

RCA



POWER & GAS TUBES



vacuum power tubes
rectifier tubes
thyratrons
ignitrons
magnetrons
vacuum-gauge tubes




MASLINE ELECTRONICS, INC.
 WHOLESALE DISTRIBUTORS
 511 CLINTON AVE. SOUTH
 ROCHESTER, N. Y.



RADIO CORPORATION of AMERICA
ELECTRON TUBES
HARRISON, N. J.

VACUUM POWER TUBES



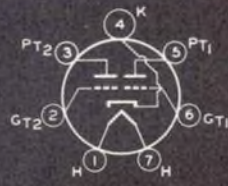
 Type	Description
TRIODES (Air-Cooled)	
2C40	Lighthouse Triode. For use as an rf amplifier at frequencies up to 1200 Mc and cw oscillator at frequencies up to 3370 Mc. Octal 6-pin base.
2C43	Lighthouse Triode. Similar to Type 2C40 except for higher dissipation rating. For use as a cw oscillator at frequencies up to 1500 Mc.
3C33	Heater-cathode type containing two high-perveance units. For use in industrial control and voltage-regulator service. Septar 7-pin base.
10-Y	For low-power transmitters. Has thoriated-tungsten filament. Small 4-pin micanol bayonet base.
801-A	Medium-mu type with thoriated-tungsten filament. Small 4-pin micanol bayonet base.
805	High-mu zero-bias class B modulator with thoriated-tungsten filament. Features high power output with low plate voltage and low distortion. Jumbo 4-pin base. Medium cap.
808	High-mu type for high-frequency applications. Small 4-pin, bayonet base. Medium end cap, small side cap.
809	High-perveance high-mu type with thoriated-tungsten filament. Features high efficiency and low driving power. Small 4-pin, micanol, bayonet base. Medium cap.
810	High-perveance type with a graphite anode and a thoriated-tungsten filament. Features high plate efficiency with low driving power and relatively low plate voltage. Jumbo 4-pin base. Skirted medium end cap, medium side cap.
811-A	Improved and superseding version of the popular 811. Utilizes a modified construction featuring a zirconium-coated plate having radiating fins to give greater dissipation capability and to permit increased ratings for plate current and plate input. Small 4-pin, micanol, bayonet base. Medium cap.
812-A	Improved and superseding version of the popular 812. Has same structural features of type 811-A with increased ratings for plate current and plate input.
826	Highly efficient vhf oscillator with center-tapped filament and zirconium-coated anode. Septar 7-pin base.
830-B	General purpose thoriated-tungsten filament type. Small 4-pin, bayonet base. Small cap.
833-A	Rugged, high-perveance type with a 100-watt thoriated-tungsten filament and a zirconium-coated anode. Special post terminals. For forced-air cooled ratings, see page 6.
834	Vhf power amplifier type with a 25-watt, thoriated-tungsten filament. Small 4-pin, bayonet base. Wire top terminals.
838	High-mu, zero-bias class B modulator type with thoriated-tungsten filament. Features high power output with low distortion. Jumbo 4-pin base.

For key to terminal connections, see page 15. Note 1: Post and End Disc Terminal, plate; Center Disc Terminal, grid; Shell, cathode rf terminal.

For Index to RCA Power and Gas Tubes, see page 23.



See Note 1
2C40 2C43



3C33



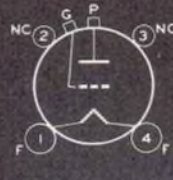
10-Y



801-A



805

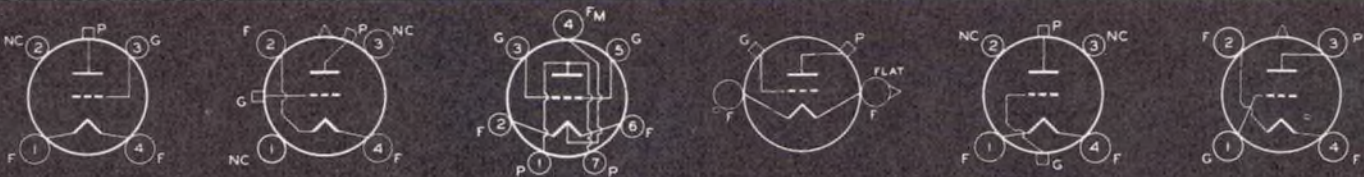


808

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Amplification Factor	Class of Service	Max. Frequency for Full Input Mc	Max. Plate Ratings				Typical Operating Conditions							RCA Type
							Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to-Plate Load Ohms	Appx. Driving Power Watts	Power Output Watts		
TRIODES (Air-Cooled)																		
6.3	0.75	2 ⁹ / ₁₆	1 ⁵ / ₁₆	36	C-T	3370	500	—	6.5	250	-5	—	0.02	—	—	0.075	2C40	
										Oscillator at 3370 Mc →								
6.3	0.9	2 ¹¹ / ₁₆	1 ⁵ / ₁₆	48	C-T	1500	500	—	12	470	Grid Res., 1000 ohms		0.038	—	—	9	2C43	
										Osc. at 350 Mc (2 tubes) →								
12.6	1.125	3 ¹¹ / ₁₆	2 ³ / ₈	11 per unit		Max. Peak Plate Volts, ±2000				Max. Peak Cathode Ma. (Per Unit), 500				Max. Average Grid Ma. (Per Unit), 7.5				3C33
						Max. DC Grid Volts, -200				Max. Average Plate Ma. (Per Unit), 120				Max. Dissipation, 15 watts/unit				
7.5	1.25	5 ³ / ₈	2 ¹ / ₁₆	8	C-P C-T	8 8	350 450	17.5 27	10 15	350 450	-135 -115	— —	0.045 0.055	— —	3.5 3.3	8 13	10-Y	
7.5	1.25	5 ³ / ₈	2 ¹ / ₁₆	8	B C-P C-T	— 60 60	600 500 600	42 30 42	20 13.5 20	600 500 600	-75 -190 -150	320 — —	0.008 0.055 0.065	10000 — —	3 4.5 4	45 18 25	801-A	
10.0	3.25	8 ¹ / ₂	2 ³ / ₁₆	Variable	B C-P C-T	— 30 30	1500 1250 1500	315 220 315	125 85 125	1500 1250 1500	-16 -160 -105	280 — —	0.084 0.16 0.2	8200 — —	7 16 8.5	370 140 215	805	
7.5	4.0	6 ¹ / ₁₆	2 ¹³ / ₁₆	47	B C-P C-T	— 30 30	2000 1600 2000	225 200 300	75 50 75	2000 1600 2000	-36 -170 -150	270 — —	0.04 0.125 0.15	21400 — —	8.8 10 9	300 150 225	808	
6.3	2.5	6 ⁹ / ₁₆	2 ⁷ / ₁₆	50	B C-P C-T	— 60 60	1000 750 1000	100 75 100	30 25 30	1000 750 1000	-9 -60 -75	155 — —	0.04 0.1 0.1	11600 — —	2.7 4.3 3.8	145 55 75	809	
10.0	4.5	8 ³ / ₄	2 ³ / ₄ *	36	B C-P C-T	— 30 30	2750 2000 2500	510 500 750	175 125 175	2250 2000 2500	-60 -350 -180	380 — —	0.07 0.25 0.3	11600 — —	13 35 19	725 380 575	810	
6.3	4.0	6 ²¹ / ₃₂	2 ⁷ / ₁₆	160	B C-P C-T	— 30 30	1500 1250 1500	235 175 260	65 45 65	1500 1250 1500	-4.5 -120 -70	170 — —	0.032 0.14 0.173	12400 — —	4.4 10 7.1	340 135 200	811-A	
6.3	4.0	6 ¹⁵ / ₃₂	2 ⁷ / ₁₆	29	B C-P C-T	— 30 30	1500 1250 1500	235 175 260	65 45 65	1500 1250 1500	-48 -115 -120	270 — —	0.028 0.14 0.173	13200 — —	5 7.6 6.5	340 130 190	812-A	
7.5	4.0	3 ¹¹ / ₁₆	2 ³ / ₈	31	C-P C-T	250 250	1000 1000	95 130	45 55	1000 1000	-160 -70	— —	0.095 0.13	— —	11.5 5.8	70 90	826	
10.0	2.0	6 ¹¹ / ₁₆	2 ¹ / ₁₆	25	C-P C-T	15 15	800 1000	80 150	40 60	800 1000	-150 -110	— —	0.095 0.14	— —	5 7	50 90	830-B	
10.0	10.0	8 ¹³ / ₁₆	4 ¹⁹ / ₃₂	35	B C-P C-T	— 30 30	3300 3000 3300	1300 1000 1500	350 250 350	3300 3000 3000	-80 -240 -160	440 — —	0.1 0.335 0.335	10500 — —	30 26 20	1900 800 800	833-A	
7.5	3.1	6 ⁷ / ₈	2 ¹¹ / ₁₆	10.5	C-P C-T	100 100	1000 1250	100 125	35 50	1000 1250	-310 -225	— —	0.09 0.09	— —	6.5 4.5	58 75	834	
10.0	3.25	7 ⁷ / ₈	2 ⁵ / ₁₆	Variable	B C-P C-T	— 30 30	1250 1000 1250	220 175 220	100 67 100	1250 1000 1250	0 -135 -90	200 — —	0.148 0.15 0.15	9000 — —	7.5 16 6	260 100 130	838	

For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. • Intermittent Commercial and Amateur Service. • Maximum Radius.



809 811-A
812-A 830-B
810
826
833-A
834
838

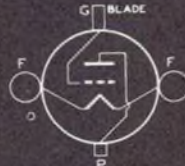
VACUUM POWER TUBES

 Type	Description
TRIODES (Air-Cooled)—Cont'd	
845	Modulator type. Jumbo 4-pin base.
851	Heavy-duty modulator type. Will deliver 160 watts of undistorted audio power in class A service. Special end-mounting for base. Skirted large cap.
1626	RF oscillator. Heater-cathode type. Octal 8-pin, micanol, base.
5556	Coated-filament type featuring low grid power and uniformity of characteristics. Small 4-pin, bayonet base.
5675	Medium-Mu Triode. "Pencil" Type. For use in cathode-drive service as a class C rf power amplifier and oscillator.
5794	Fixed-Tuned Oscillator Triode. "Pencil" type. Utilizing a metal construction and intended for transmitting service in radiosonde applications. Has two resonators which are integral with tube.
5876	General-Purpose, High-Mu Triode. "Pencil" type. For use in cathode-drive circuits as an rf amplifier, if amplifier, or mixer tube in receivers operating at frequencies up to 1000 Mc; as a frequency multiplier up to about 1500 Mc, and as an oscillator up to 1700 Mc.
5893	Medium-Mu Triode. "Pencil" type. Intended particularly for cathode-drive service as a plate-pulsed oscillator up to 3300 Mc. May also be used as an rf power amplifier, cw oscillator, or frequency doubler up to 1000 Mc.
6026	High-efficiency Oscillator Triode. Subminiature type. Intended particularly for transmitting service in radiosonde and similar applications at 400 Mc.
6263	Medium-Mu Triode. "Pencil" type. Has external plate radiator. For use in cathode-drive service as an rf power amplifier and oscillator in mobile equipment and in aircraft transmitters at altitudes up to 60,000 feet without pressurized chambers.
6264	Medium-Mu Triode. "Pencil" type. Like the 6263 but has a mu of 40. Especially useful as a frequency multiplier.
6562	Like the 5794 but has cathode externally connected to one of the heater leads.
8000	High-power amplifier with a 45-watt thoriated-tungsten filament and a special-processed graphite anode. Especially useful in diathermy applications. Jumbo 4-pin base. Skirted medium end-cap, medium side cap.
8005	High-perveance type. Features high-power output with low grid driving power. For self-rectifying oscillator circuits in therapeutic applications. Small 4-pin, bayonet base. Ceramic insulated cap.
8012-A	Uhf oscillator, rf power amplifier and frequency multiplier featuring double grid and plate connections and flexible filament leads.
8025-A	Same as 8012-A except for small 4-pin, micanol, base for filament leads, and miniature caps for double grid and plate leads.

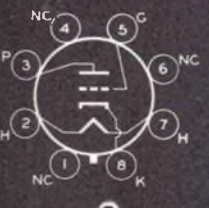
For key to terminal connections, see page 15. Note 2: G terminals nearer filament leads; P terminals nearer bulb tip. Note 3: G caps nearer base; P caps nearer bulb tip. Note 4: The heater leads for the "Pencil" tubes with the exception of types 5794 and 6562 fit the Cinch Socket No. 54A1635, or equivalent. Connections to the plate, grid, and cathode terminals require flexible spring contacts. The cathode of the 6562 is externally connected to one of the heater leads.



845



851



1626

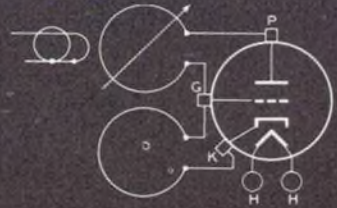


5556



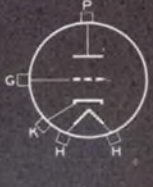
See Note 4

5675



See Note 4

5794



6562

See Note 4

5876 5893 6263 6264

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Amplification Factor	Class of Service	Max. Frequency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							RCA Type		
							Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to-Plate Lead Ohms	Approx. Driving Power Watts	Power Output Watts			
TRIODES (Air-Cooled)—Cont'd																			
10.0	3.25	7 $\frac{3}{8}$	2 $\frac{5}{16}$	5.3	AB ₁	—	1250	150	100	1250	-225	440	0.04	6600	—	115	845		
11.0	15.5	17 $\frac{5}{8}$	6 $\frac{3}{8}$	20.5	C-P C-T	3	2000	1800	500	2000	-300	—	0.85	—	65	1250	851		
						3	2500	2500	750	2500	-250	—	0.9	—	45	1700			
12.6	0.25	4 $\frac{1}{8}$	1 $\frac{1}{16}$	5	C-T	30	250	6.25	5	250	-70	—	0.025	—	0.5	4	1626		
4.5	1.1	4 $\frac{1}{2}$	1 $\frac{5}{8}$	8.5	A ₁	—	350	—	7.5	350	-30	30	0.009	18000	—	0.6	5556		
					C-P	6	350	14	7	300	-100	0.03	—	0.3	4				
					C-T	6	350	14	10	350	-80	0.035	—	0.25	6				
6.3	0.135	2 $\frac{3}{8}$	1 $\frac{1}{16}$ **	20	C-T	3000	300	9	9	120	-8	—	0.025	—	—	0.475	5675		
							Oscillator at 1700 Mc →												
6.0	0.16	2 $\frac{15}{16}$	$\frac{7}{8}$ *	—	Radiosonde Service at 1680 Mc.	Frequency (approx.), 1680 Mc. Frequency Adjustment Range, ±12 Mc. Max. Frequency Drift, +4 to -1 Mc.			Heater-Voltage Range, 6.6 to 5.2 Volts Plate-Voltage Range, 117 to 95 Volts. Ambient Temp. Range +22 to -40°C.							5794			
6.3	0.135	2 $\frac{3}{8}$	1 $\frac{1}{16}$ **	56	C-T	—	360	9	6.25	250	-2	—	0.023	—	—	0.75	5876		
					Oscillator at 1700 Mc →														
					C-M	—	330	7.5	6.25	300	-70	—	0.017	—	2.0	2.0			
							Doubler to 960 Mc →												
6.0	0.330	2 $\frac{5}{16}$	2 $\frac{3}{32}$ **	27	Max. Ratings for Plate-Pulsed Oscillator Service—Class C: Maximum "On" Time, 5 microseconds Peak Positive-Pulse Plate Volts, 1750 Plate Dissipation, 6 watts Pulse Duration, 1.5μ sec.													5893	
5.2 to 6.6	0.2 at 6.3 volts	1 $\frac{1}{2}$ ♦	0.4	—	C-T	—	150	3.3	3.0	135	Grid Res., 1300 ohms	0.02	—	—	1.25	6026			
							Oscillator at 400 Mc →												
6.0	0.28	2.6	1.0§	27	C-P	500	330	15	9	320	-52	—	0.035	—	2.4	8	6263		
					C-T	500	400	22	13	350	-35	—	0.04	—	—	7			
					Oscillator at 500 Mc → Rf Power Amp. at 500 Mc →														
6.0	0.28	2.6	1.0§	40	C-M	500	350	15.8	9.5	350	-122	—	0.037	—	4.5	3.4	6264		
							Tripler to 510 Mc →												
Same as 5794																	6562		
10.0	4.5	8 $\frac{3}{4}$	2 $\frac{1}{4}$ *	16.5	B	—	2750	510	175	2250	-130	560	0.065	12000	7.9	725	8000		
					C-P	30	2000	500	125	2000	-370	—	0.25	—	20	380			
					C-T	30	2500	750	175	2500	-240	—	0.3	—	18	575			
10.0	3.25	6 $\frac{11}{16}$	2 $\frac{1}{16}$	20	B	—	1500	250	85	1500	-67.5	330	0.04	9800	5.5	330	8005		
					C-P	60	1250	240	75	1250	-195	—	0.19	—	9	170			
					C-T	60	1500	300	85	1500	-130	—	0.2	—	7.5	220			
6.3	1.92	3 $\frac{15}{16}$ ♦	1 $\frac{1}{16}$ *	18	C-P	500	800	33	27	800	-105	—	0.04	—	1.4	22	8012-A		
					C-T	500	1000	50	40	1000	-90	—	0.05	—	1.6	35			
6.3	1.92	4 $\frac{15}{16}$	1 $\frac{1}{64}$ *	18	C-P	500	800	33	20	800	-105	—	0.04	—	1.4	22	8025-A		
					C-T	500	1000	50	30	1000	-90	—	0.05	—	1.6	35			

For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. † Intermittent Commercial and Amateur Service. ♦ Excluding Flexible Leads. * Maximum Radius. ‡ Including Radiator Fin. † Per Section. ** Including Grid Flange.



6026



8000



8005




See Note 2
8012-A

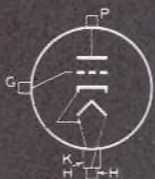


See Note 3
8025-A

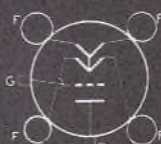
VACUUM POWER TUBES

 Type	Description
TRIODES (Forced-Air-Cooled)	
2C39-A	High- μ , Planar-electrode type. Integral radiator. For use as amplifier, oscillator and frequency multiplier. Exceptionally high transconductance. Useful up to 2500 Mc and above in cathode-drive circuits of the coaxial-cylinder type. Special terminal connections.
4C33	Compact, vhf, radiator type with unipotential cathode. For pulsed-oscillator applications. Special terminal connections. Ratings shown are for plate-modulated, pulsed-oscillator class C service up to 625 Mc.
9C22	Radiator type with multi-strand, single-phase tungsten filament and utilizing grid-flange and filament-header construction. For 50-kw broadcast transmitters and industrial heating applications. Special terminal connections.
9C25	Cathode-drive type with a multi-strand single-phase thoriated-tungsten filament and utilizing grid-flange and filament-header construction. For induction and dielectric heating purposes. Special terminal connections.
833-A	Rugged, high-perveance type with a 100-watt thoriated-tungsten filament and a zirconium-coated anode. Special post terminals. For air-cooled ratings, see page 2.
889R-A	Radiator type with a pure-tungsten filament. For use in high power broadcast and industrial rf heating applications. Special terminal connections.
891-R	Radiator type with a two-phase tungsten filament. Especially designed for induction-heating devices. Special terminal connections.
892-R	Radiator type incorporating the same design features as type 891-R but has a higher μ and slightly higher ratings. For use in general broadcast and industrial rf heating devices.
893A-R	Radiator type with a three-phase tungsten filament. Designed to permit operation from one-, three-, or six-phase ac or dc supply. For general broadcast and industrial rf heating applications. Special terminal connections.
5588	Compact, uhf, radiator type for cathode-drive circuits. Has unipotential cathode and coaxial-electrode structure. Special terminal connections. Typical values shown are for cathode-drive service at 1000 Mc.
5592	Radiator type with multistrand thoriated-tungsten filament. For cathode-drive service in 25- and 50-kw FM broadcast transmitters and for industrial service. Special terminal connections. Typical values shown are for cathode-drive service at 108 Mc.
5604-A	Radiator type with a multistrand tungsten filament. For communication and industrial service. Special terminal connections.
5671	Radiator type with multistrand thoriated-tungsten filament. For use as modulator and power amplifier in 50-kw AM broadcast service. Special terminal connections.
5713	Compact, vhf radiator type with unipotential cathode. For use in cathode-drive circuits particularly those of the transmission-line type. Special terminal connections.
5762/7C24	Radiator type designed for TV, FM, AM, and industrial service. Its flanged-header grid terminal is useful in cathode-drive circuits for isolation of tube input and output. Three multiple-ribbon filament leads. Special terminal connections.
5786	Improved version of 6C24 with a more efficient radiator to provide ample plate cooling with a low-cost blower. Intended primarily for industrial applications, but useful in broadcast service. Special terminal connections.
5946	Compact, uhf, radiator type with unipotential cathode. For plate-pulsed oscillator and amplifier applications up to 1300 Mc. Special terminal connections.
6161	Compact, radiator type for uhf service in television and cw applications. Utilizes coaxial-electrode structure for use in cathode-drive circuits of the coaxial-cylinder type. Full ratings up to 900 Mc. Supersedes the 5588 for new equipment design. Special terminal connections.

For key to terminal connections, see page 15. Note 5: Diametrically opposite terminals must be connected together. Note 6: Terminal No. 5 is above grid arm.



2C39-A



4C33

See Note 5



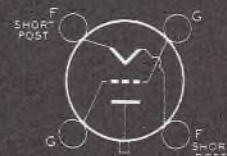
9C22



5592

9C25

5671



833-A



889R-A

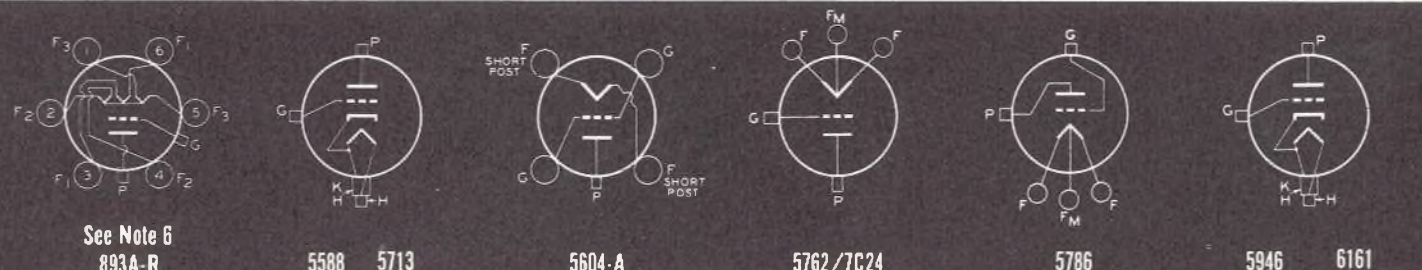
891-R

892-R

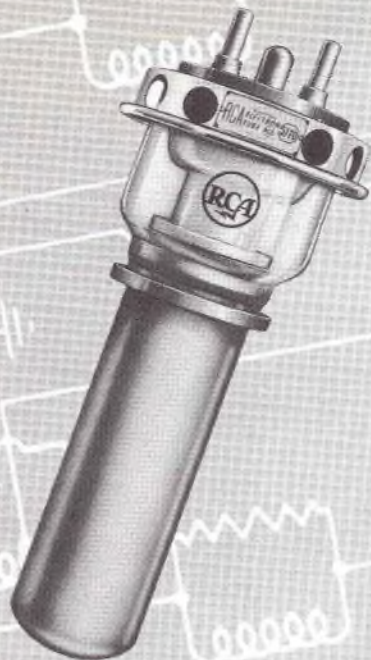
VACUUM POWER TUBES


Cathode		Max. Dimensions Inches		Amplification Factor	Class of Service	Max. Frequency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							RCA Type
							Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to-Plate Load Ohms	Approx. Driving Power Watts	Power Output Watts	
TRIODES (Forced-Air-Cooled)																	
6.3	1	2 3/4	1 17/64	100	C-P C-T C-M	2500 2500 2500	600 1000 1000	— — —	70 100 100	— 800 —	— -45 —	— — —	— 0.08 —	— — —	— 6 —	— 27 —	2C39-A
5	9.1	4 7/8	2 1/16	25	DC Plate Voltage During Pulse, 13000 volts DC Grid Voltage During Pulse, -2000 volts DC Plate Current During Pulse, 30 amperes						DC Plate Current, 0.03 ampere Pulse Plate Input, 390000 watts Plate Dissipation, 250 watts						4C33
19.5	415	25	17	41	B C-P C-T	— 5 5	15000 12500 17000	60000 50000 100000	20000 14000 20000	14000 12500 17000	-300 -1670 -1600	1050 — —	0.6 3.5 5.0	4000 — —	150 1570 1450	61000 38000 65000	9C22
6.0	285	17 3/8	14 1/4	32	B C-P C-T	— 30 30	11500 9000 11500	40000 26000 40000	17500 11500 17500	10500 8000 11000	-250 -650 -540	1310 — —	1.7 2.5 3.6	3300 — —	1500 3000 3750	50000 18000 32500	9C25
10.0	10.0	8 13/16	4 19/32	35	B C-P C-T	— 20 20	4000 4000 4000	1800 1800 2000	450 350 450	4000 4000 4000	-100 -325 -225	510 — —	0.1 0.45 0.5	11000 — —	38 42 35	2700 1500 1600	833-A
11.0	120	11 1/8	5 1/2*	21	B C-P C-T	— 40 40	8500 6000 8500	12000 6000 16000	5000 3000 5000	7500 6000 7500	-300 -900 -800	1700 — —	0.4 1.0 2.0	5000 — —	150 140 400	15000 4000 10000	889R-A
11.0†	60.0	22	6 1/2*	8.5	B C-T	— 1.6	10000 10000	10500 15000	3500 4000	8000 10000	-860 -2000	2260 —	0.5 1.33	8000 —	50 375	10000 10000	891-R
11.0†	60.0	22	6 1/2*	50	B C-P C-T	— 1.6 1.6	12500 10000 12500	12000 10000 18000	4000 2500 4000	8000 8000 10000	-60 -1300 -1300	1000 — —	0.5 0.82 1.4	6800 — —	84 430 495	10500 5000 10000	892-R
10 ^Δ	61.0†	28	8 1/2*	34.5	B C-P C-T	— 5 5	20000 12000 20000	60000 24000 70000	20000 12000 20000	18000 12000 18000	-450 -1000 -1000	1720 — —	0.8 2.0 3.6	8000 — —	140 210 340	70000 18000 50000	893A-R
6.3	2.5	3 13/32	1 3/4	16	C-P C-T	1200 1200	800 1000	170 250	130 200	650 835	-70 -70	— —	0.25 0.3	— —	32 32	65 100	5588
11	412	17 3/8	14 1/4	32	C-T-F	50	11500	50000	17500	7500	-1000	—	4.4	—	9000	27000	5592
11	176	13 3/4	5 1/2*	20	B C-P C-T	— 25 25	12500 8000 12500	32500 12000 32500	10000 6000 10000	12000 8000 12000	-600 -1000 -1170	2380 — —	0.6 1.1 2.5	5900 — —	160 200 470	36000 7100 22500	5604-A
11	285	25	16 15/16	40	B C-P C-T	— 10 10	15000 12500 15000	90000 55000 100000	25000 17000 25000	15000 12500 15000	-320 -1500 -1500	1600 — —	0.6 4.0 6.0	3320 — —	600 1960 2040	100000 40000 70000	5671
3.3	11.5	4 7/8	2 1/10	25	C-T	220	1500	450	250	1500	-175	—	0.3	—	65	325	5713
12.6	29	7 1/8	4 11/16	29	B C-P C-T-F	— 30 30	6200 5000 6200	8700 5000 8700	3000 2000 3000	4700 4700 6000	-200 -400 -550	900 — —	0.3 0.96 1.25	3640 — —	195 720 1225	8800 4200 7000	5762/ 7C24
11	12.5	9 5/8	2 15/16	32	B C-P C-T	— 160 160	4000 2500 3000	1500 1000 1500	600 400 600	3000 2500 3000	-95 -350 -200	470 — —	0.075 0.4 0.5	8600 — —	30 75 36	1640 810 1000	5786
6.3	3.4	3 13/32	1 3/4	27	Max. Ratings for Plate-Pulsed Oscillator Service—Class C: Maximum "On" Time, 10 microseconds Peak Positive-Pulse Plate Volts, 7500 Peak Plate Amperes, 4.5 Plate Input, 340 watts Plate Dissipation, 250 watts											5946	
6.3	3.4	3 13/32	1 3/4	27	C-T-F	900	1600	400	250	1650§	150§	—	0.25	—	80	180	
					C-M	Doubler to 900 Mc →				1675§	175§	—	0.25	—	100	140	
					C-B-T	900	1600	560	250	1600§	100§	—	0.35	—	75	230	
Sync. level conditions per tube. Band width, 6 Mc.																	


For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. * Intermittent Commercial and Amateur Service. † Maximum Radius. ‡ Per Section. § Referred to the Grid Terminal. † Excluding Flexible Leads. ‡ Per Strand.



VACUUM POWER TUBES



 Type	Description
TRIODES (Water-Cooled)	
9C21	Multi-strand single-phase tungsten-filament type utilizing grid-flange and filament-header construction. For high-power broadcast and industrial rf heating applications. Special terminal connections.
207	High-voltage type with tungsten filament. For industrial and communication service. Special terminal connections.
862-A	Tungsten-filament type especially designed for high-power broadcast applications. Special terminal connections.
880	High-frequency tungsten-filament type. For use in high-power broadcast and industrial rf heating applications. Uses special terminal connections.
889-A	High-frequency tungsten-filament type with specially designed mount and terminal connections. Particularly suitable for industrial rf heating applications. May also be used for high-power broadcast services.
891	Two-section tungsten-filament type. Suitable as an oscillator in induction and dielectric heating devices. Special terminal connections.
892	Two-section tungsten-filament type similar to type 891 except for a higher mu.
893-A	Three-phase tungsten-filament type. Designed to permit operation from one-, three-, or six-phase ac or dc supply. For general broadcast and industrial rf heating applications. Special terminal connections.
898-A	Three-phase tungsten-filament type featuring a 100000-watt rf power output in class C telegraph service. For high-power broadcast and industrial rf heating applications. Special terminal connections.
5770	Improved version of 9C21 with thoriated-tungsten filament for high-emission capability and a saving of 60 percent in filament power, and a large heavy-duty grid. For high-power broadcast and industrial rf heating applications. Special terminal connections. Typical class C telegraphy values are for cathode-drive service.
5771	Improved version of 880 with thoriated-tungsten filament for high-emission capability and a saving of 70 percent in filament power, and high-conductivity Kovar grid and filament seals. For industrial and communications service. Special terminal connections. In class C telegraph service up to 1.6 Mc, this tube can deliver 53 kw approx.
6383	Uhf Power Triode. Liquid-and-forced-air-cooled type with coaxial-electrode structure. Full plate voltage and plate input ratings apply up to 2000 Mc. Special terminal connections. Typical values shown are for cathode-drive service.

 Type	Description
TETRODES (Air-Cooled)	
860	Thoriated-tungsten filament type featuring high power without neutralization. Medium 4-pin, ceramic, bayonet base.
861	Thoriated-tungsten filament type with plate, grid, and screen leads supported on separate stems to insure high insulation. Special terminal connections.
865	Thoriated-tungsten filament type of rf power amplifier and frequency multiplier. Medium 4-pin, bayonet base. Small cap.

For key to terminal connections, see page 15. Note 5: Diametrically opposite terminals must be connected together. Note 6: Terminal No. 5 is above grid arm. Note 7: Grid terminals are spaced diametrically wider than filament terminals.



See Note 5
9C21



207



862-A



See Note 7
880



889-A



891 892



See Note 6
893-A



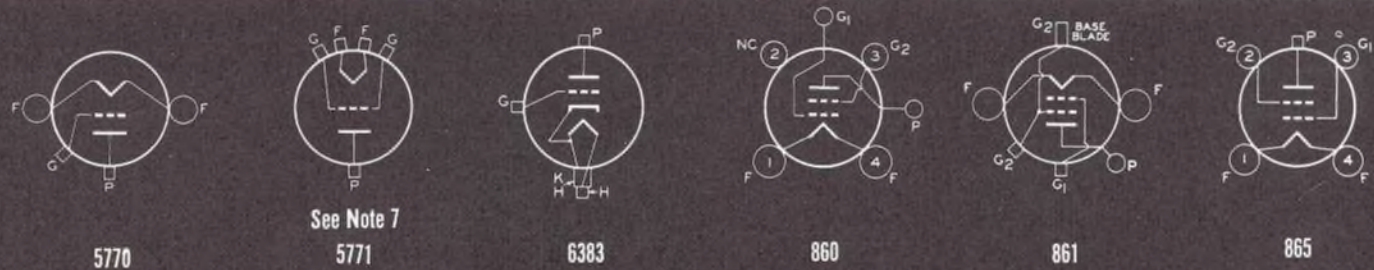
See Note 6
898-A

VACUUM POWER TUBES

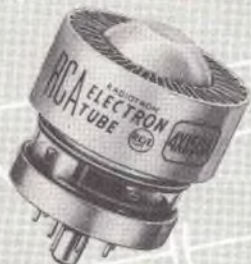
Cathode		Max. Dimensions Inches		Amplification Factor	Class of Service	Max. Frequency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							Type
							Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to-Plate Load Ohms	Approx. Driving Power Watts	Power Output Watts	
Volts	Amp.	Length	Diam.														
TRIODES (Water-Cooled)																	
19.5	415	24½	9½	40	B C-P C-T	— 15 15	15000 12500 17000	90000 50000 150000	40000 28000 40000	14000 12500 17000	-300 -1670 -1600	1050 — —	0.6 3.5 7.9	4000 — —	150 1570 1800	61000 38000 100000	9C 21
22.0	52.0	20¼	6½*	20	B C-P C-T	— 1.6 1.6	15000 10000 15000	20000 10000 30000	7500 6600 10000	12500 10000 12000	-575 -2000 -1600	2300 — —	0.4 0.75 1.67	10000 — —	400 185 235	22500 6000 15000	207
33.0	207	60¾	10*	45	B C-P C-T	— 1.6 1.6	15000 12000 20000	100000 60000 200000	50000 50000 100000	12000 12000 18000	0 -800 -1000	2000 — —	3.0 5.0 8.33	1800 — —	450 2000 2400	90000 45000 100000	862-A
12.6	320	11¾	7	20	B C-P C-T	— 25 25	10500 10500 10500	40000 36000 60000	15000 12000 20000	10000 10000 10000	-450 -1200 -1000	1680 — —	1.0 3.6 6.0	3100 — —	540 1100 1500	46000 27000 40000	880
11.0	120	10¼	3⅝	21	B C-P C-T	— 50 50	8500 6000 8500	12000 6000 16000	5000 3000 5000	7500 6000 7500	-300 -900 -800	1700 — —	0.4 1.0 2.0	5000 — —	150 140 400	15000 4000 10000	889-A
11.0‡	60.0	20⅞	6½*	8.5	B C-T	— 1.6	15000 12000	20000 18000	5000 6000	12500 10000	-1450 -2000	3760 —	0.4 1.33	12000 —	245 375	22000 10000	891
11.0‡	60.0	20⅞	6½*	50	B C-P C-T	— 1.6 1.6	15000 10000 15000	20000 10000 30000	7500 6600 10000	12500 10000 12000	-170 -1600 -1600	1370 — —	0.4 0.78 1.55	10000 — —	160 460 565	22000 6000 14000	892
10^	61.0‡	26¾	6¾*	34.5	B C-P C-T	— 5 5	20000 12000 20000	60000 24000 70000	20000 12000 20000	18000 12000 18000	-450 -1000 -1000	1720 — —	0.8 2.0 3.6	8000 — —	140 210 340	70000 18000 50000	893-A
33.0‡	70.0‡	60¾	10*	45	B C-P C-T	— 1.6 1.6	15000 12000 20000	100000 60000 200000	50000 50000 100000	12000 12000 18000	-100 -800 -1000	2200 — —	2.0 5.0 8.33	2000 — —	6000 2000 2400	90000 45000 100000	898-A
11	285	24½	9½	40	B C-P C-T	— 20 20	15000 12500 17000	90000 60000 150000	50000 33000 50000	15000 12500 17000	-320 -1500 -1450	1560 — —	0.6 4.5 8.5	2640 — —	688 2160 11200	117000 45000 114000	5770
7.5	170	11¾	7	20	B C-P C-T	— 25 25	12500 10000 12500	45000 40000 60000	22500 15000 22500	12500 10000 12500	-600 -840 -630	1900 — —	1.0 3.8 4.8	4400 — —	430 1010 1050	55000 29000 44000	5771
6.3	3.4	4¾	1¾	27	A ₁ C-P C-T-F C-M	— 2000 2000 —	1500 1200 1500	600 400 600	600 400 600	1500 1280‡ 1580‡ 1675‡	-40 80‡ 80‡ 175‡	35 — — —	0.25 0.335 0.4 0.4	Load Res., 1550 ohms — —	60 53 85 160	60 100 150 225	6383


Cathode		Max. Dimensions Inches		Transconductance Micro-mhos	Class of Service	Max. Frequency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							Type
							Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid No. 3 Volts	Grid No. 2 Volts	Grid No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Power Output Watts	
Volts	Amp.	Length	Diam.														
TETRODES (Air-Cooled)																	
10.0	3.25	8¾	4¼	1100	C-P C-T	30 30	2000 3000	170 300	67 100	2000 3000	— —	220 300	-200 -150	0.085 0.085	17 7	105 165	860
11.0	10.0	17¾	6⅝	2400	C-P C-T	20 20	3000 3500	650 1200	270 400	3000 3500	— —	375 500	-200 -250	0.2 0.3	35 30	400 700	861
7.5	2.0	5¾	2¼	750	C-P C-T	15 15	500 750	30 45	10 15	500 750	— —	125 125	-120 -80	0.04 0.04	2.5 1.0	10 16	865

For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. ♦ Excluding Flexible Leads. ‡ Per Strand. * Maximum Radius.



VACUUM POWER TUBES



 Type	Description
TETRODES (Forced-Air-Cooled)	
6166	Radiator type with a thoriated-tungsten filament. Intended for vhf service in television and cw applications. Coaxial-electrode structure for use with high-power circuits of the coaxial-cylinder type. Plate dissipation of 10 kw. Special terminal connections.
6181	Radiator type for uhf service in television and cw applications. Capable of delivering a synchronizing-level power output of 1200 watts in broad-band television service. Coaxial-electrode structure designed especially for use with high-power circuits of the coaxial-cylinder cavity type. Coated, unipotential cathode. Special terminal connections.
TETRODES (Water-Cooled)	
8D21	Water-cooled push-pull twin type with a thoria-coated multi-strand filament. For use as a class C grid-modulated rf power amplifier in television service. Features high power sensitivity, low interelectrode capacitances, and excellent internal shielding. Special terminal connections.
BEAM POWER TUBES (Forced-Air-Cooled)	
4-65A	Small, vhf, thoriated-tungsten filament type for power amplifier and oscillator service. Medium-molded-flare septar 5-pin base. Skirted small cap.
4-125A/4D21	Thoriated-tungsten filament type for FM transmitters. Special metal-shell giant 5-pin base. Skirted small cap.
4-250A/5D22	Thoriated-tungsten filament type for use as power amplifier and modulator. Special metal-shell giant 5-pin base. Skirted small cap.
4-1000A	Thoriated-tungsten filament type. For vhf service as an amplifier, oscillator, and modulator. Special 5-contact socket.
4X150A	Very small and compact, uhf, radiator type with unipotential cathode. For power amplifier or oscillator service. May also be used as a wide band amplifier in video applications. Special 8-pin base.
4X150D	Like the 4X150A but has 26.5 volt heater for aircraft use.
4X500A	Small, compact, radiator type with thoriated-tungsten filament. For use as an rf power amplifier and oscillator. Special terminal connections.
827-R	Radiator type with a helical thoriated-tungsten filament. For FM, television and general broadcast services. Special terminal connections.
BEAM POWER TUBES (Water-Cooled)	
6448	Beam Power Tube. Provides high gain as a grid-driven power amplifier. In color or black-and-white TV service, it can deliver a synchronizing-level power output of 15 Kw at 500 Mc, or 12 Kw at 900 Mc.
6806	Beam Power Tube. Provides high gain as a grid-driven power amplifier. In color or black-and-white TV service, it can deliver a synchronizing-level power output of 28 Kw at 550 Mc, or 17 Kw at 750 Mc.

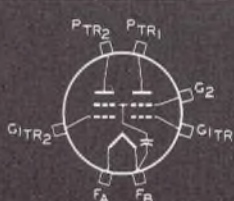
For key to terminal connections, see page 15. Note 9: At the lower frequencies, pin 1 is used for grid-No. 2 connection; at the higher frequencies, contact-ring is used.



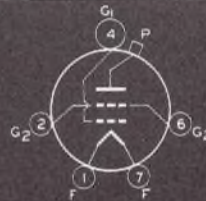
6166



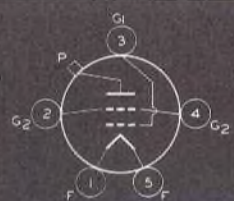
6181



8D21



4-65A



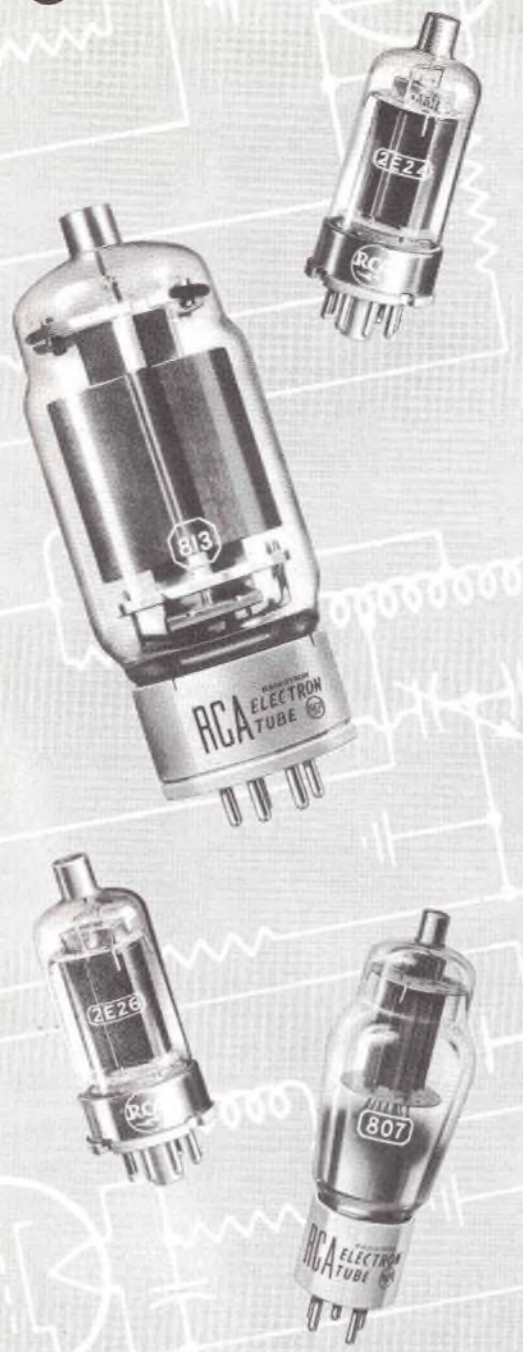
4-125A/4D21


Cathode		Max. Dimensions Inches		Transcon- ductance Micro- mhos	Class of Service	Max. Fre- quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							Type	
							Volts	DC Input Watts	Disipa- tion Watts	Plate Volts	Grid- No. 3 Volts	Grid - No. 2 Volts	Grid - No. 1 Volts	Plate Amperant	Approx. Driving Power Watts	Power Output Watts		
TETRODES (Forced-Air-Cooled)																		
5.0	175	11 5/8	6 13/32	10 §	C-P	30	5000	10000	6600	4700	—	800	-280	1.56	180	5500	6166	
					C-T-F	30	6600	18000	10000	5800	—	1200	-175	2.6	750	9000		
						216	6000	22000	10000	5800	—	1200	-130	3.45	800	12000		
Sync. level conditions per tube. Band width, 8.5 Mc.																		
120	1.6	7 3/16	5 1/32	8 §	C-P	900	1600	1650	1300	1775 †	—	550 †	175 †	1.0	250	950	6181	
					C-T-F	900	2000	2500	2000	1910 †	—	550 †	110 †	0.9	150	600		
					C-B-T	900	2000	3500	2000	1875 †	—	550 †	75 †	1.7	200	1200		
Sync. level conditions per tube. Band width 8 Mc.																		
TETRODES (Water-Cooled)																		
3.2	125	12 9/32	5 3/4	5 § per Unit	See text	300	6000	10000	6000	5000	—	800	—	—	—	—	8D21	
							Synchronizing Level →			5000	—	800	-220	1.9	△	5300		
							Black Level →			5000	—	800	-400	1.45	△	3100		
							White Level →			5000	—	800	-820	—	—	—		
BEAM POWER TUBES (Forced-Air-Cooled)																		
6	3.5	4 3/8	2 3/8	5 § 4000	AB ₂	—	3000	—	65	1800	—	250	-50	0.05	1.3	270	4-65A	
					C-P	50	2500	—	45	2500	—	250	-135	0.11	2.6	230		
					C-T-F	50	3000	—	65	3000	—	250	-100	0.115	1.7	280		
5.0	6.5	5 11/16	2 3/4	5.9 § 2450	C-P	120	2500	—	85	2500	—	350	-210	0.152	3.3	300	4-125A/ 4D21	
					C-T	120	3000	—	125	3000	—	350	-150	0.167	2.5	375		
5.0	14.5	6 3/8	3 3/16	5.1 § 4000	AB ₂	—	4000	—	250	3000	—	300	-53	0.125	1.9	1040	4-250A/ 5D22	
					C-P	75	3200	—	165	3000	—	400	-310	0.225	3.2	510		
					C-T-F	75	4000	—	250	4000	—	500	-225	0.312	2.46	1000		
7.5	21	9 5/8	5 1/4	7 § 10000	AB ₂	—	6000	—	1000	6000	—	500	-75	0.15	9.4	3900	4-1000A	
					C-P	110	5000	—	670	5000	—	500	-200	0.6	11	2440		
					C-T-F	110	6000	—	1000	6000	—	500	-200	0.7	15	3400		
6.0	2.6	2 13/32	1 21/32	5 § 12000	AB ₂	—	1250	—	150	1250	—	300	-44	0.18	0.075	425	4X150A	
					C-T-F	500	1250	—	150	1250	—	280	-80	0.2	10	140		
					C-P	500	1000	—	100	1000	—	250	-105	0.2	2	140		
26.5	0.58	Same as 4X150A except for heater rating.										4X150D						
5.0	13.5	4 3/4	2 5/8	6.2 § 5200	C-T-F	120	4000	—	500	4000	—	500	-150	0.315	5	835	4X500A	
7.5	25	5 11/16	4 21/32	16 §	C-P	110	3000	1200	550	3000	—	750	-325	0.4	68	825	827-R	
					C-T	110	3500	1500	800	3500	—	700	-300	0.428	50	1050		
BEAM POWER TUBES (Water-Cooled)																		
1.35 †	975 †	7 23/32	11 5/8	7.5 §	C-P	1000	4500	20250	16500	4250	—	600	-200	4.0	1000	4500	6448	
					C-T-F	1000	7000	45500	26000	6500	—	800	-140	6.3	800	11000		
					C-B-T	1000	7000	49000	26000	6500	—	950	-140	6.8	1000	12000		
Sync. level conditions per tube. Band width, 7 Mc.																		
1.35 †	915 †	7 23/32	11 3/8	8.2 §	C-P	1000	5500	25000	17000	5000	—	800	-180	4.25	300	10000	6806	
					C-T-F	1000	9000	60000	35000	7500	—	1000	-150	6.8	750	13500		
					C-B-T	1000	9000	70000	36000	8000	—	1000	-140	7.8	1000	17000		
Sync. level conditions per tube. Band width, 7 Mc.																		

For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. * Maximum Radius. † Excluding Flexible Leads. § Grid-Screen Mu-Factor. ‡ 300 to 500 Watts. † Referred to Grid Terminal.

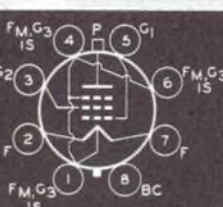


VACUUM POWER TUBES



 Type	Description
BEAM POWER TUBES AND PENTODES (Air-Cooled)	
2E24	Beam power tube with quick-heating coated-filament for mobile communications equipment. Octal 8-pin base. Small cap.
2E26	Beam power tube of the heater-cathode type. Designed for use in the low-power driver stages or in the output stages of FM transmitters. Octal 8-pin base. Small cap.
3A4	Power Amplifier Pentode. Coated-filament, dry-cell miniature type. Can deliver 1.2 watts power output at 10 Mc in rf amplifier service. 7-pin base.
3E29	High-perveance, twin-unit beam power tube with unipotential cathodes. For use in rectangular-wave pulse modulator service. Medium molded-flare septar 7-pin base.
4E27/8001	Beam power tube with an enclosed tantalum anode. Medium metal shell, giant 7-pin, bayonet base. Wire top terminal.
4E27A/5-125B	Filament type with high power gain. For use as an amplifier, oscillator and modulator. The grid-No.-1-to-plate capacitance of only 0.08 μf permits stable operation without neutralization in most applications. Unilaterally interchangeable with types 4E27, 257, 257B, and 8001.
802	Oscillator pentode of the heater-cathode type. Features 23 watts output with only 0.3 watt grid drive at the tube. Medium 7-pin, bayonet base. Small cap.
803	Pentode with heavy-duty thoriated-tungsten filament and graphite anode. Medium shell giant 5-pin, micanol, bayonet base. Medium cap.
804	RF pentode with zirconium-coated anode. Requires less than 2 watts of driving power in any rf service. Small 5-pin, micanol base. Small cap.
807	Beam power tube of the heater-cathode type. For amateur transmitter design. Features high power sensitivity and extremely low grid-driving power. Small 5-pin, micanol base. Small cap.
813	Beam power tube with thoriated-tungsten filament. Useful as a high-power final amplifier for quick band-change. Giant 7-pin base. Medium cap.
814	Beam power tube with thoriated-tungsten filament and zirconium-coated anode. Small 5-pin, micanol base. Small cap.
815	Twin-unit beam power tube with heater-cathode. For experimental low-power, FM, and television transmission. Octal 8-pin base. Two small caps.
828	Beam power tube with a 32.5-watt thoriated-tungsten filament. Features 300 watts audio power (CCS) output per pair with zero driving power and 1% distortion. Small, micanol, 5-pin base. Small cap.
829-B	Twin-unit beam power tube of the heater-cathode type. Septar 7-pin base. Two wire top-terminals.
832-A	Twin-unit beam power tube of the heater-cathode type with features similar to the 829-B.
837	12.6-volt heater-cathode type of power pentode for aircraft, police, and commercial use. Medium 7-pin, micanol base. Small cap.
1613	Metal type amplifier pentode of the heater-cathode type. For police and emergency broadcast use. Useful as a crystal oscillator. Octal 7-pin base.
1614	Metal type beam power tube of the heater-cathode type. For police and emergency broadcast use. Octal 7-pin base.
1619	Metal type beam power tube with a fast-heating coated filament. Useful in equipment requiring quick-on-off action. Octal 7-pin base.
1624	Quick-heating beam power tube of the coated-filament type. Similar to type 807 except for 2.5-volt filament. Small 5-pin base. Small cap.

For key to terminal connections, see page 15.



2E24



2E26



3A4

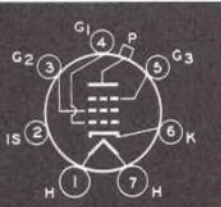


3E29

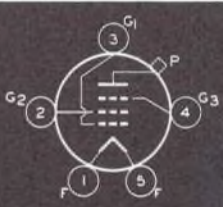


4E27/8001

4E27A/5-125B

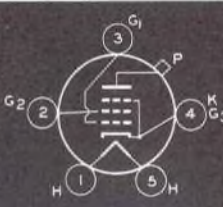


802 837



803 804

814 828



807

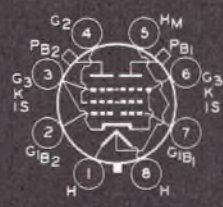
VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Transcon-ductance Micro-mhos	Class of Service	Max. Fre- quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							Type
							Volts	DC Input Watts	Dissipa- tion Watts	Plate Volts	Grid - No. 3 Volts	Grid - No. 2 Volts	Grid - No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Power Output Watts	
BEAM POWER TUBES AND PENTODES (Air-Cooled)																	
6.3	0.65	3 ³ / ₁₆	1 ⁵ / ₁₆	7.5 § 3200	■ C-P ■ C-T	125 125	600 700	37 55	12 18.5	600 650	— —	180 200	-45 -47	0.06 0.084	0.17 0.24	24 37	2E24
6.3	0.8	3 ³ / ₁₆	1 ⁵ / ₁₆	6.5 § 3500	■ AB ₂ ■ C-P ■ C-T	— 125 125	600 600 700	45 37 55	17 12 18.5	600 600 650	— — —	125 200 200	-20 -50 -49	0.026 0.06 0.084	0.91 0.15 0.2	58 24 36	2E26
1.4 2.8	0.2 0.1	2 ¹ / ₈	3 ⁴ / ₄	2250	A ₁ C-T	— 10	150 150	— 3	2 2	150 150	— —	90 135	-8.4 —	13.3 0.0183	— —	0.7 1.2	3A4
6.3 12.6	2.25 1.125	4 ³ / ₁₆	2 ³ / ₈	9 § 8500	Max. Ratings for Modulator Service (Rectangular-Wave Modulation) [▲] Duty Factor, between 0.0001 and 1.0—Averaging Time, 1200μ sec. DC Plate Supply Volts, 5000 Plate Input, 85 watts Peak Plate Amperes, 10 (duty factor = 0.001)												3E29
5.0	7.5	6 ³ / ₁₆	2 ¹¹ / ₁₆	2800	C-P C-T	75 75	3000 4000	250 300	65 75	2500 3000	60 60	600 750	-200 -200	0.1 0.1	0.1 0	200 235	4E27/ 8001
5.0	7.5	6 ³ / ₁₆	2 ³ / ₄	5 § 2150	C-P C-T	75 75	3200 4000	— —	85 125	2500 3000	0 0	500 750	-205 -250	0.152 0.167	2.0 0.9	295 375	4E27A/ 5-125B
6.3	0.9	5 ³ / ₄	2 ¹ / ₁₆	2250	■ C-P ■ C-T	30 30	500 600	20 33	8 13	500 600	40 40	245 250	-40 -120	0.04 0.055	0.1 0.3	12 23	802
10.0	5.0	9 ¹ / ₄	2 ⁹ / ₁₆	4000	C-P C-T	20 20	1600 2000	250 350	85 125	1600 2000	100 40	400 500	-80 -90	0.15 0.16	5 2	155 210	803
7.5	3.0	7 ¹¹ / ₁₆	2 ¹ / ₁₆	3250	■ C-P ■ C-T	15 15	1250 1500	100 150	35 50	1250 1500	50 45	250 300	-90 -100	0.075 0.1	0.75 1.95	65 110	804
6.3	0.9	5 ³ / ₄	2 ¹ / ₁₆	8 § 6000	■ AB ₂ ■ C-P ■ C-T	— 60 60	750 600 750	90 60 75	30 25 30	750 600 750	— 300 250	300 300 250	-35 -85 -45	0.03 0.1 0.1	0.2 0.4 0.3	120 44 54	807
10.0	5.0	7 ¹ / ₂	2 ⁹ / ₁₆	8.5 § 3750	■ AB ₂ ■ C-P ■ C-T	— 30 30	2500 2000 2250	450 400 500	125 100 125	2500 2000 2250	0 0 0	750 350 400	-95 -175 -155	0.035 0.2 0.22	0.35 4.3 4.0	650 300 375	813
10.0	3.25	7 ¹¹ / ₁₆	2 ¹ / ₁₆	3300	■ C-P ■ C-T	30 30	1250 1500	180 225	50 65	1250 1500	0 0	300 300	-150 -90	0.144 0.15	2.0 1.5	130 160	814
6.3 12.6	1.6 0.8	4 ⁹ / ₁₆	2 ³ / ₈	6.5 § 4000	■ C-P ■ C-T	125 125	400 500	60 75	20 25	400 500	— —	175 200	-45 -45	0.15 0.15	0.16 0.18	45 56	815
10.0	3.25	7 ¹¹ / ₁₆	2 ¹ / ₁₆	2700	■ AB ₁ ■ C-P ■ C-T	— 30 30	2000 1250 1500	270 200 270	80 70 80	2000 1250 1500	60 75 75	750 400 400	-120 -140 -100	0.05 0.16 0.18	0 2.7 2.2	385 150 200	828
6.3 12.6	2.25 1.125	4 ⁵ / ₁₆	2 ³ / ₈	9 § 8500	AB ₁ ■ C-P ■ C-T	— 200 200	750 600 750	100 90 120	30 28 40	600 600 750	— — —	200 200 200	-18 -60 -50	0.04 0.15 0.16	— 0.5 0.4	44 70 90	829-B
6.3 12.6	1.6 0.8	3 ⁵ / ₁₆	2 ³ / ₈	6.5 § 3500	C-P C-T	200 200	600 750	22 36	10 15	600 750	— —	200 200	-65 -65	0.036 0.048	0.18 0.19	17 26	832-A
12.6	0.7	5 ³ / ₄	2 ¹ / ₁₆	3400	C-P C-T	20 20	400 500	20 32	8 12	400 500	40 40	140 200	-40 -75	0.045 0.06	0.3 0.4	11 22	837
6.3	0.7	3 ¹ / ₄	1 ⁵ / ₁₆	2500	C-P C-T	45 45	275 350	11.5 17.5	7 10	275 350	— —	200 200	-35 -35	0.042 0.050	0.16 0.22	6 9	1613
6.3	0.9	4 ³ / ₁₆	1 ⁵ / ₈	6050	■ C-P ■ C-T	80 80	375 450	35 45	21 25	375 450	— —	250 250	-50 -45	0.093 0.1	0.15 0.15	24.5 31	1614
2.5	2.0	4 ⁵ / ₁₆	1 ⁵ / ₈	4500	AB ₂ C-P C-T	— 45 45	400 325 400	30 20 30	15 10 15	400 325 400	— — —	300 285 300	-16.5 -50 -55	0.075 0.062 0.075	0.4 0.18 0.36	36 13 19.5	1619
2.5	2.0	5 ³ / ₄	2 ¹ / ₁₆	4000	AB ₂ C-P C-T	— 60 60	600 500 600	54 37.5 54	25 16.5 25	600 500 600	— — —	300 275 300	-25 -50 -60	0.042 0.075 0.09	1.2 0.25 0.43	72 24 35	1624

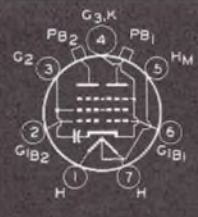
For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise speci- fied, all values shown are for Continuous Commercial Service. ■ Intermittent Commercial and Amateur Service. ▲ Values are for Units in Parallel. ■ Intermittent Mobile Service. § Grid-Screen Mu-Factor.



813



815



829-B 832-A



1613 1614




1619



1624

VACUUM POWER TUBES

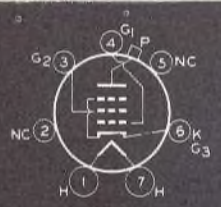


 Type	Description
BEAM POWER TUBES AND PENTODES (Air-Cooled)—Cont'd	
1625	Same as 807 except for 12.6-volt filament. Medium 7-pin, micanol base.
5618	Transmitting pentode of the 7-pin miniature type for use in mobile and other communications equipment where compactness and low filament-power consumption are primary requirements. Has quick-heating, mid-tapped, coated filament for operation at either 6 or 3 volts. Typical values shown are for operation at 80 Mc.
5763	Beam power tube of the 9-pin miniature type for use in compact, low-power mobile transmitters and in the low-power stages of fixed station transmitters. Particularly useful in doubler and tripler service. Has unipotential cathode.
5894	Small, sturdy, twin beam power tube. For use as a push-pull rf power amplifier or as a frequency tripler in fixed and mobile equipment operating between 450 and 470 Mc. Plate dissipation rating of 40 watts. Features high power sensitivity, 100 watts input (CCS) at 470 Mc, and 120 watts input (CCS) up to 250 Mc. Small-wafer septar 7-pin base. Two wire-top terminals.
6146	Small, sturdy, vhf beam power tube. Operates at relatively low plate voltages due to its high efficiency and high power sensitivity. For use as an amplifier, oscillator, and modulator in both fixed and mobile equipment. Useful up to 175 Mc at reduced ratings. Octal 8-pin base.
6159	Vhf beam power tube. Like the 6146 but has a 26.5-volt heater for use in aircraft service.
6293	Small, sturdy, beam power tube intended for pulse modulator service in both fixed and mobile equipment. Rated for service with duty factors up to 1.0 at a maximum averaging time of 10,000 microseconds. Octal 8-pin base.
6417	Transmitting beam power tube. Like the 5763 but has a 12.6-volt heater for operation directly from 12-volt storage batteries.
6524	Small, sturdy, twin beam power tube. Intended primarily as a push-pull, rf power amplifier or frequency tripler in fixed and mobile equipment operating between 450 and 470 Mc. Plate dissipation rating of 25 watts. Features high power sensitivity, 45 watts input (ICAS) at 470 Mc, and 85 watts input (ICAS) up to 100 Mc. Medium-button septar 7-pin base. Two wire-top terminals.
6850	Like the 6524 but has 12.6-volt heater.
6883	Like the 6146 but has 12.6-volt heater.

EXPLANATION OF CLASS-OF-SERVICE ABBREVIATIONS

- C-P = Class C Plate-Modulated Telephone Service.
- C-T = Class C Telegraph Service.
- C-T-F = Class C Telegraph or FM Telephone Service.
- A₁ = Class A₁ AF Modulator Service.
- AB₁ = Class AB₁ Push-Pull AF Modulator Service.
- AB₂ = Class AB₂ Push-Pull AF Modulator Service.
- B = Class B Push-Pull AF Modulator Service.
- C-B-T = Class B Television Service.
- C-C-T = Class C Television Service.
- C-M = Frequency Multiplier Service.

NOTE: In Classes of Service C-B-T, C-C-T, C-P, C-T, C-T-F, A₁, and C-M, the values shown under Maximum Plate Ratings and Typical Operating Conditions are for one tube. In Classes of Service AB₁, AB₂, and B, the values shown under Maximum Ratings are for one tube; and those under Typical Operating Conditions are for two tubes.



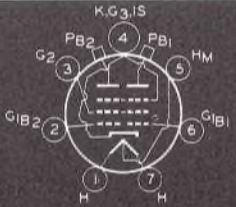
1625



5618



5763



5894



6146

6883

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Trans-conductance Micro-mhos	Class of Service	Max. Fre-quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							Type
							Volts	DC Input Watts	Dis-sipation Watts	Plate Volts	Grid - No. 3 Volts	Grid - No. 2 Volts	Grid - No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Power Output Watts	
BEAM POWER TUBES AND PENTODES (Air-Cooled)—Cont'd																	
12.6	0.45	5 $\frac{3}{4}$	2 $\frac{1}{16}$	For maximum ratings and typical operating conditions, refer to Type 807.										1625			
6.0 ^o 3.0 ^Δ	0.23 ^o 0.46 ^Δ	2 $\frac{5}{8}$	3 $\frac{1}{4}$	—	• C-T-F	100	300	7.5	5	300	0	75	-45	0.025	0.3	4.5	5618
					• C-M	100	300	7.5	5	300	0	75	-125	0.025	0.75	3.5	
6.0	0.75	2 $\frac{5}{8}$	7 $\frac{7}{8}$	16 $\frac{5}{8}$ 7000	C-T-F	50	300	15	12	300	0	250	-60	0.05	0.35	7	5763
					• C-M	50	300	15	12	300	0	▲	-75	0.04	0.6	2.1	
12.6 6.3	0.9 1.8	4 $\frac{5}{16}$	1 $\frac{13}{16}$	8.2 $\frac{5}{8}$	C-P	250	450	72	27	380	—	250	-60	0.16	13	35	5894
							At 470 Mc →										
					C-T-F	250	600	120	40	500	—	250	-60	0.2	13	55	
6.3	1.25	3 $\frac{13}{16}$	1 $\frac{23}{32}$	4.5 $\frac{5}{8}$ 7000	• AB ₂	—	750	90	25	750	—	165	-46	0.022	0.4	131	6146
					• C-P	60	600	67.5	16.7	600	—	150	-87	0.112	0.4	52	
					• C-T-F	60	750	90	25	750	—	160	-62	0.12	0.2	70	
26.5	0.3	Same as 6146 except for heater rating.										6159					
6.3	1.25	3 $\frac{13}{16}$	1 $\frac{23}{32}$	4.5 $\frac{5}{8}$ 7000	Typical Operation in Rectangular-Wave Pulse Modulator Service: Peak Plate Amperes, 3 Plate Supply Volts, 2000 Pulse Duration, 30 μ sec. Duty Factor 0.003										6293		
12.6	0.375	2 $\frac{5}{8}$	7 $\frac{7}{8}$	16 $\frac{5}{8}$ 7000	For maximum ratings and typical operating conditions, refer to Type 5763.										6417		
6.3	1.25	3 $\frac{9}{16}$	1 $\frac{13}{16}$	8.5 $\frac{5}{8}$ 4500	• AB ₂	—	600	85	25	600	—	200	-26	0.021	0.1	57	6524
					• C-P	100	500	55	16.7	500	—	200	-61	0.1	0.2	40	
					• C-T-F	100	600	85	25	600	—	200	-44	0.12	0.2	56	
					• C-M	100	400	45	25	300	—	250	-148	0.11	4	8.5	
12.6	0.625	Same as 6524 except for heater rating.										6850					
12.6	0.625	Same as 6146 except for heater rating.										6883					

To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. • Intermitent Commercial and Amateur Service. * For series filament arrangement, filament voltage is applied between pins No. 1 and No. 7. The grid-No. 1 voltage is referred to pin No. 1, and grid-No. 3 is connected to pin No. 1. † For parallel filament arrangement, filament voltage is applied between pin No. 5 and pins No. 1 and No. 7 connected together. Grid-No. 1 voltage is referred to pin No. 5, and grid-No. 3 is connected to pin No. 5. ‡ Obtained from plate-supply voltage of 300 volts through a series resistor of 12500 ohms. § Grid-Screen Mu-Factor. ¶ Per Section.

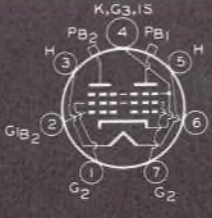
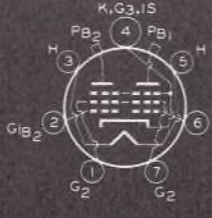
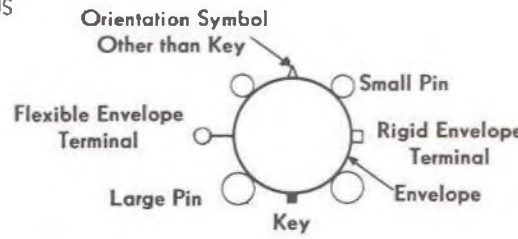
LEGEND FOR BASE AND ENVELOPE CONNECTION DIAGRAMS

Diagrams show terminals viewed from base or filament end of tube.

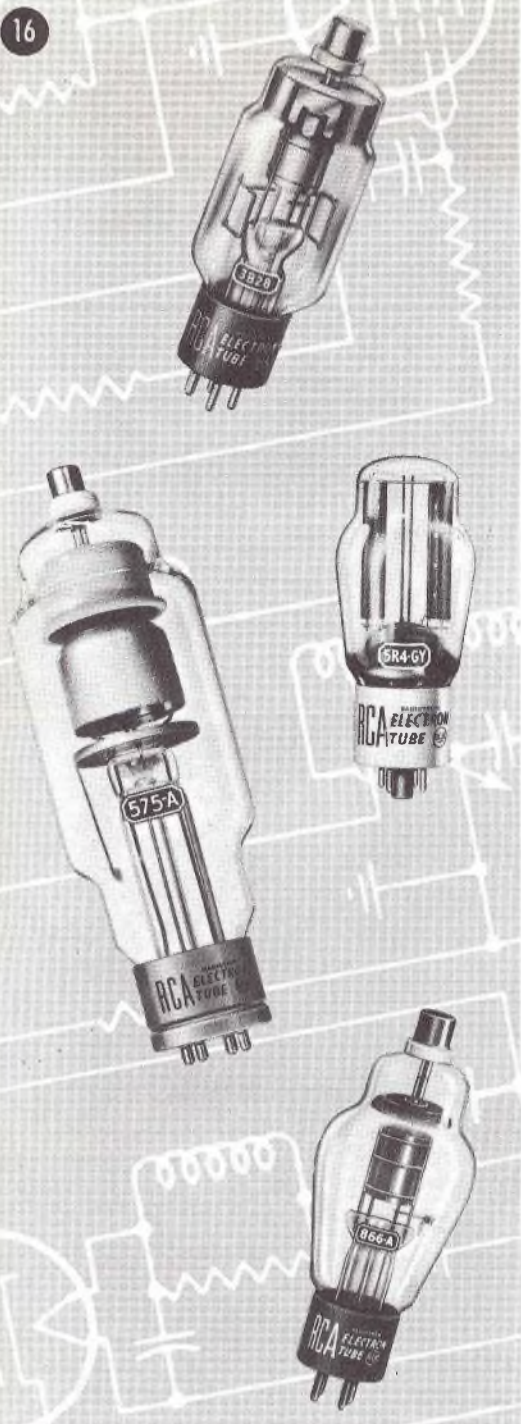
KEY TO TERMINAL DESIGNATIONS

Alphabetical subscripts B, D, P, T, and TR indicate, respectively, beam unit, diode unit, pentode unit, triode unit, and tetrode unit in multi-unit types; and subscript W indicates water connection.

- | | | |
|-----------------------|--------------------------------------|--------------------|
| BC = Base Sleeve | I = Ignitor | NC = No Connection |
| BS = Base Shell | IC = Internal Connection— Do Not Use | P = Plate (Anode) |
| F = Filament | IS = Internal Shield | PH = Holding Anode |
| FM = Filament Mid-Tap | K = Cathode | S = Shell |
| G = Grid | KR = RF Cathode | TC = Thermocouple |
| H = Heater | KS = Cathode Shield | U = Unit |
| HM = Heater Mid-Tap | | • = Gas-Type Tube |



RECTIFIERS



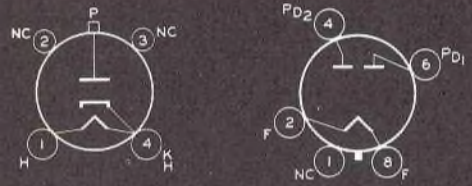
 Type	Description ^{△△}
VACUUM TYPES	
2X2-A	Heater-cathode type. Small 4-pin base. Small cap.
5R4-GY	Full-wave coated-filament type. Octal 5-pin, micanol base.
579-B	Thoriated-tungsten fil. Super-jumbo 4-pin base. Wire top terminal.
836	Heater-cathode type. Small 4-pin, bayonet base. Medium cap.
878	Tungsten filament type. Small 4-pin base. Skirted medium cap.
1616	Coated filament type. Small 4-pin, bayonet base. Medium cap.
5825	Thoriated-tungsten-filament type. Small 4-pin base.
8013-A	Thoriated-tungsten-filament type. Small 4-pin base. Skirted medium cap.
8020	Thoriated-tungsten-filament type. Medium 4-pin, bayonet base.

△△ Unless otherwise stated, these types are half-wave rectifiers.

 Type	Description ^{**}
MERCURY-VAPOR TYPES	
575-A	Same as 673 except for jumbo 4-pin, bayonet base.
673	Half-wave rectifier. Super-jumbo 4-pin, bayonet base. Medium cap.
816	Half-wave rectifier. Small 4-pin base. Small cap.
857-B	Half-wave rectifier. Special terminal connections. Skirted large cap.
866-A	Half-wave rectifier. Small 4-pin, bayonet base. Ceramic insulated medium cap.
869-B	Half-wave rectifier. Special end-mountings. Skirted large cap.
872-A	Same as 8008 except for jumbo 4-pin base.
5558	Half-wave rectifier. Small 4-pin, bayonet base. Medium cap.
5561	Half-wave rectifier. Rated for welder-control service with a maximum averaging time of 15 seconds. Super-jumbo 4-pin, bayonet base.
8008	Half-wave rectifier. Super-jumbo 4-pin base. Ceramic insulated medium cap.

GAS TYPES	
3B25	Half-wave xenon rectifier. Small 4-pin, bayonet base. Medium cap.
3B28	Half-wave xenon rectifier. Small 4-pin, bayonet base. Medium cap.

For key to terminal connections, see page 15. Note 8: F₁ lead has insulating beads. Note 10: F₁ is on left side of tube type marking on base. Note 11: Use jumpers across socket terminals 1 and 2, 3 and 4.
 ** These types have coated filaments except the 5558 and 5561, which are heater-cathode types.

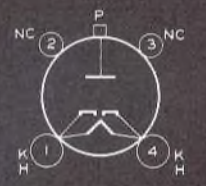


2X2-A

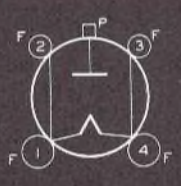
5R4-GY



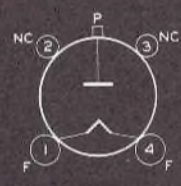
579-B



836



878

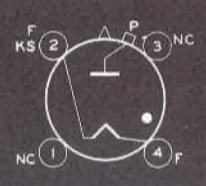


1616

8013-A 8020



5825



575-A

872-A

See Note 11

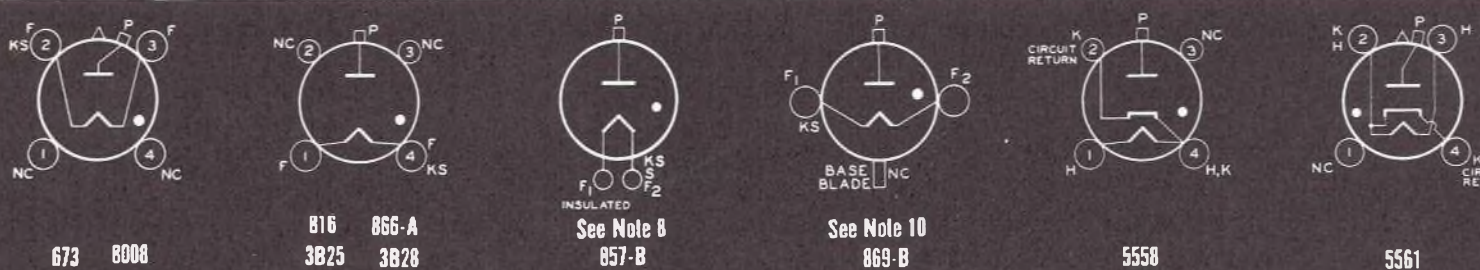
RECTIFIERS

Applications	Cathode		Max. Dimensions Inches		Max. Plate or Anode Ratings			Type
	Volts	Amp.	Length	Diam.	Peak Inverse Volts	Peak Amperes	Average Amperes	
VACUUM TYPES								
For equipment subject to excessive shock and vibration.	2.5	1.75	4 ⁷ / ₃₂	1 ⁹ / ₁₆	12500†	0.06†	0.0075†	2X2-A
For low-power stages of transmitters.	5.0	2.0	5 ⁵ / ₁₆	2 ¹ / ₁₆	2800†	0.65†°	0.175†^	5R4-GY
For high-voltage low-current uses.	2.5	6.0	7 ¹ / ₁₆	2 ¹ / ₁₆	20000	0.27	0.025	579-B
For transmitters subject to large ambient temperature range.	2.5	5.0	6 ⁹ / ₁₆	2 ¹ / ₁₆	5000	1.0	0.25	836
For high-voltage low-current uses.	2.5	5.0	7 ⁵ / ₈	1 ¹³ / ₁₆	20000	0.02	0.005	878
For transmitters requiring quick operation.	2.5	5.0	6 ¹³ / ₁₆	2 ¹ / ₁₆	6000	0.8	0.13	1616
For rf-operated, high-voltage, low-current power supplies.	1.6	1.25	5 ²⁷ / ₃₂	2 ¹ / ₁₆	60000	0.04	0.002	5825
For high-voltage low-current uses.	2.5	5.0	6 ¹ / ₁₆	2 ¹ / ₁₆	40000*	0.15	0.02	8013-A
For high-voltage low-current uses.	5.0	6.0	8	2 ⁵ / ₁₆	40000	0.75	0.1	8020

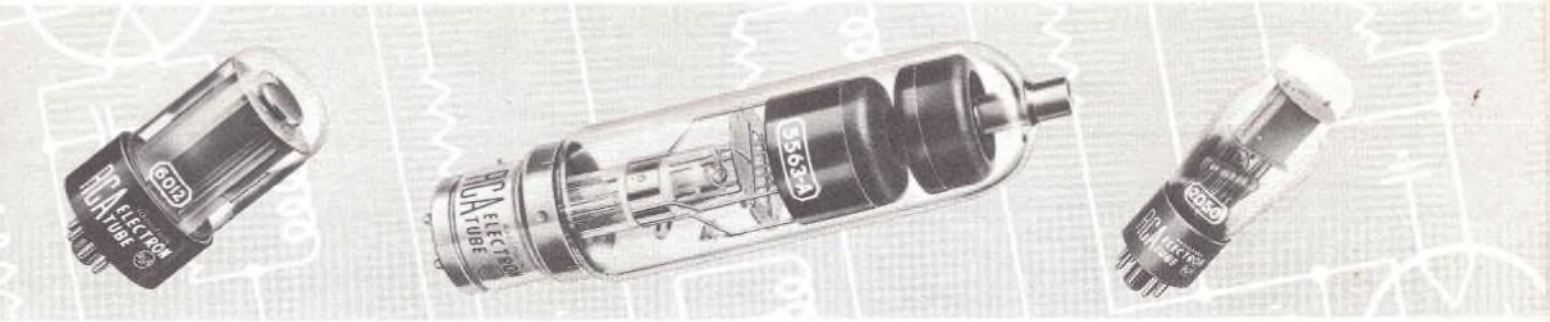
* For oil-immersed operation a maximum peak inverse voltage rating of 55,000 volts applies.

Cathode		Max. Dimensions Inches		Tube Voltage Drop	Max. Plate or Anode Ratings—For Supply Frequency of 60 cps					Operating Conditions (Single-Phase Full-Wave 2 Tubes) ^{°°}				Type
Volts	Amp.	Length	Diam.		Temp. Range Condensed Mercury °C	Peak Inverse Volts	Peak Amperes	Average Amperes	Fault Amperes	Peak Inverse Volts	Max. AC Plate-to-Plate Supply Volts	Approx. DC Output Volts To Filter	Max. DC Output Amperes	
<i>Values shown in italics are for Quadrature operation, other values are for in-phase operation.</i>														MERCURY-VAPOR TYPES
5.0	10.0	11 ¹ / ₁₆	3 ¹³ / ₁₆		<i>For maximum ratings and operating conditions, refer to Type 673</i>								575-A	
5.0	10.0	11 ³ / ₈	3 ¹³ / ₁₆	10	25 to 50 25 to 55 <i>30 to 50</i>	15000 10000 <i>15000</i>	6.0 7.0 <i>10.0</i>	1.5 1.75 <i>2.5</i>	60 70 <i>100</i>	15000 10000 —	10600 7000 —	4800 3200 —	3.0 3.5 —	673
2.5	2.0	4 ¹¹ / ₁₆	1 ⁹ / ₁₆	15	20 to 60	7500	0.5	0.125	5	7500	5200	2400	0.25	816
5.0	30.0	19 ⁷ / ₈ ♦	7 ¹ / ₈	15	30 to 40 25 to 60	22000 10000	40.0 40.0	10.0 10.0	400 400	22000 10000	15400 7000	7000 3200	20.0 20.0	857-B
2.5	5.0	6 ⁹ / ₁₆	2 ⁷ / ₁₆	15	20 to 60 20 to 70 20 to 80	10000 5000 2500	1.0 1.0 2.0	0.25 0.25 0.5	20 20 20	10000 5000 2500	7000 3400 1600	3200 1600 800	0.5 0.5 1.0	866-A
5.0	19.0	14 ⁷ / ₁₆	5 ¹ / ₈	15	30 to 40 30 to 50 30 to 60 <i>30 to 40</i> <i>30 to 50</i> <i>30 to 60</i>	20000 15000 10000 <i>20000</i> <i>15000</i> <i>10000</i>	10.0 10.0 10.0 <i>10.0</i> <i>20.0</i> <i>20.0</i>	2.5 2.5 2.5 <i>2.5</i> <i>5.0</i> <i>5.0</i>	100 100 100 <i>100</i> <i>100</i> <i>100</i>	20000 15000 10000 — — —	14000 10600 7000 — — —	6300 4700 3100 — — —	5.0 5.0 5.0 — — —	869-B
5.0	7.5	8 ³ / ₂	2 ⁵ / ₁₆		<i>For maximum ratings and operating conditions, refer to Type 8008</i>								872-A	
5.0	4.5	7	3	15	30 to 60 30 to 80	5000 2000	15.0 15.0	2.5 2.5	200 200	5000 2000	3400 1400	1600 600	5.0 5.0	5558
5.0	10.0	11 ¹ / ₄	3 ¹³ / ₁₆	15	40 to 80 25 to 50	3000 10000	40 16	6.4 4	400 160	3000 —	2000 —	950 —	12.8 —	5561
				15	Welder-Control Service →									
5.0	7.5	8 ³ / ₄	2 ⁵ / ₁₆	15	20 to 60 20 to 70	10000 5000	5.0 5.0	1.25 1.25	50 50	10000 5000	7000 3400	3200 1600	2.5 2.5	8008
GAS TYPES														
2.5	5.0	6 ⁵ / ₁₆	2 ¹ / ₁₆	10	-75 to +90■	4500	2.0	0.5	20	4500	3000	1400	1.0	3B25
2.5	5.0	6 ⁵ / ₃₂	2 ¹ / ₁₆	10	-75 to +90■	10000 5000	1.0 2.0	0.25 0.5	20 20	10000 5000	7000 3400	3200 1600	0.5 1.0	3B28

To facilitate comparison between types, all values are given on an absolute-maximum basis. ♦ Excluding Flexible Leads. °° Condition assumed: (1) Sine-wave supply (2) Zero tube drop, (3) Pure resistance load, (4) No filter. ^ With choke-input to filter. † Design-Center Values. ° Per Plate. ■ Ambient Temperature.



THYRATRONS



RCA Type	Description	Cathode		Max. Dimensions Inches		Approx. Tube Drop Volts	Maximum Ratings				
							Temperature Range		Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Cathode Amperes
		Volts	Amp.	Length	Diam.		Condensed Mercury °C or Ambient °C*				

TRIODES (Mercury-Vapor Types)—For Control Service (except as noted)

3C23	Negative-control, filament type. * ★	2.5	7.0	$6\frac{1}{8}$	$2\frac{1}{16}$	15	-40 to $+80\ddagger$	1250	1250	6.0	1.5	120	
627	Negative-control, filament type. † ★	2.5	6.0	7	$2\frac{7}{16}$	12	25 to 70	1250	2500	2.5	0.64	25	
676	Negative-control, heater-cathode type. Super-jumbo 4-pin base. Medium cap.	5.0	10.0	$11\frac{3}{4}$	$3\frac{3}{16}$	12	40 to 80	2500	2500	40.0	6.4	200	
							Welder Control Ratings →	40 to 90	750	750	77.0	2.5	200
677	Negative-control, heater-cathode type. † ★	5.0	10.0	$11\frac{3}{4}$	$3\frac{13}{16}$	12	30 to 50	10000	10000	15.0	4.0	16	
5557	Negative-control, filament type. * ★	2.5	5.0	$6\frac{5}{8}$	$2\frac{7}{16}$	15	40 to 80	2500	5000	2.0	0.5	40	
5559	Neg.-control, heater-cathode type. * ★	5.0	4.5	$7\frac{1}{4}$	3	16	40 to 80	1000	1000	15.0	2.5	200	
5563-A	Negative-control, filament type. Jumbo 4-pin, bayonet base. Medium cap.	5.0	10.0	$11\frac{1}{16}$	$3\frac{7}{8}$	15	25 to 50 25 to 55	20000 15000	20000 15000	6.4 10.0	1.6 1.8	50 50	
5728/ FG-67	Negative/positive-control, heater-cathode type. Inverter service. * ★	5.0	4.5	7	3	16	40 to 80	1000	1000	15	2.5	200	

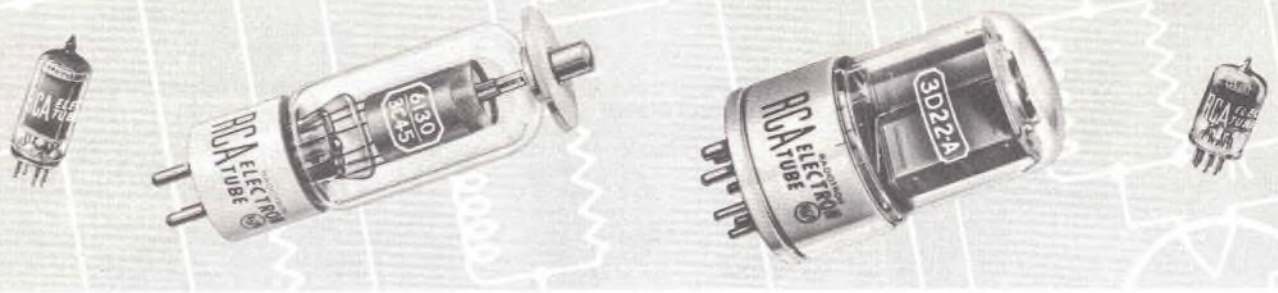
TRIODES (Gas Types)—For Control Service (except as noted)

629	Neg.-control, heater-cathode type. $\emptyset \ddagger$	2.5	2.6	$4\frac{1}{4}$	$1\frac{9}{16}$	15	-40 to $+70$	350	350	0.2	0.04	2
884	Negative-control, heater-cathode type. Relaxation oscillator. Small 5-pin base.	6.3	0.6	$4\frac{1}{8}$	$1\frac{9}{16}$	14	-75 to $+90$	350	—	0.3	0.075	—
							Max. Ratings for Relaxation Oscillator Service Peak Anode Volts, 300 Peak Cathode Amp., 0.3					
885	Neg.-control, heater-cathode type. $\emptyset \ddagger$	2.5	1.5	$4\frac{3}{16}$	$1\frac{9}{16}$	For additional data, refer to Type 884.						
6130/ 3C45	Positive-control, heater-cathode, hydrogen type. Full ratings to 50,000 feet. Pulse modulator. $\Delta \pi$	6.3	2.3	$5\frac{3}{16}$	$1\frac{9}{16}$	150	-50 to $+90$	3000	3000	35	0.045	—
							Min. DC Anode-Supply Volt, 800 Max. Pulse Duration, 6 μ sec.					
C1K/ 6014	Negative-control, filament type. Small 4-pin, bayonet base.	2.5	6.3	$4\frac{1}{4}$	$1\frac{9}{16}$	8	-55 to $+75$	1000	1250	8.0	1.0	77
C3J/ 5632	Negative-control, filament type. Small 4-pin, bayonet base. Medium cap.	2.5	9.0	6	$1\frac{9}{16}$	10	-55 to $+75$	900	1250	30	2.5	300

* Values shown in italics are Ambient Temperatures. All thyratrons are for continuous service, unless otherwise specified.
 † Small 4-pin base.
 ‡ Small 4-pin, bayonet base.
 § Super-jumbo 4-pin base.
 ¶ Small 5-pin base.
 †† Super-jumbo 4-pin base.
 See page 19 for additional note references.



THYRATRONS



Type	Description	Cathode				Max. Dimensions Inches	Approx. Tube Drop Volts	Maximum Ratings								
		Temperature Range		Peak Forward Anode Volts	Peak Inverse Anode Volts			Peak Cathode Amperes	Average Cathode Amperes	Fault Amperes						
		Volts	Amp.								Length	Diam.	Condensed Mercury °C or Ambient °C*			
TRIODES (Gas Types)—Cont'd—For Control Service (except as noted)																
C3J-A/5684	Negative-control, filament type. Small 4-pin, bayonet base. Medium cap.	2.5	9	6	1 ³ / ₁₆	10	-55 to +75	1000	1250	30	2.5	300				
C6J/5C21	Negative-control, filament type. Super-jumbo 4-pin base. Medium cap.	2.5	21	9 ¹ / ₂	2 ¹ / ₃₂	9	-55 to +75	750	1250	77	6.4	770				
C6J-A/5685	Negative-control, filament type. Super-jumbo 4-pin base. Medium cap.	2.5	21	9 ¹ / ₂	2 ¹ / ₃₂	9	-55 to +75	1000	1250	77	6.4	770				
C16J/5665	Negative-control, filament type. Base bracket and flexible leads.	2.5	31	11 ¹ / ₄	2 ¹ / ₁₆	11	-55 to +75	1000	1250	160	16	1000				
TETRODES (Mercury-Vapor Types)—For Control Service (except as noted)																
105	Negative-control, heater-cathode type. Super-jumbo 4-pin, bayonet base. †	5.0	10.0	11 ¹ / ₄	2 ¹³ / ₁₆ *	16	40 to 80	2500	2500	40.0	6.4	400				
							Max. Ratings for Intermittent Service: 25 to 50					10000	10000	16.0	4.0	160
172	Negative-control, heater-cathode type. Special terminal connections.	5.0	10.0	10 ³ / ₄	2 ⁵ / ₈ *	16	40 to 80	2000	2000	40.0	6.4	400				
							Welder-Control Ratings → 30 to 95					750	750	77.0	2.5	400
632-B	Negative-control, heater-cathode type. Ignitor firing applications. * ‡	5.0	5.0	8 ⁵ / ₁₆	1 ³ / ₄ *	12	40 to 80	1500	1500	30.0	2.5	150				
672-A	Negative-control, heater-cathode type. Ignitor firing applications. @ ★	5.0	5.0	8 ¹ / ₈	2 ³ / ₁₆	12	40 to 80	2500	2500	40.0	3.2	150				
5560	Negative-control, heater-cathode type. Ignitor firing applications. * ‡	5.0	4.5	7 ¹⁵ / ₁₆	2 ¹ / ₄ *	16	40 to 80	1000	1000	15.0	2.5	200				
TETRODES (Gas Types)—For High-Sensitivity Control Service																
2D21	Negative-control, heater-cathode type. Miniature 7-pin base.	6.3	0.6	2 ¹ / ₈	3 ³ / ₄	8	-75 to +90	650	1300	0.5	0.1	10				
							Typical Operating Conditions (Anode Volts, 400 for Relay Service: Grid-No. 1 Circuit Resistance, 1 megohm									
3D22-A	Negative-control, heater-cathode type. Giant 7-pin, bayonet base.	6.3	2.6	4 ⁵ / ₈	2 ³ / ₈	10	-75 to +90	650	1500	8.0	0.8	30				
							Grid-No. 1 Circuit Resistance, 2 megohms max.									
502-A	Negative-control, heater-cathode type. †	6.3	0.6	2 ⁵ / ₈	1 ⁵ / ₁₆	11	-55 to +90	650	1300	1.0	0.1	10				
2050	Negative-control, heater-cathode type. Octal 8-pin base.	6.3	0.6	4 ¹ / ₈	1 ⁹ / ₁₆	8	-75 to +90	650	1300	1.0	0.1	10				
							Grid-No. 1 Circuit Resistance, 10 megohms max.									
5696	Negative-control, heater-cathode type. Low-heater current drain and short de-ionization time. Miniature 7-pin base.	6.3	0.15	1 ³ / ₄	3 ³ / ₄	10	-55 to +90	500	500	0.1	0.025	2				
							Typical Operating Conditions for Relay Service: AC Anode Voltage (RMS), 117 volts Peak Grid-No. 1 Signal Volts, 5 volts Grid-No. 1 Bias Volts (RMS), 5 Grid-No. 1 Circuit Resistance, 0.1 megohm									
6012	Negative-control, heater-cathode type. Octal 6-pin base.	6.3	2.6	4 ¹ / ₄	1 ²³ / ₃₂	10	-75 to +90	650	1300	5	0.5	20				

‡ Octal 8-pin base.
★ Medium cap.
π Small cap.

■ For Government end use only.

§ Two medium caps.
♦ Two large caps.
+ Relaxation oscillator.

For key to terminal connections, see page 15.

† Metal type.
‡ Tube contains mercury and gas.
* Maximum radius.

See page 18 for additional note references.



672-A

5560

2D21 5696

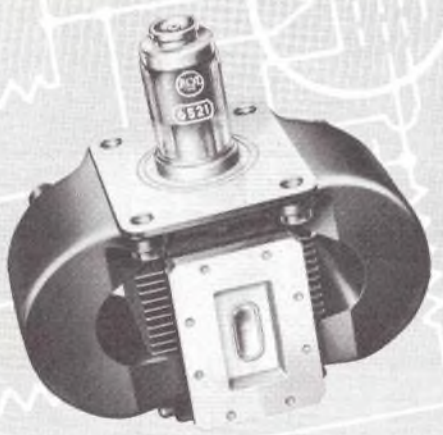
3D22-A

502-A

2050

6012

MAGNETRONS AND KLYSTRONS




 Type	Description
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MAGNETRONS	
4J50	Magnetron of the internal-resonant circuit type with an integral magnet. For pulsed-oscillator service at a fixed frequency of 9375 Mc in applications such as radar. Peak power output 240 Kw at a duty cycle of 0.001 and peak anode current of 27.5 amperes.
4J52	Magnetron of the internal-resonant circuit type with an integral magnet. For pulsed-oscillator service at a fixed frequency of 9375 Mc in applications such as radar. Peak power output 80 Kw at a duty cycle of 0.001 and peak anode current of 15 amperes.
6521	Magnetron of the internal-resonant circuit type with an integral magnet. Designed and conservatively rated for long, reliable performance as a pulsed oscillator at a fixed frequency of 5400 Mc in weather radar equipment.

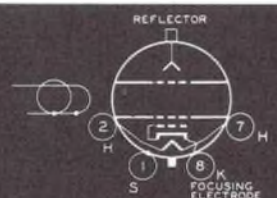
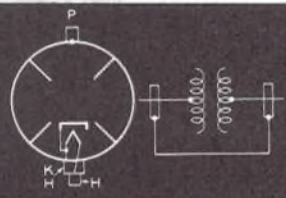
 Type	Description
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KLYSTRONS	
2K26	Single-resonator, reflex type with an integral resonant cavity and mechanical tuning mechanism. For local oscillator service in applications such as microwave receivers. Can be electrically tuned to give about a 55 Mc venier adjustment. Useful power output about 100 Mw.

VACUUM-GAUGE TUBES

 Type	Description	
1945	Hydrogen-Sensitive, Ionization Type. Especially useful in locating minute leaks in vacuum enclosures. Can be connected to either a glass or a metal system. Has 1/8"-27 NPT pipe thread. Metal shell. Octal 8-pin base.	
1946	Thermocouple Type. Resistance of thermocouple, 5 ohms approx.	For use in determination of gas pressures in vacuum systems and vacuum enclosures.
1947	Pirani Type. Each tube individually calibrated to 135.8 ohms res., under vacuum better than 3 x 10 ⁻⁵ mm of Hg. Small 4-pin base.	
1949	Ionization Type having two tungsten filaments, one a spare.	
1950	Ionization Type similar to 1949 but constructed with soft glass.	

For key to terminal connections, see page 15.



NOTE: COAXIAL OUTPUT LINE PASSES THROUGH VACANT PIN POSITION N° 4.

Heater		Frequency	Maximum Ratings							Typical Operation					Type
			Duty Cycle	Peak Anode Volts	Peak Anode Amperes	Peak Power Input Watts	Pulse Duration μ sec.	Operation Time in 100 μ sec. Interval	Anode-Block Temp. $^{\circ}$ C	Duty Cycle	Peak Anode Volts	Peak Anode Amperes	Pulse Duration μ sec.	Peak Power Output Watts	
MAGNETRONS															
13.75	3.15	9375 \pm 30	0.001	23000	27.5	635000	1.2	6	150	0.001	21000	23.5	3	185000	4J50
12.6	2.1	9375 \pm 30	0.002	16000	30	450000	1.2	6	150	0.001	15000	15	5	80000	4J52
10	3.2	5400 \pm 20	0.001	16000	16	256000	2.2	5	150	0.0008	15000	13.5	2	85000	6521
KLYSTRONS															
Heater		Frequency Range	Maximum Ratings							Typical Operation as CW Oscillator—Class C Frequency: 6600 Mc.; Mode A; Wave Guide: $\frac{3}{4}$ " x $1\frac{1}{2}$ "					Type
			Resonator		DC Reflector Volts	Temp. of Coaxial Output Line $^{\circ}$ C	Peak Heater-Cathode Volts	Ambient Temp. of Shell $^{\circ}$ C	Resonator		Half-Power Electronic-Tuning Frequency Change Mc	Power Output Watts			
Volts	Amp.	Mc	DC Volts	DC Amperes					DC Volts	DC Amperes			DC Volts	DC Amperes	
6.3	0.44	6250 to 7060	330	0.035	0 to -350	90	\pm 50	110	300	0.025	-65 to -120	55	0.12	2K26	

VACUUM-GAUGE TUBES

Heater or Filament		Maximum Dimensions Including Tubulation Inches			Type of Glass	Maximum Ratings			Operating Position	Sensitivity Range of Gas Pressure				Type
						Filament Volts	DC Plate Volts	Dissipation Watts		Usual		Greatest Sensitivity		
Volts	Amp.	Length	Diam.	Tubulation Diam.					Microns of Hg	Mm of Hg	Microns of Hg	Mm of Hg		
Htr. 6.3	0.75	6 $\frac{3}{4}$	1 $\frac{5}{16}$	$\frac{3}{16}$	Hard, Corning Code 772 Nonex	—	300	7	Any	Will detect an increase in hydrogen pressure of less than 10^{-7} mm (10^{-4} microns) of Hg.				1945
Htr. 1.0	0.07	6 $\frac{1}{4}$ ♦	1 $\frac{1}{16}$	$\frac{3}{8}$	Hard, Corning Code 772 Nonex	—	—	—	Any	1000 to 0.1	1 to 10^{-4}	1000 to 1	1 to 10^{-3}	1946
Fil. 10	0.07 to 0.1	7 $\frac{9}{16}$	1 $\frac{3}{16}$	$\frac{7}{32}$	Soft, Corning Code 001 Lead	16	—	—	Any	1500 to less than 10	1.5 to less than 0.01	500 to 10	0.5 to 0.01	1947
Fil. 5	3.5	11 $\frac{1}{2}$ ♦	2 $\frac{3}{16}$ *	$\frac{1}{2}$	Hard, Corning Code 772 Nonex	6.5	-100	—	See Note A	—	—	below 0.1	below 10^{-4}	1949
Fil. 5	3.5	11 $\frac{1}{4}$ ♦	2 $\frac{3}{16}$ *	$\frac{1}{2}$	Soft, Corning Code 012 Lead	6.5	-100	—	See Note A	—	—	below 0.1	below 10^{-4}	1950

* Maximum radius.

♦ Excluding flexible leads.

Note A: Vertical, with tubulation up or down; horizontal, with stem press in vertical plane.



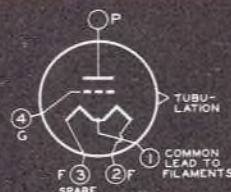
1945



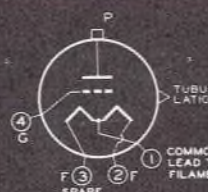
1946



1947



1949



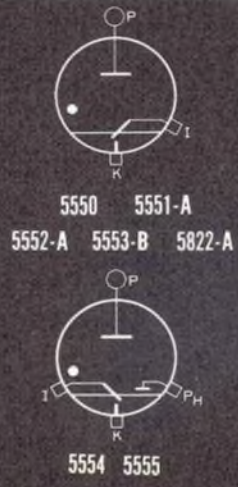
1950

IGNITRONS

RCA Type	Descriptions	Max. Dimensions Inches		Class of Service	RMS Supply Volts	Maximum Anode Ratings ■ For Frequencies from 25 to 60 Cycles							
		Rigid Length	Diam.			Kva Demand	Peak Inverse or Forward Volts	Fault Amperes*	Averaging Time Seconds	Peak Amperes		Average Amperes	
										Welder Service	Rectifier Service	Welder Service	Rectifier Service
5550 Size A	Compact, steel-jacketed type with removable clamp for air or water cooled operation. For Max. Ignition Requirements, see Note 1.	10	2 3/4	AC Welder- Control [†]	250	150*	350	1680	27.8	850	—	4.86	—
					600	150*	850	700	11.6	355	—	4.86	—
5551-A Size B	Steel-jacketed type recommended for welder-control service but also useful for rectifier service in low-power circuits. Supersedes and replaces type 5551. Has bracket for mounting thermostat. For Max. Ignition Requirements, see Note 1.	13 1/2	5 3/4 ▲	AC Welder- Control [†]	250	200	350	2240	18	1130	—	56	—
					600	200	850	940	7.5	470	—	56	—
				Inter- mittent Rectifier	250	600	350	6700	18	3350	—	30.2	—
					600	600	850	2800	7.5	1400	—	30.2	—
5552-A Size C	Steel-jacketed type recommended for welder-control service but also useful for rectifier service in low-power circuits. Supersedes and replaces type 5552. Has bracket for mounting thermostat. For Max. Ignition Requirements, see Note 1.	14 1/2	7 1/4 ▲	AC Welder- Control [†]	250	400	350	4480	14	2240	—	140	—
					600	400	850	1860	5.8	930	—	140	—
				Inter- mittent Rectifier	250	1200	350	13450	14	6730	—	75.6	—
					600	1200	850	5600	5.8	2800	—	75.6	—
5553-B Size D	Steel-jacketed type recommended for welder-control service but also useful for rectifier service in low-power circuits. Supersedes and replaces types 5553 and 5553-A. Has bracket for mounting thermostat. For Max. Ignition Requirements, see Note 1.	20	9 3/8 ▲	AC Welder- Control [†]	250	800	350	9000	11	4500	—	355	—
					600	800	850	3740	4.6	1870	—	355	—
				Inter- mittent Rectifier	250	2400	350	27000	11	13500	—	192	—
					600	2400	850	11200	4.6	5600	—	192	—
5554	Steel-jacketed type for rectifier service in the 125, 250, 600, and 900-volts dc power field. For Max. Ignition Requirements, see Note 2. For Max. Auxiliary Anode Requirements, see Note 3.	17 1/2	7 5/8 ▲	Rectifier	—	—	900	6000	—	—	900	—	100
				AC Welder- Control [†]	2400	1200	3400	3000	1.5	1500	—	75	—
5555	Steel-jacketed type for rectifier service in the 125, 250, 600, and 900-volts dc power field. For Max. Ignition Requirements, see Note 2. For Max. Auxiliary Anode Requirements, see Note 3.	18 1/2	9 1/8 ▲	Rectifier	—	—	900	12000	—	—	1800	—	200
				AC Welder- Control [†]	2400	1105†	3400	6000	0.5	3000	—	207	—
5822-A	Steel-jacketed type. Supersedes and replaces type 5822. Has bracket for mounting thermostat. For Max. Ignition Requirements, see Note 1.	14 1/2	7 1/4	Frequency- Changer	—	—	1200	18750	6.25	1500	—	20	—
				Resistance- Welding	—	—	1200	5250	6.25	420	—	70	—
				AC Welder- Control [†]	—	—	1500	15000	6.25	1200	—	16	—
					—	—	1500	4200	6.25	336	—	56	—

Note 1: Ignition Requirements for Types 5550, 5551-A, 5552-A, 5553-B, and 5822-A: Peak Positive Volts, 200 min.—max. value equal to anode volts; Peak Amperes, 30 min.—100 max.; Average Amperes, 1.0 max.; Ignitor Ignition Time, 100 μ sec. max.
 Note 2: Ignition Requirements for Types 5554 and 5555: Peak Positive Volts, 150 min.—900 max.; Peak Amperes, 40 min.—100 max.; Average Amperes, 2.0 max.; Ignitor Ignition Time, 100 μ sec. max.
 Note 3: Auxiliary Anode Requirements for Types 5554 and 5555: Peak Inverse Volts (main anode conducting), 25 max.; Peak Inverse Volts (main anode non-conducting), 150 max.; Average Amperes, 5.0 max.

■ RMS demand voltage.—current, and kva are on the basis of full-cycle conduction (no phase delay) regardless of whether or not phase control is used. ▲ Including cooling connections. * For duration of 0.15 sec. max. The fault current value is not an operating rating. It is given to assist equipment designers in choice of circuit components such that tube will not be subjected to disastrous currents under abnormal service conditions approximating a short circuit. † AC welder-control ratings shown are for two tubes in inverse parallel. ‡ With clamp temperature: max., 75°C.; min., 10°C. § With clamp temperature: max., 50°C.; min., 10°C. † 100% duty.



INDEX TO RCA POWER AND GAS TUBES

Tube Type	Page	Tube Type	Page	Tube Type	Page	Tube Type	Page
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2C40	2	672-A	19	891-R	6	5770	8
2C43	2	673	16	892	8	5771	8
2D21	19	676	18	892-R	6	5786	6
2E24	12	677	18	893-A	8	5794	4
2E26	12	801-A	2	893A-R	6	5822-A	22
2K26	20	802	12	898-A	8	5825	16
2X2-A	16	803	12	1613	12	5876	4
3A4	12	804	12	1614	12	5893	4
3B25	16	805	2	1616	16	5894	14
3B28	16	807	12	1619	12	5946	6
3C23	18	808	2	1624	12	6012	19
3C33	2	809	2	1625	14	6014	See C1K
3C45	See 6130	810	2	1626	4	6026	4
3D22-A	19	811-A	2	1945	20	6130/3C45 [■]	18
3E29	12	812-A	2	1946	20	6146	14
4-65A	10	813	12	1947	20	6159	14
4-125A/4D21	10	814	12	1949	20	6161	6
4-250A/5D22	10	815	12	1950	20	6166	10
4-1000A	10	816	16	2050	19	6181	10
4C33	6	826	2	5550	22	6263	4
4D21	See 4-125A	827-R	10	5551-A	22	6264	4
4E27/8001	12	828	12	5552-A	22	6293	14
4E27A/5-125B	12	829-B	12	5553-B	22	6383	8
4J50	20	830-B	2	5554	22	6417	14
4J52	20	832-A	12	5555	22	6448	10
4X150A	10	833-A	2 and 6	5556	4	6521	20
4X150D	10	834	2	5557	18	6524	14
4X500A	10	836	16	5558	16	6562	4
5-125B	See 4E27A	837	12	5559	18	6806	10
5C21	See C6J	838	2	5560	19	6850	14
5D22	See 4-250A	845	4	5561	16	6883	14
5R4-GY	16	851	4	5563-A	18	8000	4
7C24	See 5762	857-B	16	5588	6	8001	See 4E27
8D21	10	860	8	5592	6	8005	4
9C21	8	861	8	5604-A	6	8008	16
9C22	6	862-A	8	5618	14	8012-A	4
9C25	6	865	8	5632	See C3J	8013-A	16
10-Y	2	866-A	16	5665	See C16J	8020	16
105	19	869-B	16	5671	6	8025-A	4
172	19	872-A	16	5675	4	C1K/6014	18
207	8	878	16	5684	See C3J-A	C3J/5632	18
502-A	19	880	8	5685	See C6J-A	C3J-A/5684	19
575-A	16	884	18	5696	19	C6J/5C21	19
579-B	16	885	18	5713	6	C6J-A/5685	19
627	18	889-A	8	5728/FG67	18	C16J/5665	19
629	18	889R-A	6	5762/7C24	6	FG67	See 5728

■ For Government end use only.

In addition to the tube types covered in this booklet,
the TUBE DIVISION of the RADIO CORPORATION OF AMERICA offers the following:

RECEIVING-TYPE TUBES FOR INDUSTRY AND COMMUNICATIONS

"Special Red" Tubes, Premium Tubes, "Pencil-Type" Tubes, Computer Tubes, Glow-Discharge Tubes, Small Thyratrons, Traveling Wave Tubes, and Other Special Types.

DRY BATTERIES

For Radios, Flashlights, and Industrial Applications.

RECEIVING TUBES FOR AM, FM, AND TV BROADCAST

Rectifiers, Diode Detectors, Converters, Voltage and Power Amplifiers, Oscillators, Mixers, and TV Picture Tubes.

PHOTOSENSITIVE DEVICES

Television Camera Tubes: Image Orthicons, Iconoscopes, Monoscopes, and Vidicons; *Phototubes:* Single-Unit, Twin-Unit, and Multiplier Types; and *Photoconductive Cells.*

ELECTRONIC COMPONENTS

TV Deflection Components, Speakers, TV Set Couplers, and Lightning Arresters.

TEST AND MEASURING EQUIPMENT

For AM, FM, and TV Servicing, as well as for Laboratories and Industrial Uses.

CATHODE-RAY AND STORAGE TUBES

Special-Purpose Kinescopes, Oscillograph Types, and Storage Types.

RCA VICTOR SERVICE PARTS

For RCA Phonographs, Radios, and TV Receivers.

MINIATURE LAMPS

For Radio and Instrument Panels, and Flashlights.

SEMICONDUCTOR DEVICES

Transistors and Diodes.

For a complete listing of these RCA products, or for technical information on any of these items, see your RCA Tube Distributor, or write to Commercial Engineering, RCA, Harrison, New Jersey.

TECHNICAL PUBLICATIONS ON RCA ELECTRON TUBES



- **RCA TUBE HANDBOOK—HB-3** (7 3/8" x 5"). Five deluxe 2-inch-capacity binders imprinted in gold. The bible of the industry—contains over 3100 pages of loose-leaf data and curves on RCA receiving tubes, picture tubes, cathode-ray tubes, phototubes, special tubes, and semiconductor devices. Available on subscription basis. Price \$17.50* including service for first year. Write to Commercial Engineering for descriptive folder and order form.
- **RCA RECEIVING TUBE MANUAL—RC-17** (8 3/8" x 5 3/8")—336 pages. Revised, expanded, and brought up to date. Contains the latest receiving tubes, including types for black-and-white and color television applications. Features tube theory written for the layman, application data, Resistance-Coupled Amplifier Section, and several new circuits for high-fidelity audio amplifiers. Features lie-flat binding. Price 60 cents.*
- **RADIOTRON DESIGNER'S HANDBOOK—4th Edition** (8 3/4" x 5 1/2")—1500 pages. New, enlarged, up-to-date 4th Edition is comprehensive reference thoroughly covering the design of radio and audio circuits and equipment. Written for the design engineer, student, and experimenter. Contains 1000 illustrations, 2500 references, and cross-referenced index of 7000 entries. Edited by F. Langford-Smith of Amalgamated Wireless Valve Company Pty Ltd. in Australia. Price \$7.00.*
- **RCA TRANSMITTING TUBES—TT-4** (8 3/8" x 5 3/8")—256 pages. Written for the engineer, service technician, radio amateur, student, and experimenter. Contains basic information on generic tube types, on tube parts and materials, on tube installation and application, and on interpretation of tube data. Includes maximum ratings, typical operating values, and characteristics curves for power tubes having plate-input ratings up to 4 kilowatts, and maximum ratings and operating values for associated rectifier tubes. Contains sections on transmitter-design considerations and on rectifier circuits and filters. Features classification charts for quick, easy selection of tubes, and circuit diagrams for transmitting and industrial applications. Features lie-flat binding. Price \$1.00.*
- **RCA POWER AND GAS TUBES—PG-101C** (10 7/8" x 8 3/8")—24 pages. Completely revised and brought up to date. Technical information on 174 RCA vacuum power tubes, rectifier tubes, thyratrons, ignitrons, magnetrons, and vacuum-gauge tubes. Includes terminal connections. Price 20 cents.*
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- **TECHNICAL BULLETINS**—Complete authorized information on RCA transmitting tubes and other tubes for communications and industry. Be sure to mention tube-type bulletin desired. Single copy on any type free on request.



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- **TV SERVICING—TVS-1030** (10 7/8" x 8 3/8")—48 pages. This booklet contains a compilation of articles on TV trouble shooting, TV tuner alignment, and TV circuit analysis by RCA's expert in the field of TV servicing and test equipment—John R. Meagher. Price 35 cents.*
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Copies of the publications listed above may be obtained from your RCA Tube Distributor, or direct from Commercial Engineering, Tube Division, Radio Corporation of America, Harrison, New Jersey.