec. Ray	7-AG	Cathode	6.3	0.15			Indicator	100	1.5	100	3.5	3.5	300,000*	4,750		300,000*	4,750	6AF6G
6AG5	Miniature	Pentode	7-BD	Cathode	6.3	0.30	0.25m	6.1	2.3	125	125	150	1.2	1.6	300,000*	5,100		300,000*	5,100	6AG5
6AG7	Metal	Pentode	8-Y	Cathode	6.3	0.95	0.6m	13.0	7.5	250	10.5	300	2.0	6.5	100,000	7,700		100,000	7,700	6AG7
6AH7GT	GT	Duodiode	8-BE	Cathode	6.3	0.30			Amplifier	300	10.5	300	2.0	6.5	100,000	7,700		100,000	7,700	6AH7GT
6AH5G	ST-16	Beam Amp.	6-AP	Cathode	6.3	0.9			Amplifier	150	1.0	150	1.0	2.0	800,000*	5,000		800,000*	5,000	6AH5G
6AK5	Miniature	Pentode	7-BD	Cathode	6.3	0.175	0.1	3.9	2.85	350	18	250	5.4	2.5	33,000	5,200		4,500	10,800	6AK5
6AL5	Miniature	Duodiode	6-BT	Cathode	6.3	0.30			Detector	120	1.0	120	1.5	2.5	340,000	5,000		340,000	5,000	6AL5
6AL6G	ST-16	Beam Amp.	6-AM	Cathode	6.3	0.9			Power Amp.	150	1.0	150	1.0	2.2	420,000	4,300		420,000	4,300	6AL6G
6AQ6	Miniature	Duodiode-Tri.	7-BT	Cathode	6.3	0.15	1.8	1.7	1.5	100	1.0	100	0.8	0.8	61,000	1,150		61,000	1,150	6AQ6
6B4G	ST-16	Triode	5-S	Filament	6.3	1.00	16.0	7.0	5.0	250	3.0	250	1.0	1.0	58,000	1,200		58,000	1,200	6B4G

SYLVANIA TUBES — AVERAGE CHARACTERISTICS

Type	Construction		Emitter	Capacitances in $\mu\mu\text{f}$.				Use	Plate Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Plate Resistance Ohms	Micromhos Mutual Conductance	Amplification Factor	Ohms Load for Stated Power Output	Undistorted Power Output Milli-watts	Type	
	Style	Class		Basing Diag.	Cin.		Csp.												
					Type	Volts	Amps												Csp.	Cin.	Cout.
6B5	ST-14	Duotriode	6-A5	6.3	0.80	1.7	1.7	3.8	0.9	0.9	1.7	91,000	1,100	100	300,000	685			
6B6G	ST-12	Duodiode-Tri.	7-V	6.3	0.30	0.07	3.5*	9.5*	3.0	3.0	1.7	300,000	950	100	1,000,000	686G			
6B7	ST-12	Duodi. Pent.	7-D	6.3	0.30				3.0	3.0	0.9	14,000	840		1,000,000	6B7			
6B7S									3.0	3.0	1.5	800,000	1,000			6B7S			
6B8	Metal	Duodi. Pent.	8-E	6.3	0.30	.005m	6.0	9.0	3.0	3.0	0.65	7,790	9,900	17	5,500	6B8			
6B8GT 6B8G	GT, ST-12	Duodi. Pent.	8-E	6.3	0.30	.01m	3.6	9.5	3.0	3.0	0.65	6,250	3,700	19.5	5,500	6B8GT, 6B8G			
6C4	Miniature	Triode	6-BG	6.3	0.15	1.4	1.8	2.5	3.0	3.0	0.5	10,000	9,000	20		6C4			
6C5	Metal	Triode	6-Q	6.3	0.30	2.0	3.0	11.0	8.0	8.0	0.5	10,000	9,000	20		6C5			
6C5GT	GT	Triode	6-Q	6.3	0.30	2.2	4.8	12.0	8.0	8.0	0.5	10,000	9,000	20		6C5GT			
6C6	ST-12	Pentode	6-F	6.3	0.30	.007m	5.0*	6.5*	3.0	3.0	0.5	1 Meg. +	1,185			6C6			
6C7	ST-12	Duodiode-Tri.	7-G	6.3	0.30				3.0	3.0	0.5	16,000	1,250	20		6C7			
6C8G	ST-12	Duotriode	8-G	6.3	0.30	2.6	2.6	2.2	3.0	3.0	0.5	29,500	1,600	36		6C8G			
6D4	Miniature	Gas Triode	5-A1	6.3	0.25				5.0	5.0	2.0	350,000	1,500			6D4			
6D6	ST-12	Pentode	6-F	6.3	0.30	.007m	4.7*	6.5*	3.0	3.0	2.0	350,000	1,500			6D6			
6D7	ST-12	Pentode	7-H	6.3	0.30				3.0	3.0	2.0	350,000	1,500			6D7			
6D8G	ST-12	Heptode	8-A	6.3	0.15	0.2	8.0	11.0	3.5	3.5	1.7	600,000	325A			6D8G			
6E5	T-9	Electron Ray	6-R	6.3	0.30				3.0	3.0	2.6	400,000	350A			6E5			
6E6	ST-14	Duotriode	7-B	6.3	0.60				3.0	3.0	1.5	4,300	1,400	6.0	15,000*	6E6			
6E7	ST-12	Pentode	7-H	6.3	0.30				3.0	3.0	1.5	3,500	1,700	6.0	14,000*	6E7			
6F5	Metal	Triode	5-M	6.3	0.30	2.3	5.5	4.0	3.5	3.5	2.6	600,000	325A			6F5			
6F5GT	GT	Triode	5-M	6.3	0.30	2.8*	2.9*	3.2*	3.5	3.5	2.6	600,000	325A			6F5GT			
6F6, 6F6G, 6F6GT	Metal	Pentode	7-S	6.3	0.70				3.0	3.0	1.5	80,000	2,500	100	7,000	6F6, 6F6G			
6F7, 6F7S	ST-12	Pent-Triode	7-E	6.3	0.30	.008m	3.2	12.5	3.0	3.0	1.5	80,000	2,500	100	7,000	6F7, 6F7S			
6F8	ST-12	Duotriode	8-G	6.3	0.60	3.2*	1.9*	1.9*	3.0	3.0	1.5	80,000	2,500	100	7,000	6F8			
6G6G	ST-12	Pentode	7-S	6.3	0.15				3.0	3.0	1.5	170,000	2,700			6G6G			
6H4GT	GT	Diode	5-A1	6.3	0.15				3.0	3.0	1.5	175,000	2,300			6H4GT			
6H6	Metal	Duodiode	7-Q	6.3	0.30				3.0	3.0	1.5	175,000	2,300			6H6			
6H6GT	GT	Duodiode	7-Q	6.3	0.30				3.0	3.0	1.5	175,000	2,300			6H6GT			
6J5	Metal	Triode	6-Q	6.3	0.30	3.4	3.4	3.6	3.0	3.0	1.5	7,700	2,600	20	Bias Res. 50 Ohms	6J5			
6J5GT	GT	Triode	6-Q	6.3	0.30	3.8	4.2	5.0	3.0	3.0	1.5	7,700	2,600	20	Bias Res. 50 Ohms	6J5GT			
6J6	Miniature	Duotriode	7-BF	6.3	0.45	1.4	2.3	1.6	3.0	3.0	1.5	7,700	2,600	20	Bias Res. 50 Ohms	6J6			
6J7	Metal	Pentode	7-R	6.3	0.30	.005m	7.0	12.0	3.0	3.0	0.5	10 Meg. +	1,225			6J7			
6J8G	ST-12, GT	Pentode	7-R	6.3	0.30	.007m	5.4	12.0	3.0	3.0	0.5	10 Meg. +	1,225			6J8G			
6J8GT	GT	Pentode	7-R	6.3	0.30	.009m	4.4	10.0	3.0	3.0	0.5	10 Meg. +	1,225			6J8GT			
6K5G	ST-12	Triode	5-U	6.3	0.30	2.0	2.9	5.75	3.0	3.0	1.5	78,000	900	70		6K5G			
6K5GT	GT	Triode	5-U	6.3	0.30	2.8	2.9	4.7	3.0	3.0	1.5	78,000	900	70		6K5GT			
6K6GT	GT	Pentode	7-S	6.3	0.40				3.0	3.0	1.5	104,000	1,500			6K6GT			
6K7	Metal	Pentode	7-R	6.3	0.30	.005m	7.0	12.0	3.0	3.0	1.5	300,000	1,275			6K7			
6K7G	ST-12	Pentode	7-R	6.3	0.30	.007m	5.0	12.0	3.0	3.0	1.5	300,000	1,275			6K7G			
6K7GT	GT	Pentode	7-R	6.3	0.30	.005m	4.6	12.0	3.0	3.0	1.5	300,000	1,275			6K7GT			
6K8	Metal	Tri.-Hexode	8-K	6.3	0.30	.03m	6.6	3.5	3.0	3.0	1.7	800,000	1,450			6K8			

(1) Values are given shielded unless marked with (*).
 (2) Converter tube capacitances given are signal grid to plate; r Per Tube or Section—No Signal. †† Applied through 200,000 ohms. ‡ Applied through 50,000 ohms.
 ††† Plate and Target Supply Voltage. †††† With Average Power Input of 320 Mw. Grid to Grid. ††††† Triode Operation.
 †††††† Pentode Operation.
 †††††††† For two tubes with 40 volts RMS applied to each grid. †††††††† Plate to Plate.
 ††††††††† Conversion Conductance.
 †††††††††† 50 Volts RMS applied to two grids.
 ††††††††††† Applied through 20,000 ohms.
 †††††††††††† Plate to Plate.

SYLVANIA TUBES — AVERAGE CHARACTERISTICS

Type	Construction		Emitter		Note (1) (2) Capacitances in μf .			Use	Plate Volts	Negative Grid Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Plate Resistance Ohms	Micromhos Mutual Conductance	Amplification Factor	Ohms Load for Stated Power Output	Undis- torted Power Output Milli- watts
	Style	Class	Basing Diag.	Type	Volts	Amps	Cgm.												Cin.	Cout.
6K8G	ST-12	Tri.-Hexode	8-K	Cathode	6.3	0.30	.08m	4.6	4.8	3.0	100	2.5	6.0	600,000	350A	6.0	6K8G	
6K8GT	GT						.08m	5.0	4.3	3.0	100	2.5	6.0	600,000	350A	6.0	6K8GT	
6L5G	ST-12	Triode	6-O	Cathode	6.3	0.15	2.8	2.8	5.0	9.0	4.0	8.0	10,000	1,500	15	2,500	6L5G	
6L6	Metal	Beam Amp.	7-AC	Cathode	6.3	0.90				14.0	950	72.0	5.0	92,500	5,000	17	6,500	
6L6G	ST-16									18.0	350	54.0	2.5	33,000	5,000		17,800	
6L6GA	ST-14									17.5	350	34.0	1.0	23,500	5,000		17,500	
										23.5	370	88.0	5.0	Current & Output for Two Tubes	9,000*		20,500	
										22.5	270	88.0	5.0	Current & Output for Two Tubes	3,800*		47,000	
6L7	Metal	Heptode	7-T	Cathode	6.3	0.30	.001m	7.5	11.0	Characteristics Same as Type 6L7G, Except Capacitances.								6L7
6L7G	ST-12	Heptode	7-T	Cathode	6.3	0.30	.005m	6.0	10.0	6.0	150	3.3	9.9	1 Meg.	350A	1.5	7,000	6L7G
6N6G	ST-14	Duotriode	7-AU	Cathode	6.3	0.80				3.0	100	5.3	6.5	600,000	1,100		4,000	6N6G
6N7	Metal	Duotriode	8-B	Cathode	6.3	0.80				0.0	(Input Section)		8.0	24,000*	2,400	58	7,000	6N7
6N7GT	GT									0.0	(Output Section)		45.0	2,400	58	7,000	4,000	6N7GT
6P5GT	GT	Triode	6-O	Cathode	6.3	0.30	2.6	3.4	5.5	0.0	17.5 Per Plate, Class B Operation, Zero Signal	7.0	35	8,000*	10,000		10,000	
6P7G	ST-12	Pent.-Triode	7-U	Cathode	6.3	0.30	.007m	2.8	2.5	6.0	7.0	7.0	11,300	3,100	35	(Class A Driver)	6P7G	
6Q7	Metal	Duotriode-Tri.	7-V	Cathode	6.3	0.30	1.4	5.0	3.8	0.0	17.5 Per Plate, Class B Operation, Zero Signal	7.0	35	8,000*	10,000		10,000	
6Q7G	ST-12	Duotriode-Tri.	7-V	Cathode	6.3	0.30	1.5	3.2	5.0	5.0	7.0	7.0	11,300	3,100	35	(Class A Driver)	6Q7G	
6Q7GT	GT									6.0	7.0	7.0	11,300	3,100	35	(Class A Driver)	6Q7GT	
6R6G	ST-12	Pentode	6-W	Cathode	6.3	0.3	.007m	4.5*	11.0*	1.5	0.35	8.5	88,000	800	70		6R6G	
6R7	Metal	Duotriode-Tri.	7-V	Cathode	6.3	0.30	2.3	4.8	3.8	3.0	100	7.0	800,000	1,450	1,160		6R7	
6R7GT	GT									3.0	100	7.0	800,000	1,450	1,160		6R7GT	
6S7	Metal	Duotriode-Tri.	7-V	Cathode	6.3	0.30	2.1	6.6	5.2	9.0	9.5	8.5	8,500	1,900	16		6S7	
6S7GT	ST-12	Pentode	7-R	Cathode	6.3	0.15	.005m	6.5	10.5	3.0	67.5	3.7	0.9	1 Meg.	1,950	375	6S7GT	
6S7G	ST-12	Pentode	7-R	Cathode	6.3	0.15	.008m	4.4	8.0	3.0	100	8.5	2.0	1 Meg.	1,750	1,100	6S7G	
6SA7	Metal	Heptode	8-R	Cathode	6.3	0.30	.13m	9.5	12.0	2.0	67.5	3.7	0.9	1 Meg.	1,950	375	6SA7	
6SA7GT	GT	Heptode	8-AD	Cathode	6.3	0.30	.5m	11.0	11.0	2.0	100	8.5	2.0	1 Meg.	1,750	1,100	6SA7GT	
6SC7	Metal	Duotriode	8-S	Cathode	6.3	0.30	2.0	9.2	3.0	2.0	2.0	2.0	53,000	1,325	70	(Each Triode)	6SC7	
6SC7GT	GT									2.0	2.0	2.0	53,000	1,325	70	(Each Triode)	6SC7GT	
6SD7GT	GT	Pentode	8-N	Cathode	6.3	0.30	.0035	9.0	7.5	2.0	5.7	2.0	250,000*	3,350	70		6SD7GT	
6SE7GT	GT	Pentode	8-N	Cathode	6.3	0.3	.0035m	6.0	7.5	2.0	5.7	2.0	250,000*	3,350	70		6SE7GT	
6SF5	Metal	Triode	6-AB	Cathode	6.3	0.30	2.4	4.0	3.6	1.0	1.0	1.0	350,000*	4,25A	100		6SF5	
6SF5GT	GT									1.0	1.0	1.0	350,000*	4,25A	100		6SF5GT	
6SF7	Metal	Diode Pent.	7-AZ	Cathode	6.3	0.30	.004m	5.5	6.0	1.0	19	12.4	3.4	800,000*	1,975		6SF7	
6SG7	Metal	Pentode	8-BK	Cathode	6.3	0.30	.003m	8.5	7.0	1.0	100	12.4	3.3	700,000*	2,050		6SG7	
6SG7GT	GT									1.0	100	12.4	3.3	700,000*	2,050		6SG7GT	
6SH7	Metal	Pentode	8-BK	Cathode	6.3	0.30	.003m	8.5	7.0	1.0	100	8.2	3.2	350,000*	4,100		6SH7	
6SH7GT	GT									1.0	100	8.2	3.2	350,000*	4,100		6SH7GT	
6SJ7	Metal	Pentode	8-N	Cathode	6.3	0.30	.005m	6.0	7.0	1.0	15	11.8	4.4	900,000*	4,700		6SJ7	
6SJ7GT	GT									1.0	100	9.2	3.4	1 Meg.	4,000		6SJ7GT	
6SK7	Metal	Pentode	8-N	Cathode	6.3	0.30	.003m	6.0	7.0	1.0	100	9.2	3.4	1 Meg.	4,000		6SK7	
6SK7GT	GT									1.0	100	9.2	3.4	1 Meg.	4,000		6SK7GT	
6SL7GT	GT	Duotriode	8-BD	Cathode	6.3	3.00				1.0	100	5.3	2.1	350,000*	4,000		6SL7GT	
6SN7GT	GT	Duotriode	8-BD	Cathode	6.3	.600	3.8*	4.0*	1.5*	1.0	100	10.8	4.1	900,000*	4,900		6SN7GT	
6SQ7	Metal	Duotriode-Tri.	8-O	Cathode	6.3	0.30	1.6	3.2	3.0	1.0	100	5.3	2.1	350,000*	4,000		6SQ7	
6SR7	Metal	Duotriode-Tri.	8-Q	Cathode	6.3	0.30	1.8	4.2	3.4	1.0	100	10.8	4.1	900,000*	4,900		6SR7	
6SR7GT	GT									1.0	100	10.8	4.1	900,000*	4,900		6SR7GT	
6SS7	Metal	Duotriode-Tri.	8-Q	Cathode	6.3	0.30	2.3	3.5	3.8	3.0	2.9	0.9	700,000*	1,575	16		6SS7	
6ST7	Metal	Pentode	8-N	Cathode	6.3	0.15	.004m	5.5	7.0	3.0	3.0	0.8	1.5 Meg.	1,650	100		6ST7	
6T5	Metal	Duotriode-Tri.	8-R	Cathode	6.3	0.15	1.5	2.8	3.0	0.0	0	9	2.6	44,000	1,600	70		6T5
6T7G	ST-12	Electron Ray	6-Q	Cathode	6.3	0.3				9.0	9.5	3.1	2.0	1,000,000*	1,850	16.0		6T7G
	ST-12	Duotriode-Tri.	7-V	Cathode	6.3	0.15	1.7	1.8	3.1	1.5	0.3	0.2	8.500	1,900	16.0		6T7G	

SYLVANIA TUBES — AVERAGE CHARACTERISTICS

Type	Construction		Emitter		Note (1) (2) Capacitances in $\mu\mu\text{f}$.			Use	Plate Volts	Negative Grid Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Plate Resistance Ohms	Micromhos Mutual Conductance	Amplification Factor	Ohms Load for Stated Power Output	Undistorted Power Output Milli-watts	Type
	Style	Class	Rating Diag.	Type	Volts	Amps	Cap.													Cin.	Cout.
6U5/6G5	T-9	Electron Ray	6-R	Cathode	6.3	0.30		Indicator	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		44.0 4.0 3.0 3.0	10,000* 5,600 250,000 1,500 800,000				2,000 2,000 3,000	6U5/6G5		
6U6GT	GT	Beam Amp.	7-AC	Cathode	6.3	0.75		Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		44.0 4.0 3.0 3.0	10,000* 5,600 250,000 1,500 800,000				2,000 2,000 3,000	6U6GT		
6U7G	ST-12	Pentode	7-R	Cathode	6.3	0.30	.007m	Amplifier	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.0 2.2 2.2 2.0	250,000 1,500 800,000					6U7G		
6V6	Metal	Beam Amp.	7-AC	Cathode	6.3	0.45	0.3	Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6V6		
6V6GT	GT	Beam Amp.	7-AC	Cathode	6.3	0.45	0.7*	Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6V6GT		
6V7G	ST-12	Duodiode-Tri.	7-V	Cathode	6.3	0.30	1.3	Det.-Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6V7G		
6W5G	ST-12	Duodiode	6-S	Cathode	6.3	0.9		Rectifier	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6W5G		
6W6GT	GT	Beam Amp.	7-AC	Cathode	6.3	1.25		Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6W6GT		
6W7G	ST-12	Pentode	7-R	Cathode	6.3	0.15	.007m	Amplifier	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6W7G		
6X5	Metal	Duodiode	6-S	Cathode	6.3	0.60		F-W Rect.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6X5		
6X5GT	GT	Duodiode	6-S	Cathode	6.3	0.60		F-W Rect.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6X5GT		
6Y3G	ST-12	Diode	4-AC	Cathode	6.3	0.7		Rectifier	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6Y3G		
6Y5	ST-12	Duodiode	6-J	Cathode	6.3	0.80		F-W Rect.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6Y5		
6Y6G	ST-14	Beam Amp.	7-AC	Cathode	6.3	1.25		Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6Y6G		
6Y7G	ST-12	Duotriode	8-B	Cathode	6.3	0.60		Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6Y7G		
6Z5	ST-12	Duodiode	6-K	Cathode	6.3	0.80		F-W Rect.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6Z5		
6ZY5G	ST-12	Duodiode	6-S	Cathode	6.3	0.30		F-W Rect.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6ZY5G		
6Z7G	ST-12	Duotriode	8-B	Cathode	6.3	0.30		Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 2.0	250,000 1,500 800,000					6Z7G		
7A4	Lock-in	Triode	5-AC	Cathode	6.3	0.30	4.0	Amplifier	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		9.0 9.0	6,700 3,000 2,600 2,000					7A4		
7A5	Lock-in	Beam Amp	6-AA	Cathode	6.3	0.75	0.44	Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		40.0 3.0 3.3	14,000 5,800 6,000					7A5		
7A6	Lock-in	Duodiode	7-AJ	Cathode	6.3	0.15		Det.-Rect.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		4.0 2.0	180,000* 800,000*					7A6		
7A7	Lock-in	Pentode	8-V	Cathode	6.3	0.30	2.3	Amplifier	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		9.2 2.6	6,500 2,600 8,400 1,900 7,600					7A7		
7AF7	Lock-in	Duotriode	8-AC	Cathode	6.3	0.30	0.30	Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		44.0 4.0	17,000 6,000					7AF7		
7A8	Lock-in	Octode	8-U	Cathode	6.3	0.15	0.15m	Converter	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		1.8 3.2	650,000* 700,000*					7A8		
7B4	Lock-in	Triode	5-AC	Cathode	6.3	0.30	1.6	Amplifier	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		0.4 0.9	85,000 1,150 66,000 1,500					7B4		
7B5	Lock-in	Pentode	6-AE	Cathode	6.3	0.40	0.8	Power Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		1.6 5.5 4.0	104,000 1,500 2,300 2,100					7B5		
7B6	Lock-in	Duodiode-Tri.	8-W	Cathode	6.3	0.30	1.6	Det.-Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		0.4 0.9	110,000 900 91,000 1,100					7B6		
7B7	Lock-in	Pentode	8-V	Cathode	6.3	0.15	.007m	Amplifier	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		8.2 8.5	300,000 1,675 750,000 1,750					7B7		
7B8	Lock-in	Heptode	8-X	Cathode	6.3	0.30	0.2m	Converter	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		1.1 3.3	600,000 360* 360,000 550*					7B8		
7C4-1203A	Lock-in	H. F. Diode	4-AH	Cathode	6.3	0.15		Detector	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		3.0 2.7	58,000 3,700 52,000 4,100 52,000 4,500 52,000 4,500					7C4-1203A		
7C5	Lock-in	Beam Amp	6-AA	Cathode	6.3	0.45	0.40	Power Amp. Class A	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		3.0 4.5 4.2	58,000 3,700 52,000 4,100 52,000 4,500 52,000 4,500					7C5		
7C6	Lock-in	Duodiode-Tri.	8-W	Cathode	6.3	0.15	1.6	Det. Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		1.0 1.3	100,000 850 100,000 1,000					7C6		
7C7	Lock-in	Pentode	8-V	Cathode	6.3	0.15	.007m	Amplifier	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		1.8 0.4 0.5	300,000 1,675 750,000 1,750					7C7		
7E5-1201	Lock-in	Triode	8-BN	Cathode	6.3	0.15	1.5	Osc. Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		13.0 16.0	300,000 1,675 750,000 1,750					7E5-1201		
7E6	Lock-in	Duodiode-Tri.	8-W	Cathode	6.3	0.30	1.5	Det. Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		9.5 9.5	110,000 900 91,000 1,100					7E6		
7E7	Lock-in	Duodi. Pent.	8-AE	Cathode	6.3	0.30	.005m	Det. Amp.	100; 950; 110 10.5 110 14.0 135 200 3.0 100 3.0 100 3.0 100		10.0 7.5	150,000* 1,600 700,000* 1,300					7E7		

(1) Values are given shielded unless marked with (*).
 (2) Converter tube capacitances given are signal grid to plate, RF input, Mixer Output.
 m maximum.
 *Applied through 250,000 ohms.
 †Per tube or Section—No Signal.
 ‡Plate and Target Supply Voltages.
 §With Average Power Input of 380 Mw. Grid to Grid.
 ¶Triode Operation.
 ††Applied through 200,000 ohms.
 ‡‡Applied through 20,000 ohms.
 †††Applied through 40 volts RMS applied to each grid.
 ††††Approximate.
 †††††Conversion Conductance.
 †††††150 Volts RMS applied to two grids.

SYLVANIA TUBES — AVERAGE CHARACTERISTICS

Type	Construction		Emitter		Note (1) (2) Capacitances in $\mu\mu\text{f}$.			Use	Plate Volts	Negative Grid Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Plate Resistance Ohms	Micromhos Mutual Conductance	Amplification Factor	Ohms Load for Stated Power Output	Undistorted Power Output Milli-watts	Type
	Style	Class	Basing Diac.	Type	Volts	Amps	Cap.													Cin.	Cont.
1F7	Lock-in	Duotriode	8-AC	Cathode	6.3	0.30	1.6	2.4	2.0	1.0	100	0.65	62,000	1,195	70	.....	7F7	
1F8	Lock-in	Duotriode	8-BW	Cathode	6.3	0.30	1.2	2.8	1.4	2.0	10.5	.....	44,000	1,600	70	.....	7F8
1G7/1232	Lock-in	Pentode	8-V	Cathode	6.3	0.45	.007m	9.0	7.0	2.0	6.0	2.0	800,000	5,300	50	(Cathode Bias Resistor = 200 Ohms)	7G7/1232		
1G8/1206	Lock-in	Duotriode	8-BV	Cathode	6.3	0.30	0.15m	3.4	2.6	2.5	100	4.5	225,000	4,500	.....	.....	7G8/1206
1H7	Lock-in	Pentode	8-V	Cathode	6.3	0.30	.007m	8.0	7.0	1.0	8.9	3.3	950,000	4,800	.....	.....	7H7
1J7	Lock-in	Tri-Heptode	8-BL	Cathode	6.3	0.30	.03m	4.6	7.5	3.0	1.5	2.6	500,000	3,800	.....	.....	7J7
										3.0	1.4	2.8	1.5 Meg.	3,800	.....	.....	
										0.05 Meg.	100	3.2	(Triode Grid Current 0.3 Ma.)	3,000	.....	.....	
										0.05 Meg.	250	5.0	(Triode Grid Current 0.4 Ma.)	3,100	.....	.....	
1K7	Lock-in	Duodiode-Tri.	8-BF	Cathode	6.3	0.30	1.8	2.6	3.0	2.0	9.4	9.4	44,000	1,600	70	.....	7K7	
1L7	Lock-in	Pentode	8-V	Cathode	6.3	0.30	.010m	8.0	6.5	1.0	5.5	5.5	100,000	3,000	.....	.....	7L7
1N7	Lock-in	Duotriode	8-AC	Cathode	6.3	0.60	3.0	3.4	9.0	0.0	10.0	10.0	5,700	3,000	20	.....	7N7	
1Q7	Lock-in	Heptode	8-AL	Cathode	6.3	0.30	0.20m	9.0	9.0	2.0	3.3	8.5	500,000	5,950	.....	.....	7Q7
1R7	Lock-in	Duodi. Pent.	8-AE	Cathode	6.3	0.30	.004m	5.6	5.3	2.0	3.5	3.5	1.0 Meg.	550	.....	.....	7R7
1S7	Lock-in	Tri-Heptode	8-BL	Cathode	6.3	0.30	.03m	5.0	8.0	2.0	1.9	3.0	500,000	500	.....	.....	7S7
										0.05 Meg.	100	1.8	1.25 Meg.	525	.....	.....	
										0.05 Meg.	250	5.0	(Triode Grid Current 0.3 Ma.)	525	.....	.....	
1T7	Lock-in	Pentode	8-V	Cathode	6.3	0.3	.005m	8.0	7.0	1.0	10.8	4.1	900,000	4,900	.....	.....	7T7
1V7	Lock-in	Pentode	8-V	Cathode	6.3	0.45	.004m	9.5	6.5	1.0	5.3	2.1	350,000	4,000	.....	.....	7V7
1W7	Lock-in	Pentode	8-BJ	Cathode	6.3	0.45	.0055m	9.5	7.0	3.0	10.0	3.9	300,000	5,800	.....	.....	7W7
1X7/XXFM	Lock-in	Duodiode-Tri.	8-BZ	Cathode	6.3	0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7X7/XXFM
1Y4	Lock-in	Duodiode	5-AB	Cathode	6.3	0.50	85,000	1,000	85	7Y4	
1Z4	Lock-in	Duodiode	5-AB	Cathode	6.3	0.90	67,000	1,500	100	7Z4	
10	ST-16	Triode	4-D	Filament	7.5	1.25	7.0*	4.0*	3.0*	23.5	100	100	6,000	1,330	8.0	13,000	400	10	
										39.0	160	160	5,150	1,550	8.0	11,000	900		
										42.5	40.0	18.0	5,000	1,600	8.0	10,200	1,600		
12A	ST-14	Triode	4-D	Filament	5.0	0.25	8.5*	4.0*	2.0*	4.5	5.0	5.0	5,400	1,575	8.5	5,000	35	12A	
										135	9.0	6.9	5,100	1,650	8.5	9,000	130		
										180	11.5	7.7	4,700	1,800	8.5	10,650	285		
12A5	ST-12	Pentode	7-F	Cathode	12.6	0.30	0.3	9.0	9.0	15.0	17.0	3.0	50,000	1,700	4,500	800	12A5	
12A6	Metal	Beam Amp.	7-AC	Cathode	12.6	0.15	25.0	180	45.0	8.0	35,000	2,400	3,300	3,400	
12A7	ST-12	Diode-Pent.	7-K	Cathode	12.6	0.30	25.0	250	30	3.5	70,000	3,000	7,500	3,400	
12A8GT	GT	Heptode	8-A	Cathode	12.6	0.15	.26	9.5	12.0	125 RMS	135	30.0 Max.	105,000	975	100	13,500	550	12A8GT
12A8GT	GT	Duotriode	8-BE	Cathode	12.6	0.15	3.0	2.8	2.6	Characteristics Same as Type 6A8G.	12A8GT
12B8GT	GT	Pentode Tri.	8-T	Cathode	12.6	0.30	.015*	5.2*	9.6*	100	3.7	3.7	10,300	1,550	16	12B8GT	
12C8	Metal	Duodiode Pentode	8-E	Cathode	12.6	0.15	.005m	6.0	9.0	100	8.0	0.6	170,000	2,100	360	12C8	
										100	3.6	7.6	73,000	110	110		
										180	6.5		
12F5GT	GT	Triode	5-M	Cathode	12.6	0.15	2.8*	2.2*	3.2*	Characteristics Same as Type 6F5GT.	12F5GT
12H6	Metal	Duodiode	7-Q	Cathode	12.6	0.15	Characteristics Same as Type 6H6.	12H6
12J5GT	GT	Triode	6-Q	Cathode	12.6	0.15	3.8	4.2	5.0	Characteristics Same as Type 6J5GT.	12J5GT
12J7GT	GT	Pentode	7-R	Cathode	12.6	0.15	.007m	5.4	12.0	Characteristics Same as Type 6J7GT.	12J7GT
12K7GT	GT	Pentode	7-R	Cathode	12.6	0.15	.007m	5.0	12.0	Characteristics Same as Type 6K7GT.	12K7GT
12K8	Metal	Tri-Heptode	8-K	Cathode	12.6	0.15	0.3m	6.6	3.5	Characteristics Same as Type 6K8GT.	12K8
12K8GT	GT	Tri-Heptode	8-K	Cathode	12.6	0.15	.008m	5.0	4.3	Characteristics Same as Type 6K8GT.	12K8GT
12L8GT	GT	Duo. Pentode	8-BU	Cathode	12.6	0.15	0.7*	5.0*	6.0*	Characteristics Same as Type 6L8GT.	12L8GT
										110	5.5	11.0	980,000	1,680	13	14,000	300		
										180	9.0	13.0	160,000	2,150	2.8	10,000	1,000		
12Q7GT	GT	Duodiode-Tri.	7-V	Cathode	12.6	0.15	1.6	2.2	5.0	Characteristics Same as Type 6Q7GT.	12Q7GT
12SA7	Metal	Heptode	8-R	Cathode	12.6	0.15	1.3m	9.5	12.0	Characteristics Same as Type 6SA7.	12SA7
12SA7GT	GT	Heptode	8-AD	Cathode	12.6	0.15	5.0	11.0	11.0	Characteristics Same as Type 6SA7GT.	12SA7GT
12SC7	Metal	Duotriode	8-S	Cathode	12.6	0.15	2.0	2.2	3.0	Characteristics Same as Type 6SC7.	12SC7
12SF5	Metal	Triode	6-AB	Cathode	12.6	0.15	2.4	4.0	3.6	Characteristics Same as Type 6SF5.	12SF5
12SF5GT	GT	Triode	6-AB	Cathode	12.6	0.15	2.6	4.2	3.8	Characteristics Same as Type 6SF5GT.	12SF5GT

PENNSYLVANIA TUBES — AVERAGE CHARACTERISTICS

Type	Construction		Emitter		Note Capacitances in $\mu\mu\text{f}$.			Use	Plate Volts	Negative Grid Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Plate Resistance Ohms	Microhms Mutual Conductance	Amplification Factor	Ohms Load for Stated Power Output	Underscored Power Output Milli-watts	Type
	Style	Class	Basing	Type	Volts	Amps	Cgp.													Ch.	Cout.
12SF7	Metal	Diode Pent.	7-AZ	Cathode	12.6	0.15	.004m	5.5	6.0									12SF7	
12SG7	Metal	Pentode	8-BK	Cathode	12.6	0.15	.003m	8.5	7.0									12SG7	
12SH7	Metal	Pentode	8-BK	Cathode	12.6	0.15	.003m	8.5	7.0									12SH7	
12SH7GT	GT	Pentode	8-BK	Cathode	12.6	0.15	.004m	8.5	7.0									12SH7GT	
12SJ7	Metal	Pentode	8-N	Cathode	12.6	0.15	.003m	6.0	7.0									12SJ7	
12SJ7GT	GT	Pentode	8-N	Cathode	12.6	0.15	.003m	6.3	7.5									12SJ7GT	
12SK7	Metal	Pentode	8-N	Cathode	12.6	0.15	.003m	6.0	7.0									12SK7	
12SK7GT	GT	Pentode	8-N	Cathode	12.6	0.15	.003m	6.5	7.5									12SK7GT	
12SL7GT	GT	Duotriode	8-BD	Cathode	12.6	0.15	.003m											12SL7GT	
12SN7GT	GT	Duotriode	8-BD	Cathode	12.6	0.30												12SN7GT	
12SQ7	Metal	Duodiode-Tri.	8-Q	Cathode	12.6	0.15	1.6	3.2	3.0									12SQ7	
12SQ7GT	GT	Duodiode-Tri.	8-Q	Cathode	12.6	0.15	1.8	4.2	3.4									12SQ7GT	
12SR7	Metal	Duodiode-Tri.	8-Q	Cathode	12.6	0.15	2.3	3.0	3.0									12SR7	
12Z3	ST-13	Diode	4-U	Cathode	12.6	0.30												12Z3	
14A4	Lock-in	Triode	5-AC	Cathode	12.6	0.15	4.0	3.4	3.0									14A4	
14A5	Lock-in	Beam Amp.	6-AA	Cathode	12.6	0.15	0.4	6.8	7.0									14A5	
14A7/18B7	Lock-in	Pentode	8-V	Cathode	12.6	0.15	.005m	6.0	7.0									14A7/18B7	
14AF7/XXD	Lock-in	Duotriode	8-AC	Cathode	12.6	0.15	2.3	2.2	1.6									14AF7/XXD	
14B6	Lock-in	Duodiode-Tri.	8-W	Cathode	12.6	0.15	1.5	3.0	2.4									14B6	
14B8	Lock-in	Heptode	8-X	Cathode	12.6	0.15	0.2m	10.0	9.0									14B8	
14C5	Lock-in	Beam Amp.	6-AA	Cathode	12.6	0.225	0.4	9.5	9.0									14C5	
14C7	Lock-in	Pentode	8-V	Cathode	12.6	0.15	.007m	6.0	6.5									14C7	
14E6	Lock-in	Duodiode-Tri.	8-W	Cathode	12.6	0.15	1.5	3.0	2.4									14E6	
14E7	Lock-in	Duodi.	8-AE	Cathode	12.6	0.15	.005m	4.6	5.5									14E7	
14F7	Lock-in	Duotriode	8-AC	Cathode	12.6	0.15	1.6	2.4	2.0									14F7	
14H7	Lock-in	Pentode	8-V	Cathode	12.6	0.15	.007m	8.0	7.0									14H7	
14J7	Lock-in	Tri.-Heptode	8-BL	Cathode	12.6	0.15	0.03m	4.6	7.5									14J7	
14N7	Lock-in	Duotriode	8-AL	Cathode	12.6	0.30		See 7N7										14N7	
14Q7	Lock-in	Duodi.	8-AL	Cathode	12.6	0.15	0.2m	9.0	9.0									14Q7	
14R7	Lock-in	Heptode	8-AE	Cathode	12.6	0.15	.004m	5.6	5.3									14R7	
14S7	Lock-in	Tri. Heptode	8-BL	Cathode	12.6	0.15	.03m	5.0	8.0									14S7	
14W7	Lock-in	Pentode	8-BJ	Cathode	12.6	0.225	.0025m	9.5	7.0									14W7	
14Y4	Lock-in	Duodiode	5-AH	Cathode	12.6	0.30												14Y4	
15	ST-12	Pentode	5-F	Cathode	2.0	0.22	.01m	2.4*	8.0*									15	
18	ST-14	Pentode	6-B	Cathode	14.0	0.30												18	
19	ST-12	Duotriode	6-C	Filament	2.0	0.26												19	
20	T-8	Triode	4-D	Filament	3.3	0.132												20	
22	ST-14	Tetrode	4-K	Filament	3.3	0.132	.02m	4.0*	10.0*									22	
24A, 24S	ST-14	Tetrode	5-E	Cathode	2.5	1.75	.007m	5.3	10.5									24A, 24S	
25A6	Metal	Pentode	7-S	Cathode	25.0	0.30												25A6	
25A6GT	GT	Pentode	7-S	Cathode	25.0	0.30												25A6GT	
25A7GT	GT	Diode Pent.	8-F	Cathode	25.0	0.30												25A7GT	
25AC5GT	GT	Triode	6-Q	Cathode	25.0	0.30												25AC5GT	
25B5	ST-12	Duotriode	6-D	Cathode	25.0	0.30												25B5	
25B6G	ST-14	Pentode	7-S	Cathode	25.0	0.30												25B6G	
25B8GT	GT	Pent.-Triode	8-T	Cathode	25.0	0.15	.02	5.5	10.0									25B8GT	
25C6G	ST-14	Beam Amp.	7-AC	Cathode	25.0	0.30		2.2	4.6									25C6G	
25L6	Metal	Beam Amp.	7-AC	Cathode	25.0	0.30	0.3	16.0	13.5									25L6	
25L6GT	GT	Beam Amp.	7-AC	Cathode	25.0	0.30	0.8*	15.0*	10.0*									25L6GT	

(1) Values are given shielded unless marked with (*).
 (2) Converter tube capacitances given are signal grid to plate.
 (3) RF Input; Mixer Output.
 m maximum.
 *Applied through 250,000 ohms.
 †Per Tube or Section—No Signal.
 ‡Plate and Target Supply Voltage.
 §With Average Power Input of 350 Mw. Grid to Grid.
 ¶Pentode Operation.
 ††Applied through 20,000 ohms.
 †††For two tubes with 40 volts RMS applied to each grid.
 ††††Approximate.
 †††††Conversion Conductance.
 ††††††50 Volts RMS applied to two grids.

PENNSYLVANIA TUBES — AVERAGE CHARACTERISTICS

Type	Construction			Emitter			Note (1) Capacitances in $\mu\mu\text{f}$.			Use	Plate Volts	Negative Grid Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Screen Resistance Ohms	Micromhos Mutual Conductance	Amplification Factor	Ohms Load for Stated Power Output	Undistorted Power Output Milli-watts	Type
	Style	Class	Basing Diag.	Type	Volts	Amps	Csp.	Cin.	Cout.												
25N6G	ST-12	Duodiode	7-W	Cathode	25.0	0.30				Power Amp.	110	0	110	45	7.0	Direct	9,200	2,000	2,000	25N6G	
25Y5	ST-12	Duodiode	6-E	Cathode	25.0	0.30				Rect. Doubler	235	0	100	46	5.8	Coupled	9,200	4,000	3,800	25Y5	
25Z5	ST-12	Duodiode	6-E	Cathode	25.0	0.30				Doubler	Characteristics Same as Type 25Z6GT.										
25Z6	ST-12	Duodiode	7-Q	Cathode	25.0	0.30				Rectifier	Characteristics Same as Type 25Z6GT.										
25Z6GT	GT	Duodiode	7-Q	Cathode	25.0	0.30				Doubler	Characteristics Same as Type 25Z6GT.										
26	ST-14	Triode	4-D	Filament	1.5	1.05	8.1*	2.8*	2.5*	H-W Rect. Amplifier	90	7.0	2.9	2.9			935	8.3	8.3	26	
26A7GT	GT	Duo. Beam Amplifier	8-BU	Cathode	26.5	0.6	1.2*	16.0*	13.0*	Power Amp.	26.5	4.5	26.5	20.0	2.0	2,500	5,500	1,500	900	26A7GT	
27, 27S	ST-12	Triode	5-A	Cathode	2.5	1.75	3.3*	3.2*	2.3*	Amplifier	90	6.0	3.0	3.0		10,000	900		9.0	27, 27S	
28D7	Lock-In	Duo. Beam Amplifier	8-BS	Cathode	28.0	0.40				Detector	28	3.5	28	12.5	1.0			900	4,000	80	28D7
28Z5	Lock-In	Double Diode	6-BJ	Cathode	28.0	0.24				Amplifier (per section) P.P.A. Total	28	3.5	28	12.5	1.0			900	4,000	100	28Z5
30	ST-12	Triode	4-D	Filament	2.0	0.06	6.0*	3.0*	2.1*	F-W Rect.	450	4.5	450	100	4.0			4,000	1,500*	600	30
31	ST-12	Triode	4-D	Filament	2.0	0.13				Det. Amp.	135	13.5	135	3.0	3.0	11,000	850		9.3	31	
32	ST-14	Tetrode	4-K	Filament	2.0	0.06	.015m	5.3*	10.5*	Power Amp.	135	22.5	135	8.0	5.0	10,300	900		9.3	32	
32L7GT	GT	Diode-Beam Amplifier	8-Z	Cathode	32.5	0.30				Power Amp.	180	13.5	180	12.3	3.8	4,100	925		7,000	185	32L7GT
33	ST-14	Pentode	5-K	Filament	2.0	0.26	1.0*	8.0*	12.0*	R-F Amp.	135	3.0	67.5	9.7	1.1	400,000	560		7,000	375	33
34	ST-14	Pentode	4-M	Filament	2.0	0.06	.015m	6.0*	11.0*	R-F Amp.	135	3.0	67.5	9.8	1.0	600,000	600		7,000	375	34
35, 51, 35S, 51S	ST-14	Tetrode	5-E	Cathode	2.5	1.75	.007m	5.3*	10.5*	R-F Amp.	180	3.0	90.0	6.3	2.5	300,000	1,020		420	35, 51, 35S, 51S	
35A5	Lock-In	Beam Amp.	6-AA	Cathode	35.0	0.15				A-F Amp.	250	3.0	90.0	6.5	2.5	400,000	1,050		420	35A5	
35L6GT	GT	Beam Amp.	7-AC	Cathode	35.0	0.15	0.8*	13.0*	9.5*	Power Amp.	110	7.5	110	40.0	3.0	14,000*	5,800		1,500	35L6GT	
35Y4	Lock-In	Diode	5-AL	Cathode	35.0	0.15				H-W Rect.	200	8.0	110	41.0	2.0	40,000*	5,900		3,300	35Y4	
35Z3	Lock-In	Diode	4-Z	Cathode	35.0	0.15				H-W Rect.	235 Max. A-C Volts; RMS, 60 Ma. Output Current with Panel Lamp.										
35Z4GT	GT	Diode	5-AA	Cathode	35.0	0.15				H-W Rect.	235 Max. A-C Volts; RMS, 100 Ma. Output Current without Panel Lamp.										
35Z5GT	GT	Diode	6-AD	Cathode	35.0	0.15				H-W Rect.	235 Max. A-C Volts Per Plate, RMS, 100 Ma. Output Current. Condenser Input to Filter.										
35Z6G	ST-14	Duodiode	7-Q	Cathode	35.0	0.30				Doubler	Characteristics Same as Type 40Z5, 45Z5GT.										
36	ST-12	Tetrode	5-E	Cathode	6.3	0.30	.007m	3.7*	9.2*	R-F Amp.	135	1.5	67.5	2.8	Not Over	575,000	1,000		475	36	
37	ST-12	Triode	5-A	Cathode	6.3	0.30	2.0*	3.5*	2.9*	Detector	180	3.0	90.0	3.1	1/2 of Plate Ma.	500,000	1,050		525	37	
38	ST-12	Pentode	5-F	Cathode	6.3	0.30	0.3*	3.5*	7.5*	Amplifier	250	6.0*	20 to 25 (Plate Current to be adjusted to 0.1 Ma. with no Input Signal)	7.5		8,400	1,100		9.2	38	
39/44	ST-12	Pentode	5-F	Cathode	6.3	0.30	.007m	3.5*	10.0*	Power Amp.	135	13.5	135	9.0	1.5	130,000	995		190	39/44	
40	ST-14	Triode	4-D	Filament	5.0	0.25	8.0	2.8	2.2	R-F Amp.	180	18.0	180	14.0	2.8	110,000	1,020		130	40	
40Z5/45Z5GT	GT	Diode	6-AD	Cathode	45.0	0.15				H-W Rect.	117 A-C Volts, RMS, 100 Ma. Output Current without Panel Lamp Connected, or 60 Ma. with Panel Lamp.										
41	ST-12	Pentode	6-B	Cathode	6.3	0.40				Power Amp.	Characteristics Same as Type 6K6GT.										
42	ST-14	Pentode	6-B	Cathode	6.3	0.65				Power Amp.	Characteristics Same as Type 6F6G.										
43	ST-14	Pentode	6-B	Cathode	25.0	0.30				Power Amp.	Characteristics Same as Type 25A6GT.										

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Type	Construction		Emitter		Note (1) (2) Capacitances in $\mu\mu\text{f}$.			Use	Plate Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Plate Resistance Ohms	Micromhos Mutual Conductance	Amplification Factor	Ohms Load for Stated Power Output	Undis. or Power Output Milli-watt	Type
	Style	Class	Beating Diag.	Type	Volts	Amps	Cap.												Cin.	Coult.
45	ST-14	Triode	4-D	Filament	2.5	1.50	7.0*	4.0*	3.0*	180 250 275	31.5 50.0 56.0	31.0 34.0 36.0	1,650 1,910 1,700	9,195 9,175 2,050	3.5 3.5 3.5	9,700 3,900 4,600	830 1,600 2,000	45
45Z3	Miniature	Diode	5-AM	Cathode	45.0	0.075												46
46	ST-16	Dual Grid Triode	5-C	Filament	2.5	1.75				117 A-C Volts Per Plate, RMS, 65 Ma. Output Current.	Tie Gs to P Tie Gs to G Tie Gs to G	22.0 4.0 6.0	(Class B Operation) (Class B Operation)	2,350 5,200* 5,800*	5.6	6,400 16,000 20,000	1,250 16,000 20,000	47
47	ST-16	Pentode	5-B	Filament	2.5	1.75	1.2*	8.6*	1.3*	Power Amp.	31.0	6.0	60,000	2,500	150	7,000	2,700	48
48	ST-16	Tetrode	6-A	Cathode	30.0	0.40				Power Amp.	52.0	12.0	4,000	3,900	15.6	1,500	2,000	49
49	ST-14	Dual Grid Triode	5-C	Filament	2.0	0.12				Power Amp.	52.0 92.5	12.0 12.0	11,000 4,750	3,900 1,125	4.7	1,500 12,000*	3,500	50
50	ST-16	Triode	4-D	Filament	7.5	1.95	7.1*	4.9*	3.4*	Power Amp.	Tie Gs to P Tie Gs to G	6.0 35.0	4,175 2,000	1,925 1,900	3.8	4,600 4,000	1,600 3,400	50A5
50A5	Lock-in	Beam Amp.	6-AA	Cathode	50.0	0.15				Power Amp.	7.5 110	4.0 1.5	10,000* 35,000*	8,200 8,250	3.8	2,000 3,000	2,100 4,300	50C6G
50C6G	ST-14	Beam Amp.	7-AC	Cathode	50.0	0.15				Power Amp.	8.0	1.5	35,000*	8,250	3.8	3,000	4,300	50L6GT
50L6GT	GT	Beam Amp.	7-AC	Cathode	50.0	0.15	1.5*	1.5*	4.3*	Power Amp.	100	2.0	9,500	1,450	13.8	10,000*	5,000	50Y6GT
50Y6GT	GT	Beam Amp.	7-AC	Cathode	50.0	0.15	2.8*	3.5*	2.5*	Det. Amp.	3.0	0.5	1 Meg.	1,185				50Z7G
50Z7G	GT	Duodiode	7-Q	Cathode	50.0	0.15				Amplifier	3.0 3.0 3.0	2.0 2.0 2.0	1 Meg. 1 Meg.	1,185 1,225				52
52	ST-14	Dual Grid Triode	5-C	Filament	6.3	0.30	.007m	5.0*	6.5*	Class A Amplifier Class B	43	5.2	1,750	3,000	5.2	2,000*	1,500	53
53	ST-14	Duotriode	7-B	Cathode	2.5	2.0				Power Amp.	0	1.5	Two Tubes in P.P.			10,000*	5,000	55, 55S
55, 55S	ST-12	Duodiode-Tri.	6-G	Cathode	2.5	1.0	1.5*	1.5*	4.3*	Power Amp.	0	1.5	Two Tubes in P.P.			10,000*	5,000	56, 56S
56, 56S	ST-12	Triode	5-A	Cathode	2.5	1.0	2.8*	3.5*	2.5*	Amplifier	13.5	5.0	9,500	1,450	13.8			56AS
56AS	ST-12	Triode	5-A	Cathode	6.3	0.40	.007m	5.0*	6.5*	Amplifier	20.0*	(Plate Current to be adjusted to 0.2 Ma. with no Input Signal)						57, 57S
57, 57S	ST-12	Pentode	6-F	Cathode	2.5	1.00	.007m	4.7*	6.0*	Amplifier	3.0 3.0 3.0	0.5 0.5 0.5	1 Meg. 1 Meg.	1,185 1,225				57AS
57AS	ST-12	Pentode	6-F	Cathode	6.3	0.40	.007m	4.7*	6.0*	Amplifier	4.3*	100	(Plate Current to be adjusted to 0.1 Ma. with no Input Signal)					58, 58S
58, 58S	ST-12	Pentode	6-F	Cathode	2.5	1.00	.007m	4.7*	6.0*	Amplifier	3.0 3.0 3.0	0.5 0.5 0.5	250,000 800,000	1,500				58AS
58AS	ST-12	Pentode	6-F	Cathode	6.3	0.40	.007m	4.7*	6.0*	Amplifier	100	8.0	250,000	1,500				70A7GT
59	ST-16	Pentode	7-A	Cathode	2.5	2.0				Power Amp.	18.0 25.0 30.0	26.0 35.0 26.0	2,300 40,000 (Class B Operation Two Tubes)	2,600 2,500	6.0 100	5,000 3,000 4,600*	1,250 3,000 20,000†	70L7GT
70A7GT	GT	Diode-Beam Amplifier	8-AB	Cathode	70.0	0.15				H-W Rect. Power Amp.	7.5 110	40	250,000	5,800		2,500	1,500	70L7GT
70L7GT	GT	Diode-Beam Amplifier	8-AA	Cathode	70.0	0.15				Rectifier Amplifier	7.5 110	40	15,000	7,500		2,000	1,800	71A
71A	ST-14	Triode	4-D	Filament	5.0	0.25	7.5*	3.2*	2.9*	Power Amp.	16.5 27.0 40.5	10.0 17.3 20.0	2,170 1,420 1,750	2,600 2,500	3.0 3.0 3.0	3,000 3,000 4,800	125 400 790	75, 75S
75, 75S	ST-12	Duodiode-Tri.	6-G	Cathode	6.3	0.30	1.7*	1.7*	3.8*	Det. Amp.	2.0	0.9	91,000	1,100	100			76
76	ST-12	Triode	5-A	Cathode	6.3	0.30	2.8*	3.5*	2.5*	Amplifier	3.0	5.0	9,500	1,450	13.8			77
77	ST-12	Pentode	6-F	Cathode	6.3	0.30	.007m	4.7*	11.0*	Amplifier	1.5 3.0	0.4 0.5	600,000*	1,100				78
78	ST-12	Pentode	6-F	Cathode	6.3	0.30	.007m	4.5*	11.0*	Amplifier	3.0 3.0 3.0	5.4 7.0 1.7	300,000* 1,400 800,000*	1,975 1,450				79
79	ST-12	Duotriode	6-H	Cathode	6.3	0.60				Power Amp.	0.0	7.5	(Class B Operation)	7,000*		5,500	8,000	80
80	ST-14	Duotriode	4-C	Filament	5.0	2.00				F-W Rect.	350 A-C Volts Per Plate, RMS, 195 Ma. Output Current. 500 A-C Volts Per Plate, RMS, 195 Ma. Output Current.	195 Ma. Output Current. 195 Ma. Output Current.	Condenser Input to Filter. Choke Input to Filter.					81
81	ST-16	Diode	4-B	Filament	7.5	1.95				H-W Rect.	700 A-C Volts Per Plate, RMS, 85 Ma. Output Current.	85 Ma. Output Current.	Condenser Input to Filter.					82
82	ST-14	Duodiode	4-C	Filament	2.5	3.0				F-W Rect.	450 A-C Volts Per Plate, RMS, 115 Ma. Output Current.	115 Ma. Output Current.	Condenser Input to Filter.					83
83	ST-16	Duodiode	4-C	Filament	5.0	3.00				F-W Rect.	450 A-C Volts Per Plate, RMS, 995 Ma. Output Current.	995 Ma. Output Current.	Condenser Input to Filter.					83V
83V	ST-14	Duodiode	4-AD	Cathode	5.0	2.00				F-W Rect.	375 A-C Volts Per Plate, RMS, 175 Ma. Output Current.	175 Ma. Output Current.	Condenser Input to Filter.					84, 6Z4
84, 6Z4	ST-12	Duodiode	5-D	Cathode	6.3	0.50				F-W Rect.	325 A-C Volts Per Plate, RMS, 60 Ma. Output Current.	60 Ma. Output Current.	Condenser Input to Filter.					85
85	ST-12	Duodiode-Tri.	6-G	Cathode	6.3	0.30	1.5*	1.5*	4.3*	Det. Amp.	0.0	10.5	(Class B Operation)	14,000*		5,500	8,000	85AS
85AS	ST-12	Duodiode-Tri.	6-G	Cathode	6.3	0.30				Det. Amp.	2.50	9.0	16,000	1,250	20			

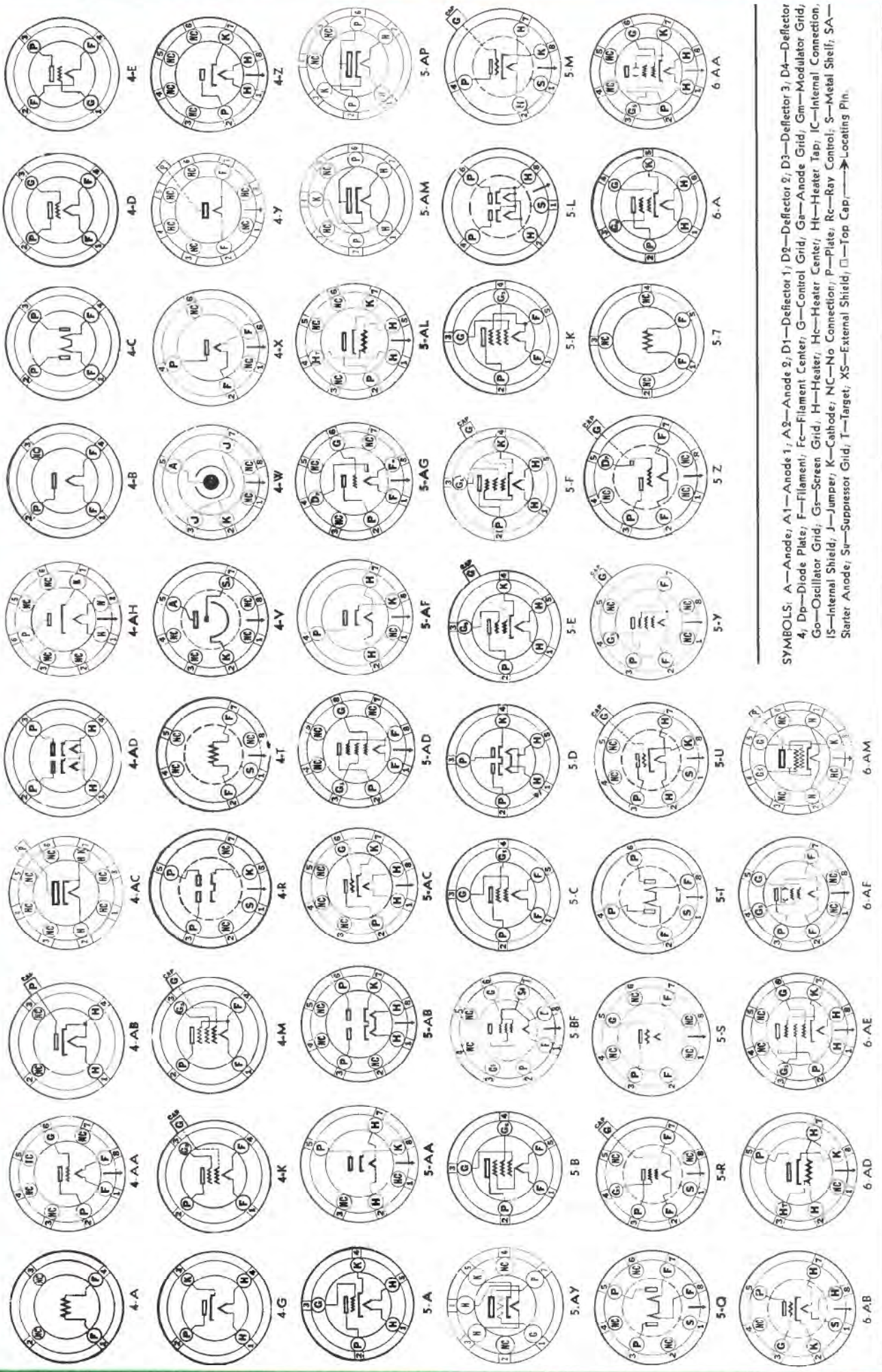
(1) Values are given shielded unless marked with (*).
 (2) Converter tube capacitances given are signal grid to plate.
 m maximum.
 †Applied through 250,000 ohms.
 ‡Per Tube or Section—No Signal.
 ††Applied through 200,000 ohms.
 ‡‡With Average Power Input of 320 Mw. Grid to Grid.
 †††Triode Operation.
 ††††Applied through 20,000 ohms.
 †††††Approximate.
 ††††††Conversion Conductance.
 †††††††150 Volts RMS applied to two grids.

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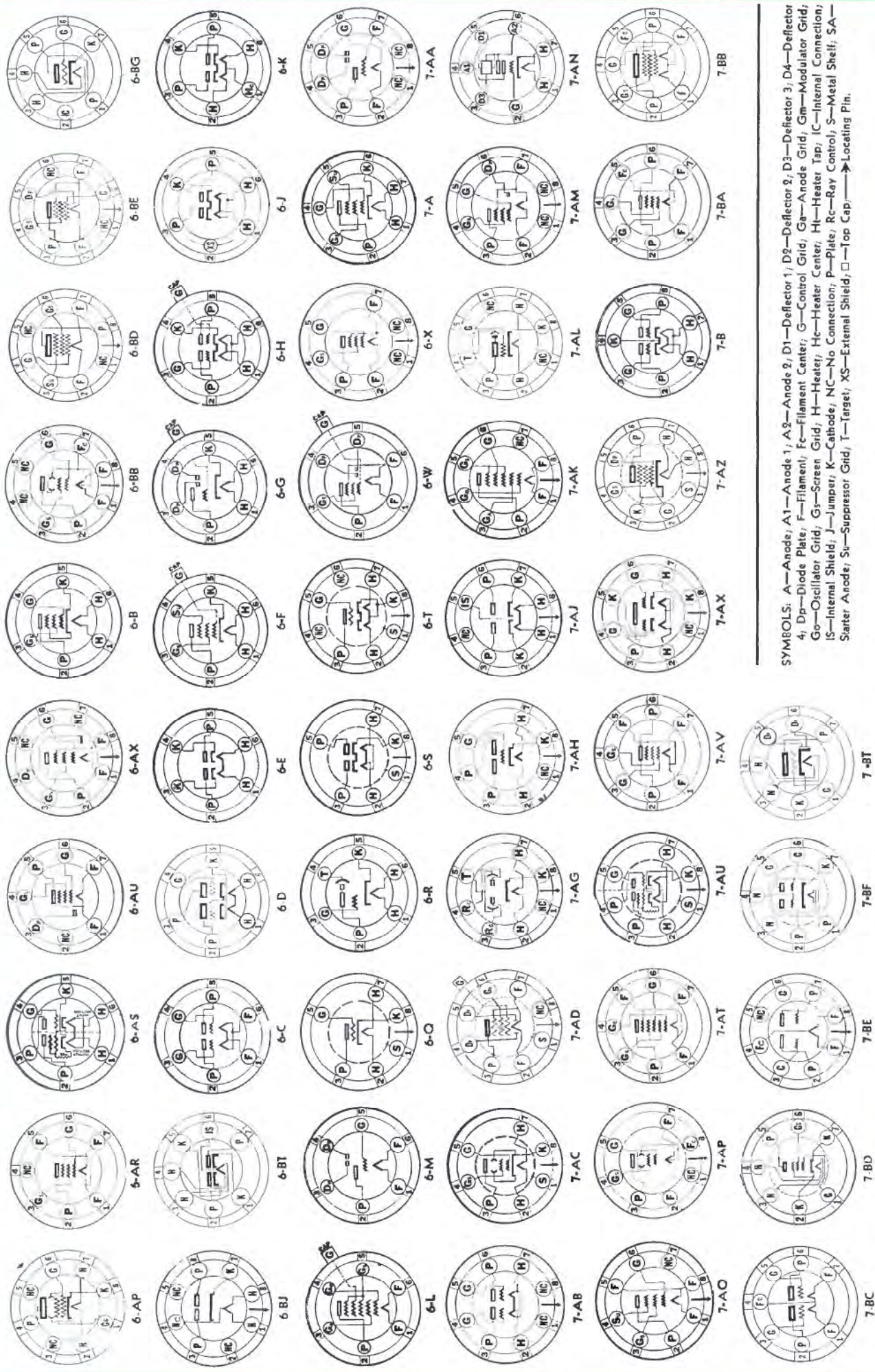
Type	Constructor		Emitter		Note (1)(2) Capacitances in μf			Use	Plate Volts	Negative Grid Volts	Screen Volts	Plate Current Ma.	Screen Current Ma.	Plate Resistance Ohms	Micromhos Mutual Conductance	Amplification Factor	Ohms Load for Stated Power Output	Undistorted Power Output Milli- watts	Type
	Style	Class	Basing Diag.	Class	Type	Volts	Amps													C.P.	Gr.	Cc1
89	ST-2	Pentode	6-F	Cathode	6.3	0.40			160** 180† 180†	20.0 18.0 0.0	17.0 20.0 3.0	3.0 3.0 3.0	3.300 80,000 80,000	1.495 1,550 1,550	4.7 195 195	7,000 8,000 9,400*	300 1,300 3,500	89	
VR-90-105-150									New Listed as OB3, OC3 and OD3.										VR-90-105-150
V99	T-3	Triode	4-E	Filament	3.3	0.263	3.5*		90	4.5	9.5	4.5	15,500	4.25	6.6	—	—	V99	
X99	T-9	Triode	4-D	Filament	3.3	0.263	3.5*		90	4.5	9.5	4.5	15,500	4.25	6.6	—	—	X99	
117L7/M7G1	G1	Diode-Beam Amplifier	8-AO	Cathode	117	0.09			117 A-C Volts, RMS, 75 Ma. Output Current. Condenser Input to Filter.	5.2 105	4.3	4.0	17,000†	5.303	—	4,000	850	117L7/M7G1	
117N7G1	G1	Diode-Beam Amplifier	8-AV	Cathode	117	0.09			117 A-C Volts, RMS, 75 Ma. Output Current. Condenser Input to Filter.	6.0 100	5.1	5.0	16,000†	7,000	—	3,000	1,200	117N7G1	
117P7G1	G1	Diode-Beam Amplifier	8-AV	Cathode	117	0.09			117 A-C Volts Per Plate, RMS, 75 Ma. Output Current.	5.2 105	4.3	4	17,000	5,300	—	4,000	850	117P7G1	
117Z4GT	G1	Diode	5-AA	Cathode	117	0.04			117 A-C Volts Per Plate, RMS, 60 Ma. Output Current.	—	—	—	—	—	—	—	—	117Z4GT	
117Z6GT	G1	Duodiode	7-Q	Cathode	117	0.075			117 A-C Volts Per Plate, RMS, 60 Ma. Output Current.	—	—	—	—	—	—	—	—	117Z6GT	
182B/482B	SI-14	Triode	4-D	Filament	5.0	1.25			250	35.0	20.0	2,500	2,000	—	5.0	4,500	1,350	182B/482B	
183-483	SI-14	Triode	4-D	Filament	5.0	1.25			250	65.0	20.0	2,000	1,500	—	3.0	4,500	1,800	183-483	
210-T	SI-16	Triode	4-D	Filament	7.5	1.25	7.0*		(Standard Type 10 with Ceramic Base. See Types 10 Characteristics)	—	—	—	—	—	—	—	—	210-T	
485	SI-12	Triode	5-A	Cathode	3.0	1.25			180	9.0	5.8	8,900	1,400	—	12.5	—	—	485	
864	T-9	Triode	4-D	Filament	1.1	0.25	5.3*		90	4.5	9.9	13,500	610	—	8.2	—	—	864	
									131	9.0	3.5	12,700	645	—	8.2	—	—		
884	SI-12	Gas Triode	6-Q	Cathode	6.3	0.6	6.0*		300	30	75	For Relay Operation Limit Time to 30 Secs. 300 Ma. Peak Current. 16 Volt Tube Drop	—	—	—	—	—	884	
885	SI-12	Gas Triode	5-A	Cathode	2.5	1.5	6.0*		Characteristics Same as Type 884.	—	—	—	—	—	—	—	—	885	
950	SI-14	Pentode	5-K	Filament	2.0	0.15			131	16.5	135	7.0	2.0	195,000	1,000	13,500	575	950	
1204	Lock-in	Pentode	4-C	Filament	6.3	0.15	.06m		950	2.0	100	4.0	1.3	500,000	1,800	—	—	1204	
1221	SI-2	Pentode	6-F	Cathode	6.3	0.30			Special Non-Microphonic Tube, Characteristics Same as Type 6C6.	—	—	—	—	—	—	—	—	1221	
1293	SI-2	Pentode	7-R	Cathode	6.3	0.30			"G" Equivalent of Type 1291 Above.	—	—	—	—	—	—	—	—	1293	
1299	SI-2	Tetrode	4-K	Filament	2.0	0.06			Special Type 39. Made for Low Grid Current Applications.	—	—	—	—	—	—	—	—	1299	
1231	Lock-in	Pentode	8-V	Cathode	6.3	0.45	.015m		300	150	17.0	2.5	700,000	5,500	3,850	200 Ohms Bias Res. = 900 Ohms	1231		
									300	150	17.0	0.5	540,000	6,500	3,500	—	—		
1266	G1	Diode	4-W Exc. Jumper	Cold K					Voltage Regulator Similar to Type OB3/VR-90-30, Except Regulating at 70 Volts.	—	—	—	—	—	—	—	—	1266	
1267	G1	Gas Triode	4-V	Cold K					Similar to Type OA4G.	—	—	—	—	—	—	—	—	1267	
1275	SI-16	Duodiode	4-C	Filament	5.0	1.75			Similar to Type 5Z3	—	—	—	—	—	—	—	—	1275	
1276	SI-16	Triode	4-D	Filament	4.5	1.4			Similar to Type 6A3.	—	—	—	—	—	—	—	—	1276	
1293	Lock-in	Triode	4-AA	Filament	1.4	.11	1.7	3.0	90	0	5.9	13.25	120 Mc. Oscillator Rg = 10,000 Ohms.	—	15	—	—	1293	
1612	Melb	Heptode	7-I	Cathode	6.3	0.30	.001m	7.5	Characteristics Same as Type 6L7.	—	—	—	—	—	—	—	—	1612	
1626	SI-12	Triode	6-Q	Cathode	12.6	.85	4.4*	3.4	250	70	21	Class C. Oscillator or Amplifier.	—	—	—	4,000	—	1626	
1629	G1	Electron Ray	7-AL	Cathode	12.6	0.15			Characteristics Same as Type 6E5.	—	—	—	—	—	—	—	—	1629	
2050	SI-12	Gas Tetrode	8-BA	Cathode	6.3	0.60	0.26*	4.2*	400	5.0	0	100	For Relay Operation Limit Time to 30 Secs. 1 Amp. Peak Current, 8 Volts Tube Drop.	—	—	—	—	2050	
									220	4.0	0	75	For Relay Operation Limit Time to 30 Secs. 375 Ma. Peak Current, 8 Volts Tube Drop.	—	—	—	—		
2051	SI-12	Gas Tetrode	8-BA	Cathode	6.3	0.6	0.26*	4.2*	220	4.0	0	75	For Relay Operation Limit Time to 30 Secs. 375 Ma. Peak Current, 8 Volts Tube Drop.	—	—	—	—	2051	
XXD	Lock-in	Triode	5-AC	Cathode		Now listed as 14AF7/XXD			100	0.0	10.0	—	7,000	3,600	25	—	—	XXD	
XXL	Lock-in	Triode	5-AC	Cathode	6.3	0.30			250	8.0	8.0	—	8,700	2,300	20	—	—	XXL	

(1) Values are given shielded unless marked with (*).
 (2) Converter tube capacitances given are signal grid to plate;
 RF Input, Mixer Output.
 m maximum.
 *Applied through 250,000 ohms.
 †Per Tube or Section—No Signal. ‡Applied through 200,000 ohms.
 ‡‡With Average Power input of 380 Mw. Grid to Grid.
 ‡‡‡Triode Operation.
 ‡‡‡‡Pentode Operation.
 ‡‡‡‡‡Applied through 20,000 ohms.
 ‡‡‡‡‡‡For two tubes with 40 volts RMS applied to each grid.
 ‡‡‡‡‡‡‡Approximate.
 ‡‡‡‡‡‡‡‡Conversion Conductance.
 ‡‡‡‡‡‡‡‡‡150 Volts RMS applied to two grids.

TUBE AND BASE DIAGRAMS (VIEWED FROM BOTTOM OF BASE—RMA NUMBERING SYSTEM)

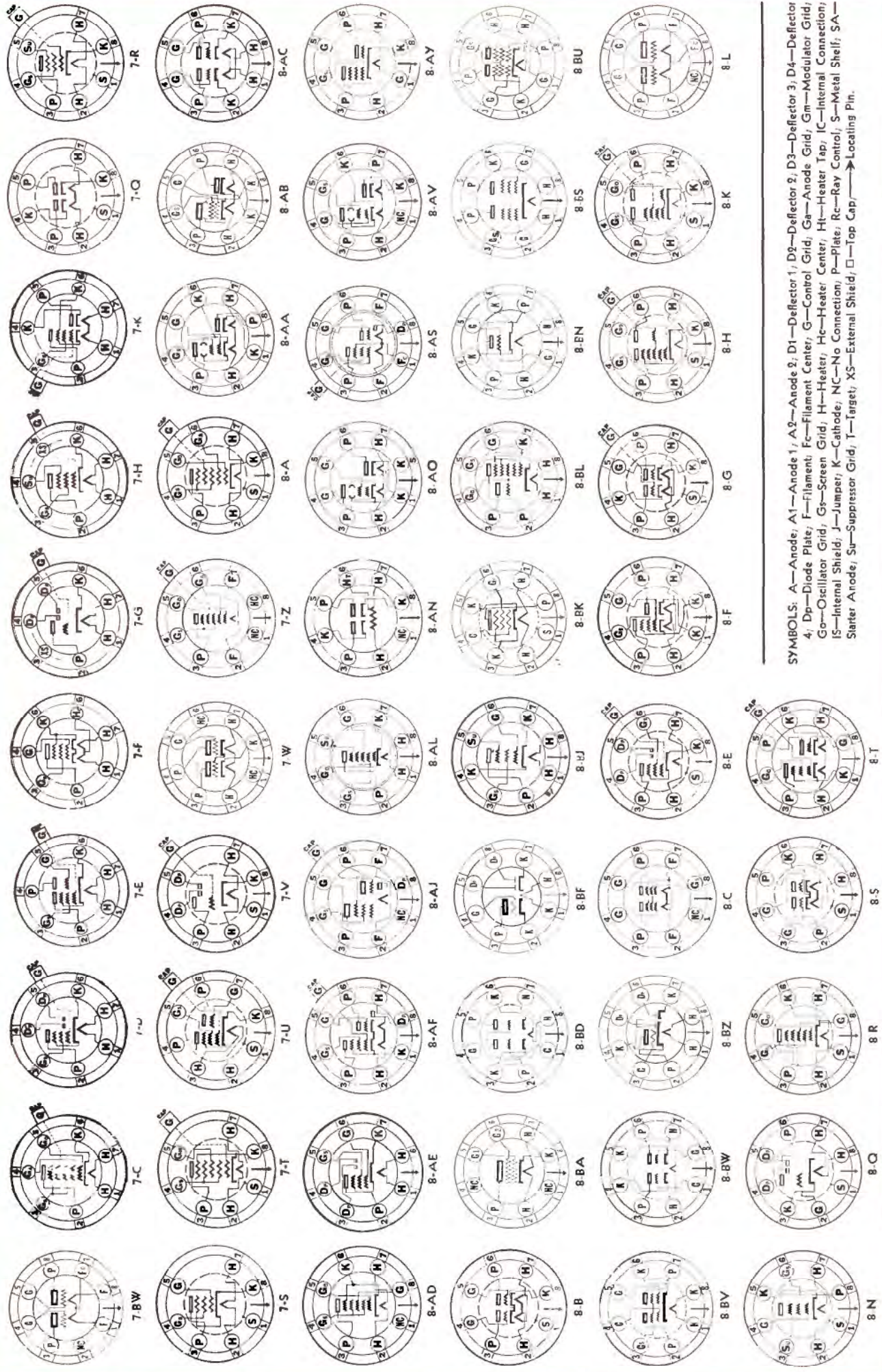


SYMBOLS: A—Anode; A1—Anode 1; A2—Anode 2; D1—Deflector 1; D2—Deflector 2; D3—Deflector 3; D4—Deflector 4; Dp—Diode Plate; F—Filament; Fc—Filament Center; G—Control Grid; Gm—Modulator Grid; Go—Oscillator Grid; Gs—Screen Grid; H—Heater; Hc—Heater Center; Ht—Heater Tap; IC—Internal Connection; IS—Internal Shield; J—Jumper; K—Cathode; MC—No Connection; P—Plate; Rc—Ray Control; S—Metal Shell; SA—Starter Anode; Sy—Suppressor Grid; T—Target; XS—External Shield; □—Top Cap. →—Locating Pin.



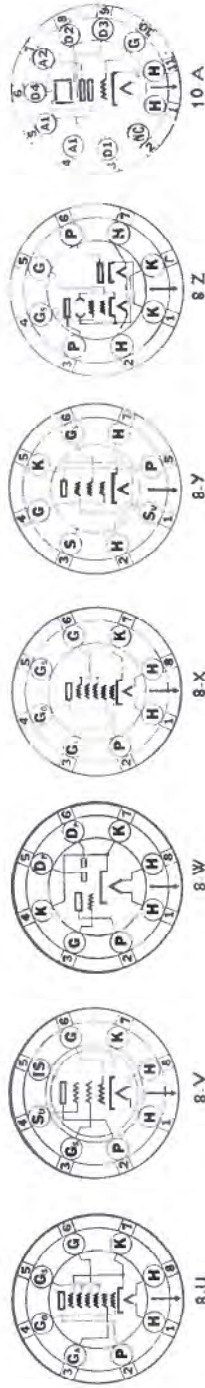
SYMBOLS: A—Anode; A1—Anode 1; A2—Anode 2; D1—Deflector 1; D2—Deflector 2; D3—Deflector 3; D4—Deflector 4; Dp—Diode Plate; F—Filament; Fc—Filament Center; G—Control Grid; G₁—Anode Grid; G₂—Modulator Grid; G₃—Oscillator Grid; G₄—Screen Grid; H—Heater; Hc—Heater Center; Ht—Heater Tap; IC—Internal Connection; IS—Internal Shield; J—Jumper; K—Cathode; NC—No Connection; P—Plate; Rc—Ray Control; S—Metal Shell; SA—Starter Anode; Su—Suppressor Grid; T—Target; XS—External Shield; □—Top Cap; →—Locating Pin.

TUBE AND BASE DIAGRAMS (VIEWED FROM BOTTOM OF BASE—RMA NUMBERING SYSTEM—Continued)



SYMBOLS: A—Anode; A1—Anode 1, A2—Anode 2; D1—Deflector 1; D2—Deflector 2; D3—Deflector 3; D4—Deflector 4; Dp—Diode Plate; F—Filament; Fc—Filament Center; G—Control Grid; G_a—Anode Grid; G_m—Modulator Grid; G_o—Oscillator Grid; G_s—Screen Grid; H—Heater; Hc—Heater Center; Ht—Heater Tap; IC—Internal Connection; IS—Internal Shield; J—Jumper; K—Cathode; NC—No Connection; P—Plate; Rc—Ray Control; S—Metal Shelf; SA—Starter Anode; Su—Suppressor Grid; T—Target; XS—External Shield; □—Top Cap; →—Locating Pin.

TUBE AND BASE DIAGRAMS (VIEWED FROM BOTTOM OF BASE—RMA NUMBERING SYSTEM—Continued)



SYLVANIA PANEL LAMP CHARACTERISTICS

Type No.	Circuit Volts	Design		Bead Color	Bulb Style	Miniature Base	Usual Service	Type No.	Circuit Volts	Design		Bead Color	Bulb Style	Miniature Base	Usual Service	Type No.
		Volts	Amp.							Volts	Amp.					
S40	6-8	6.3	0.15	Brown	T-3 1/4	Screw	Radio Dials	S40	2.0	2.0	0.06	Pink	T-3 1/4	Bayonet	Battery Set Dials	*S49
S41	2.5	2.5	0.50	White	T-3 1/4	Screw	Radio Dials	S41	6-8	7.5	0.20	White	G-3 1/2	Screw	Auto Sets, Flash Lights	S50
S42	3.2	3.2	0.35	Green	T-3 1/4	Screw	Radio Dials	S42	6-8	7.5	0.20	White	G-3 1/2	Bayonet	Auto Sets, Auto Panels	S51
S43	2.5	2.5	0.50	White	T-3 1/4	Bayonet	Radio Dials and Tuning Meters	S43	6-8	6.5	0.40	White	G-4 1/2	Bayonet	Auto Sets, Parking Lights	S55
S44	6-8	6.3	0.25	Blue	T-3 1/4	Bayonet	Radio Dials and Tuning Meters	S44	2.9	2.9	0.17	White	T-3 1/4	Screw	Radio Dials	S999
S45	3.2	3.2	0.35	White	T-3 1/4	Bayonet	Radio Dials	S45	2.9	2.9	0.17	White	T-3 1/4	Bayonet	Radio Dials, Coin Machines	S999A
S46	6-8	6.3	0.25	Blue	T-3 1/4	Screw	Radio Dials and Tuning Meters	S46	18.0	18.0	0.25	Brown	G-5	Screw	Coin Machines	S1455
*S47	6-9	6.3	0.15	Brown	T-3 1/4	Bayonet	Radio Dials	*S47	18.0	18.0	0.25	Brown	G-5	Bayonet	Coin Machines	S1455A
S48	2.0	2.0	0.06	Pink	T-3 1/4	Screw	Battery Set Dials	S48								

*Sylvania Types S47 and S49 are interchangeable with Types 40A and 49A, respectively, in other brands.