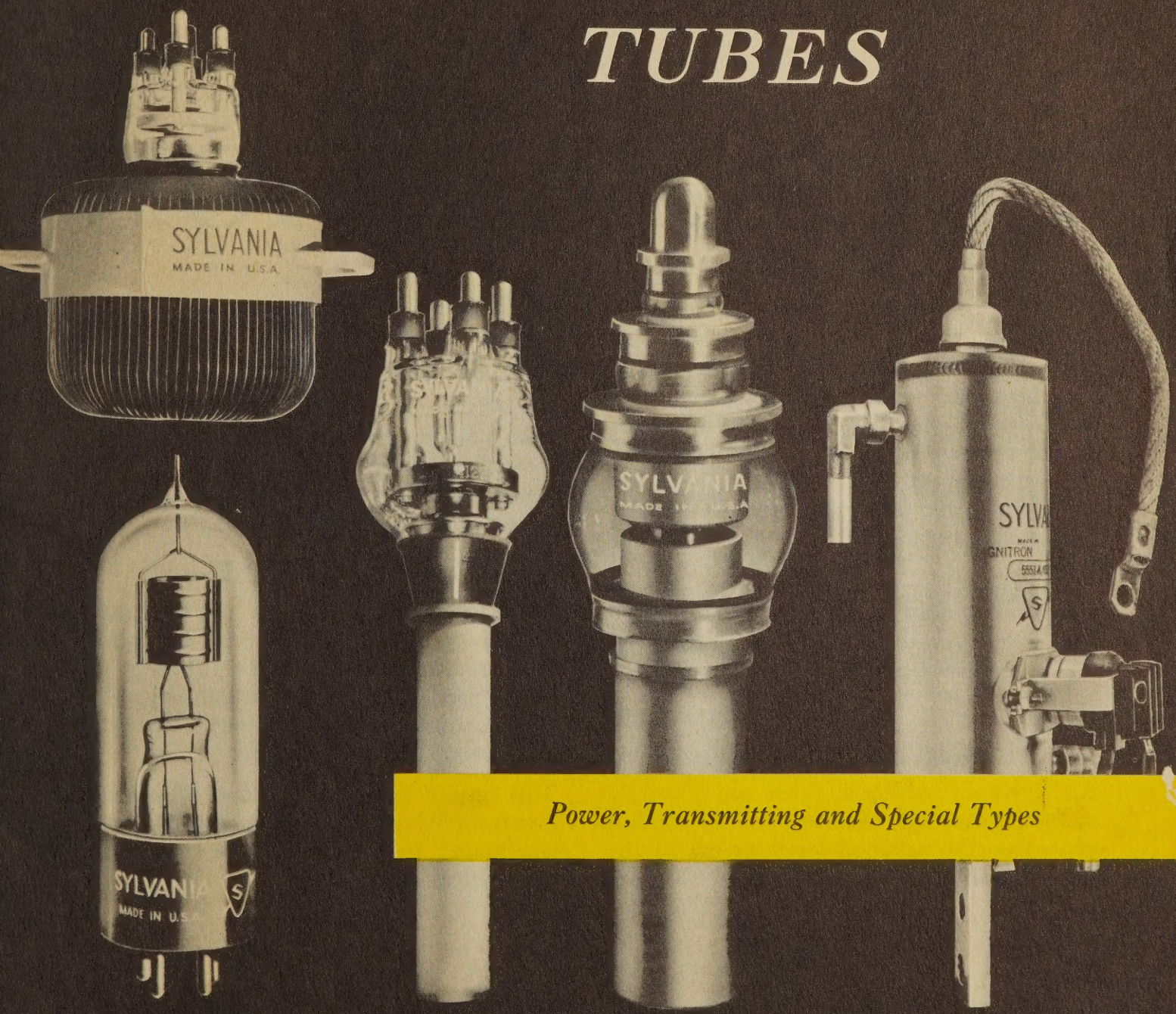
SYLVANIA

INDUSTRIAL

TUBES



Power, Transmitting and Special Types

INTRODUCTION

Sylvania industrial tubes are designed and produced with careful consideration to the requirements of industrial users in many different fields. The material included in this brochure will provide information regarding the breadth and scope of the Sylvania Industrial Products line.

Engineering data is presented in a form that will enable you to quickly refer to the average characteristics of each tube type.

SPECIFICATION-TESTED

All Sylvania industrial tubes are carefully tested for the many electrical and mechanical characteristics required for their use in the appropriate equipment.

FULLY WARRANTED

All Sylvania industrial tubes are fully warranted for your protection against any defect in workmanship or material. Warranties by classification are fully covered in Sylvania Terms and Conditions of Sale.

READILY AVAILABLE

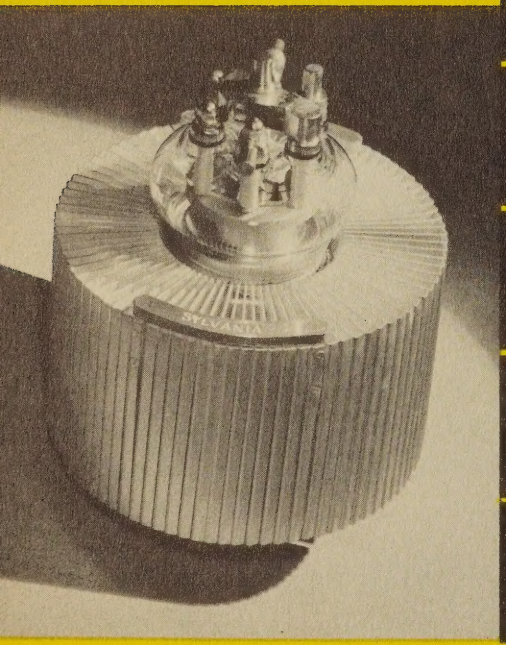
Sylvania clearly recognizes the importance of prompt delivery and service to users of industrial electronic products. In recognition of this need, Sylvania has established a chain of warehouses to serve the local distributors in all sections of the country.

This results in the steady flow of merchandise from Sylvania manufacturing plants and warehouses to industrial users by Sylvania distributors at all times.

CONTENTS

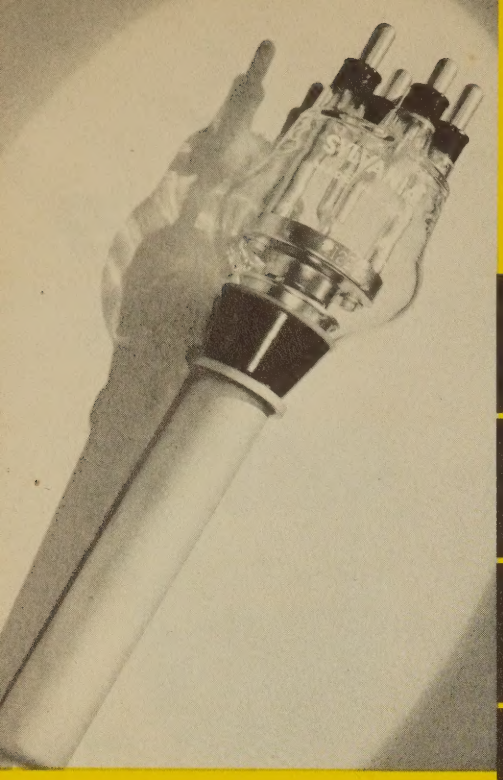
VACUUM POWER TUBES

2C39A	Forced-air-cooled triode for use as an UHF oscillator, frequency multiplier, or r. f. amplifier. Suited to cavity-type circuits. Features include low interelectrode capacitance, high (closely-controlled) transconductance, and high plate dissipation. Cathode is indirectly-heated, oxide-coated disc.
2C39WA	Ruggedized high-mu triode of planar-electrode type designed specifically for use as an oscillator, frequency multiplier, or power amplifier in radio transmitting service up to 2500 Mc. Replaces directly type 2C39A. Suited to cavity-type circuits. Features include low interelectrode capacitance, high (closely controlled) transconductance and high plate dissipation. Forced-air-cooled triode for use as an UHF oscillator, frequency multiplier, or r. f. amplifier.
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.
2C41	Forced-air-cooled triode for use as an UHF plate-pulsed oscillator, frequency multiplier, or power amplifier. Suited to cavity-type and parallel-line circuits. Features include low interelectrode capacitances, high (closely controlled) transconductance and high plate dissipation. Cathode is indirectly-heated, oxide coated discs.
2C43	Lighthouse Triode. Similar to Type 2C40 except for higher dissipation rating. For use as a cw oscillator at frequencies up to 1500 Mc.
207	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication or industrial service. Grid and plate incorporate sturdy, kovar-to-glass seals. Pure-tungsten filament.
212E	Convection-cooled triode for use as a modulator, amplifier, or oscillator in broadcast or communication service. Thoriated-tungsten filament.
232B	Water-cooled triode for use as an amplifier or oscillator in broadcast or communication service. Pure-tungsten filament.
241B	Convection-cooled triode for use as a modulator, amplifier, or oscillator in broadcast or communication service. Thoriated-tungsten filament.
279A	Convection-cooled triode for use as a modulator, amplifier, or oscillator in broadcast or communication service. Thoriated-tungsten filament.
298A	Water-cooled, high-power triode for use as a modulator, amplifier, or oscillator in broadcast or communication service. Incorporates integral-anode water jacket. Pure tungsten filament.
298B	Water-cooled, high-power triode for use as an amplifier or oscillator in industrial service. Incorporates integral-anode water jacket. Pure-tungsten filament.



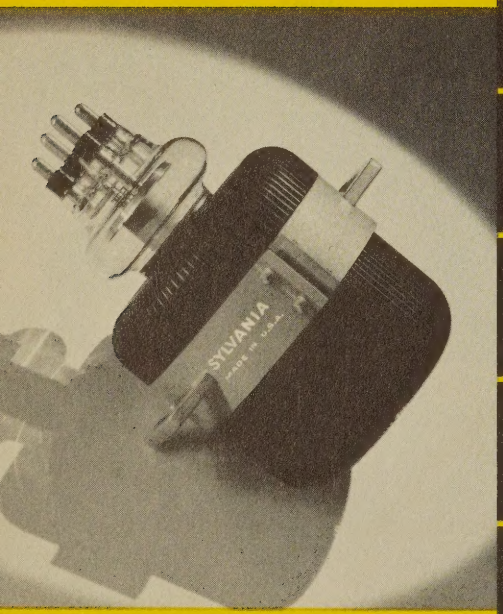
* *DC Cathode Current.*

GENERAL CHARACTERISTICS					MAXIMUM RATINGS							
Filament		Mu	Gm	Class	Plate		Grid		Screen	Plate		Freq. @
Voltage Volts	Current Amps		μMhos	of Service	Voltage Vdc	Current Adc	Voltage Vdc	Current Adc	Voltage Vdc	Input Watts	Dissip. Watts	Ratings mc/sec
6.3	1.0	100	22000	CWO	1000	0.125	−150	——	——	125	100	2500
				FM	1000	0.125	−150	0.050	——	125	100	2500
				C-P	600	0.100	−150	0.050	——	60	100	2500
5.8 ±5%	1.0	100	22000	CWO	1000	0.125*	−150	——	——	125	100	2500
				FM	1000	0.125*	−150	0.050	——	125	100	2500
				C-P	600	0.100*	−150	0.050	——	60	100	2500
6.3	0.75	36	4850	C-T	500	0.025	——	——	——	4	6.5	——
6.3 +5% −10%	1.0	100	25000	CA	3500	.010	−100	.006+	——	35	35	3000
6.3	0.9	48	8000	C-T	500	0.040	——	——	——	16.7	12	——
22.0	51.0	20	——	B-A	15000	2.0	——	——	——	20000	7500	——
				C-P	10000	1.0	−3000	0.2	——	10000	6600	1.6
				C-T	15000	2.0	−3000	0.2	——	30000	10000	1.6
14.0	6.0	16	8500	C-T	3000	.350	——	.075	——	——	275	1.5
20.0	60.0	40	6500	C-T	20000	3.0	——	——	——	——	25000	3
14.0	6.0	16	8500	C-T	3000	.350	——	.075	——	——	275	7.5
10.0	21.0	10	5000	C-T	3000	.800	——	.100	——	——	1200	20
27	225	32	22000	C-T	20000	11	——	——	——	——	100000	4
27	225	57.5	20000	C-T	20000	11	——	——	——	——	100000	4



VACUUM POWER TUBES

342A	Water-cooled triode for use as an amplifier or oscillator in broadcast or communication service. Pure-tungsten filament.
342AA	Forced-air-cooled triode for use as a modulator, amplifier, or oscillator in broadcast or communication service.
354	Water and forced-air-cooled coaxial-terminal triode for high-power industrial heating service to 20mc/sec. Incorporates high-conductivity kovar-to-glass seals, sturdy electrodes, integral anode water jacket, quick-change water coupling, and heavy-wall copper anode. Multi-strand self-supporting, thoriated-tungsten filament.
356	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication and industrial service. Replaces type 5771 tube directly and Type 880 tube with reduction in filament power. Includes sturdy kovar-to-glass seals. Thoriated-tungsten stress-free filament.
357B	Convection- or forced-air-cooled triode for use as a modulator, amplifier, or oscillator in AM and FM broadcast or communication service. Thoriated-tungsten filament.
379A	Convection-cooled triode for use as a modulator, amplifier, or oscillator in broadcast or communication service. Thoriated-tungsten filament.
381	Forced-air-cooled triode for use as an UHF plate-pulsed oscillator, frequency multiplier, or power amplifier. Suited to cavity-type and parallel-line circuits. Features include low interelectrode capacitances, high (closely-controlled) transconductance, and high plate dissipation. Cathode is indirectly-heated, oxide-coated disc.
801A	Medium-mu type with thoriated-tungsten filament. Small 4-pin, micanol bayonet base.
811A	Improved and superseding version of the popular 811. Utilized 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.
812A	Improved and superseding version of the popular 812. Has same structural features of type 811A with increased ratings for plate current and plate input.
880	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Incorporates sturdy kovar-to-glass seals and ruggedized electrode structures. Pure-tungsten, stress-free filament.
891	● Water-cooled triode for use as a modulator in broadcast or communication service. Incorporates kovar-to-glass seals. Pure-tungsten filament.



● *Two filament strands in series with large post at neutral junction; operate in series at 22 volts or two phase with 11 volts per strand.*

GENERAL CHARACTERISTICS — MAXIMUM RATINGS

Filament Voltage Volts	Filament Current Amps	Mu	Gm µMhos	Class of Service	Plate Voltage Vdc	Plate Current Adc	Grid Voltage Vdc	Grid Current Adc	Screen Voltage Vdc	Plate Input Watts	Plate Dissip. Watts	Freq. @ Ratings mc/sec
20.0	67	40	6820	C-T	20000	2.5	——	——	——	——	25000	4
20	67	40	6820	C-T	20000	2.5	——	——	——	——	5000	4
12.0	220	25	——	C-T	15000	12	−3200	2.0	——	150000	75000	20
7.5	170	20	——	B-A	12500	5	——	——	——	45000	22500	25
				C-P	10000	4	−2000	0.8	——	40000	15000	——
				C-T	12500	6	−2000	0.8	——	60000	22500	25
				C-T	15000	6	−2000	0.8	——	67500	22500	2.0
10.0	10	30	——	C-T	4000	0.5	−500	.100	——	1800	400	100
10.0	21.0	10	5000	C-T	3000	.800	——	.100	——	——	1200	20
6.0	1.0	100	20000	F-M	3500	0.0075†	−200	0.0045†	——	25†	25†	3000
				C-A	3500	0.01†	−150	0.006†	——	35†	35†	3000
7.5	1.25	8	——	B	600	0.070	——	——	——	42	20	——
				C-P	500	——	——	——	——	——	13.5	——
				C-T	600	——	——	——	——	——	20	——
6.3	4.0	160	——	B	1500	0.175	——	——	——	260	65	——
				C-P	1250	——	——	——	——	——	45	——
				C-T	1500	——	——	——	——	——	65	——
6.3	4.0	29	——	B	1500	0.175	——	——	——	175	65	——
				C-P	1250	——	——	——	——	——	45	
				C-T	1500	——	——	——	——	——	65	
12.6	315	20	——	B-A	10500	5.0	——	——	——	40000	15000	——
				C-P	10500	3.6	−1200	0.80	——	36000	12000	25
				C-T	10500	6.0	−1200	0.80	——	60000	20000	25
22.0	60	8.5	——	A-A	12000	——	——	——	——	7500	7500	——
				B-A	15000	2.0	——	——	——	20000	5000	——
				C-P	8000	1.0	−3000	0.15	——	8000	4000	1.6
				C-T	12000	2.0	−3000	0.15	——	18000	6000	1.6

VACUUM POWER TUBES

891R	●	Forced-air-cooled triode for use as a modulator in broadcast or communication service. Incorporates kovar-to-glass seals. Pure-tungsten filament.
892	●	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Incorporates kovar-to-glass seals. Pure-tungsten filament.
892R	● ■	Forced-air-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Incorporates sturdy kovar-to-glass seals. Pure-tungsten filament.
893A		Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Pure-tungsten filament designed for operation from single-, three-, or six-phase power supply.
893AR	♦	Forced-air-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Pure-tungsten filament designed for operation from single-, three-, or six-phase power supply.
895	◇	Triode
895R	■ ★	Triode
5530		Forced-air-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Especially suited to high frequency AM or FM operation. Incorporates sturdy kovar-to-glass seals. Thoriated-tungsten, stress-free filament.
5530H		Forced-air cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication or industrial service. Especially suited to dielectric heating service. Incorporates sturdy kovar-to-glass seals. Thoriated-tungsten filament.
5531		Forced-air-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Especially suited to high frequency service up to 30 megacycles. Incorporates sturdy kovar-to-glass seals. Thoriated-tungsten, stress-free filament.
5541		Forced-air-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Especially suited to high frequency AM or FM operation. Incorporates sturdy kovar-to-glass seals. Thoriated-tungsten, stress-free filament.
5604	■	Forced-air-cooled triode for use as a modulator-amplifier, or oscillator in broadcast, communication, or industrial service. Designed especially for industrial heating applications. Incorporates sturdy kovar-to-glass seals, ruggedized electrode structures and heavy-wall anode. Pure-tungsten filament.

■ *Indicates forced air-cooled radiator.*

● *Two filament strands in series with large post at neutral junction; operate in series at 22 volts or two phase with 11 volts per strand.*

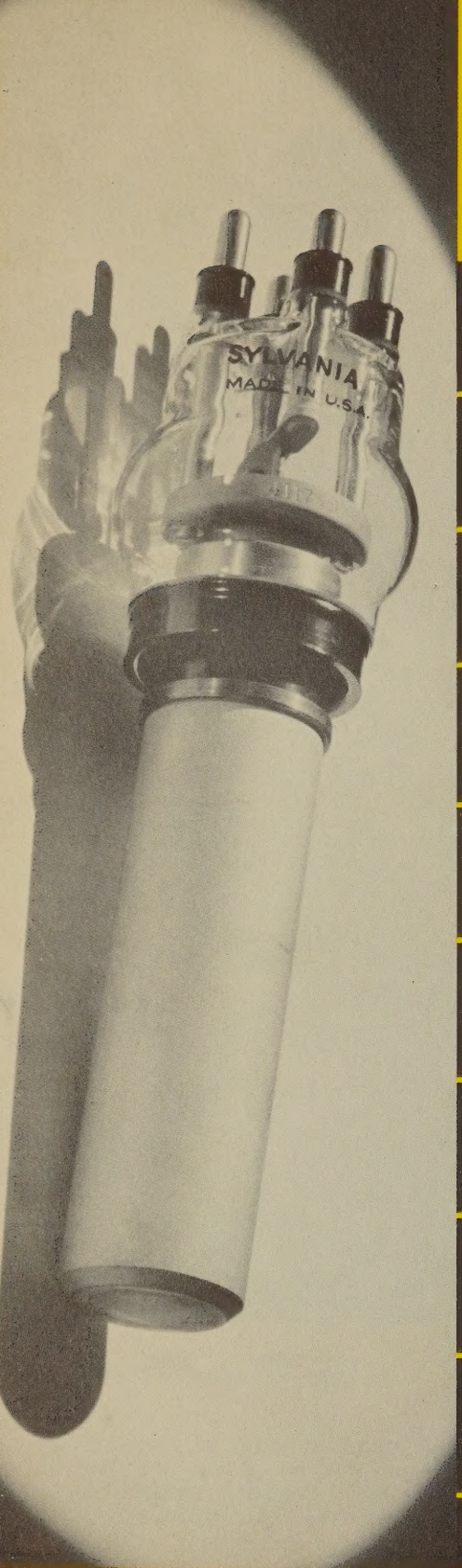
♦ *Six filament strands connected from each post to floating neutral. See individual data sheets for connections. Values shown are per strand.*

◇ *Three filament terminals Y-connected in 3 phase.*

★ *Three filament terminals Y-connected in 3-phase with neutral center terminal.*

GENERAL CHARACTERISTICS					MAXIMUM RATINGS							
Filament		Mu	Gm	Class	Plate		Grid		Screen	Plate		Freq. @
Voltage Volts	Current Amps		μMhos	of Service	Voltage Vdc	Current Adc	Voltage Vdc	Current Adc	Voltage Vdc	Input Watts	Dissip. Watts	Ratings mc/sec
22.0	60	8.5	——	A-A	10000	——	——	——	——	——	3500	——
				B-A	10000	2.0	——	——	——	10500	3500	——
				C-P	8500	1.0	−3000	0.15	——	8000	2500	1.6
				C-T	10000	2.0	−3000	0.15	——	15000	4000	1.6
22.0	60	50	——	B-A	15000	2.0	——	——	——	20000	7500	——
				C-P	10000	1.0	−3000	0.30	——	10000	6600	1.6
				C-T	15000	2.0	−3000	0.40	——	30000	10000	1.6
22.0	60	50	——	B-A	12500	2.0	——	——	——	12000	4000	——
				C-P	10000	1.0	−3000	0.30	——	10000	2500	1.6
				C-T	12500	2.0	−3000	0.40	——	18000	4000	1.6
20.0	183	34.5	——	B-A	20000	4.0	——	——	——	60000	20000	——
				C-P	12000	2.0	−3000	0.40	——	24000	12000	5
				C-T	20000	4.0	−3000	0.40	——	70000	20000	5
20.0	183	34.5	——	B-A	20000	4.0	——	——	——	60000	20000	——
				C-P	12000	2.0	−3000	0.40	——	24000	12000	5
				C-T	20000	4.0	−3000	0.40	——	70000	20000	5
19	138	37	——	——	17000	9	——	——	——	140000	40000	——
19	138	37	——	——	17000	9	——	——	——	110000	20000	——
5.0	55	26	11000	C-T	5000	1.75	−1000	0.20	——	8750	3000	110
5.0	55	26	11000	C-T	8500	1.75	−1000	0.40	——	10000	4000	30
6.3	92	24	22000	C-T	10500	3.75	−1500	0.6	——	30000	10000	30
7.5	57	26	21000	C-T	8500	2.75	−1500	0.30	——	23000	10000	110
11.0	176	19.5	——	C-T	12500	3.0	−2000	0.45	——	32500	10000	25

VACUUM POWER TUBES

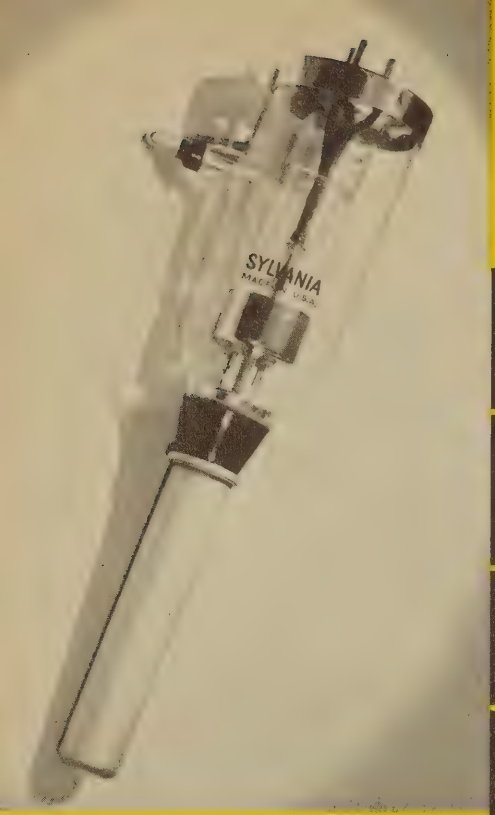


5606	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Replaces Type 892 tube where center-tapped filament is not required. Designed especially for industrial applications. Incorporates sturdy kovar-to-glass seals, ruggedized electrode structures. Pure-tungsten, stress-free filament.
5619	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communications, or industrial service. Designed especially for industrial heating applications. Incorporates sturdy kovar-to-glass seals, ruggedized electrode structures, and heavy-wall anode. Pure-tungsten filament.
5658	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Replaces Type 880 tube directly. Designed especially for industrial heating applications. Incorporates sturdy kovar-to-glass seals and ruggedized electrode structures. Pure-tungsten filament.
5666	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Uses automatic-seal water jacket and replaces Type 889A electrically. Designed especially for industrial heating applications. Incorporates sturdy kovar-to-glass seals, ruggedized electrode structures and heavy-wall anode. Pure-tungsten, stress-free filament.
5667	Forced-air-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Replaces Type 889RA directly. Designed especially for industrial heating applications. Incorporates sturdy kovar-to-glass seals, ruggedized electrode structures, and heavy-wall anode. Pure-tungsten, stress-free filament.
5668	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Uses automatic-seal water jacket and replaces Type 892 tube electrically. Designed especially for industrial heating applications. Incorporates sturdy kovar-to-glass seals, ruggedized electrode structures and heavy-wall anode. Pure-tungsten, stress-free filament.
5669	Forced-air-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication or industrial service. Replaces Type 892R tube directly. Designed especially for industrial heating applications. Incorporates sturdy kovar-to-glass seals, ruggedized electrode structures, and heavy-wall anode. Pure-tungsten, stress-free filament.
5681	Water and forced-air-cooled, all-ring-seal triode for high-power AM, FM and TV broadcast, particle-accelerator, and industrial-heating service. Incorporates high-conductivity kovar-to-glass seals, sturdy electrodes, integral anode water jacket, quick-change water coupling, and heavy-wall copper anode. Multi-strand, self-supporting, thoriated-tungsten filament.
5682	Water and forced-air-cooled, all-ring-seal triode for high-power AM and low-band TV broadcasting, particle-accelerator, and industrial-heating service. Incorporates high-conductivity kovar-to-glass seals, sturdy electrodes, integral anode water jacket, quick-change water coupling, and heavy-wall copper anode. Multi-strand, self-supporting, thoriated-tungsten filament.
5736 ■ ★	Forced-air-cooled, triode for use as a modulator, amplifier or oscillator in broadcast, communication, or industrial service. Thoriated-tungsten filament.
5764	Rocket Tube (Pulse Modulated Oscillator) The Sylvania type 5764 is a medium mu uhf triode employing planar construction. It is designed for service as a CW or pulse modulated oscillator at frequencies up to 3300 mc with medium power output. Frequency ratios of about 4 to 1 (250 mc to 1000 mc) for continuous tuning can be obtained up to 1000 mc with no dead spots throughout the range, ratios of about 3 to 1 can likewise be obtained up to 3300 mc.
5765	Rocket Tube (Broad Band CW Oscillator) The Sylvania type 5765 was designed for use as a cw oscillator at frequencies up to 2900 mc. The 5765 has a built-in internal feedback circuit between cathode and anode and fits into a concentric circuit. A small amount of adjustable, external feedback is generally necessary in order to obtain optimum power output at any given frequency. A feedback probe between the output and input lines may be used.

■ *Indicates forced air-cooled radiator.*

★ *Three filament terminals Y-connected in 3-phase with neutral center terminal.*

GENERAL CHARACTERISTICS					MAXIMUM RATINGS							
Filament Voltage Volts	Filament Current Amps	Mu	Gm μMhos	Class of Service	Plate Voltage Vdc	Plate Current Adc	Grid Voltage Vdc	Grid Current Adc	Screen Voltage Vdc	Plate Input Watts	Plate Dissip. Watts	Freq. @ Ratings mc/sec
22.0	60	50	——	C-T	14000	2.0	−1600	0.40	——	25000	10000	1.6
11.0	176	19.5	——	C-T	12500	3.0	−2000	0.45	——	32500	20000	25
12.0	310	20	——	C-T	12500	5.0	−1600	0.80	——	60000	20000	15
11.0	120	21	——	C-T	10000	2.0	−1500	0.35	——	20000	12500	22.5
11.0	120	21	——	C-T	10000	2.0	−1500	0.35	——	20000	7500	22.5
22.0	60	50	——	C-T	14000	2.0	−1600	0.40	——	28000	20000	5
22.0	60	50	——	C-T	14000	2.0	−1600	0.40	——	28000	10000	5
12.0	220	25	——	C-T C-T	15000 9000	12 12	−3200 −3200	2.0 2.0	—— ——	150000 90000	75000 75000	30 110
16.5	325	30	——	C-T C-T	16000 9000	20 20	−3200 −3200	4.0 4.0	—— ——	300000 170000	120000 100000	30 88
6	60	22	——	C-T	5000	1.4	−1000	0.5	——	5000	2500	60
6.3	425	——	——	CW-1000MC	150	25	——	——	——	——	5	——
6.3	400	——	——	CW	180	25	——	——	——	——	5.0	——



VACUUM POWER TUBES

5767	Rocket Tube (CW Oscillator) The planar triode 5767 was designed for use as a cw oscillator at frequencies up to 3300 mc. It is identical with Sylvania type 2C37 except that both discs are folded, making it particularly adapted to applications in lumped-constant or butterfly circuits.
5768	Rocket Tube (CW Oscillator) The Sylvania type 5768 is designed for service as a grounded grid amplifier at frequencies up to 3000 mc and may be used with a tuned or untuned input and tuned coaxial line output. Frequency ratios of about 4 to 1 (250-1000mc) for continuous tuning can be obtained up to 1000 mc with no dead spots throughout the range. Ratios of about 3 to 1 can likewise be obtained up to 3300 mc.
5891 ■ ★	Twin Triode high vacuum power tube used as an amplifier in broadcast, communication or industrial service.
5936	Triode high vacuum power tube used as an amplifier in broadcast, communication or industrial service.
6256	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Designed especially for industrial-heating applications. Incorporates coaxial-type terminals, sturdy kovar-to-glass seals, ruggedized electrode structures, and heavy-wall anode. Thoriated-tungsten, stress-free filament.
6257	Water-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Designed especially for industrial-heating applications. Incorporates coaxial-type terminals, sturdy kovar-to-glass seals, ruggedized electrode structures, heavy-wall anode and integral anode water jacket. Thoriated-tungsten, stress-free filament.
6258	Forced-air-cooled triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Especially suited to high frequency FM broadcasting and RF heating. Incorporates coaxial-type terminals, sturdy kovar-to-glass seals, ruggedized electrode structures, heavy-wall anode and high-efficiency radiator. Thoriated-tungsten, stress-free filament.
6420	Water-cooled coaxial-terminal triode for industrial-heating service and AM broadcasting. Incorporates rugged coaxial mounting structures, providing high-dissipation, low-inductance r-f electrode terminals. Heavy-wall anode. Thoriated-tungsten stress-free filament.
6421	Forced-air-cooled coaxial-terminal triode for industrial-heating service and AM broadcasting. Incorporates lightweight aluminum disc-finned anode cooler; rugged coaxial mounting structures provide high-dissipation, low-inductance r-f electrode terminals. Heavy-wall anode. Thoriated-tungsten stress-free filament.
6421-F	Forced-air-cooled coaxial-terminal triode for industrial-heating service and AM broadcasting. Incorporates rugged coaxial mounting structures, providing high-dissipation, low-inductance r-f electrode terminals. Heavy-wall anode with conventional copper radiator permitting use in type 5667 sockets. Thoriated-tungsten stress-free filament.
6422	Water-cooled coaxial-terminal triode for industrial-heating service and AM broadcasting. Incorporates rugged coaxial mounting structures, providing high-dissipation, low-inductance r-f electrode terminals. Heavy-wall anode. Thoriated-tungsten stress-free filament.

■ *Indicates forced air-cooled radiator.*

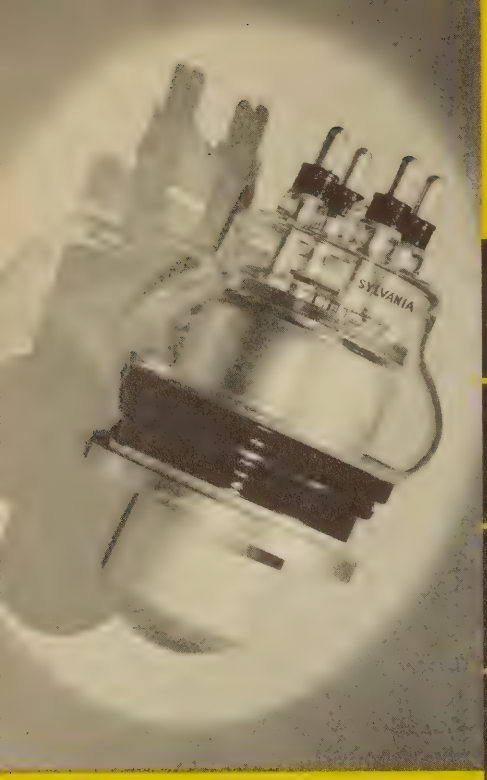
★ *Three filament terminals Y-connected in 3-phase with neutral center terminal.*

GENERAL CHARACTERISTICS

MAXIMUM RATINGS

Filament Voltage Volts	Filament Current Amps	Mu	Gm μMhos	Class of Service	Plate Voltage Vdc	Plate Current Adc	Grid Voltage Vdc	Grid Current Adc	Screen Voltage Vdc	Plate Input Watts	Plate Dissip. Watts	Freq. @ Ratings mc/sec
6.3	0.4	——	——	CW	150	25	——	——	——	——	6	——
6.3	400	——	——	——	1000	900	——	——	——	——	5.0	——
11.0	95	——	——	Class C	15000	8000	——	——	——	——	25000	——
20.0	143	——	——	Class C	18000	10000	——	——	——	——	70000	——
12.6	27	21	——	C-T	5500	1.5	−1500	0.22	——	7000	5000	110
12.6	27	21	——	C-T	5500	1.5	−1500	0.22	——	7000	5000	110
12.6	27	21	——	C-T	5500	1.5	−1500	0.22	——	7000	3000	110
7.0	85	20	——	C-T C-T	10000 8000	2.2 1.8	−1600 −1600	0.40 0.40	—— ——	20000 12000	12500 8300	30 30
7.0	85	20	——	C-T C-P	10000 8000	2.2 1.8	−1600 −1600	0.40 0.40	—— ——	20000 12000	10000 6700	30 30
7.0	85	20	——	C-T C-P	10000 8000	2.2 1.8	−1600 −1600	0.40 0.40	—— ——	20000 12000	7500 5000	30 ——
7.0	85	90	——	C-T C-P	12500 9000	2.5 1.8	−1400 −1400	0.50 0.50	—— ——	30000 16000	20000 13000	30 30

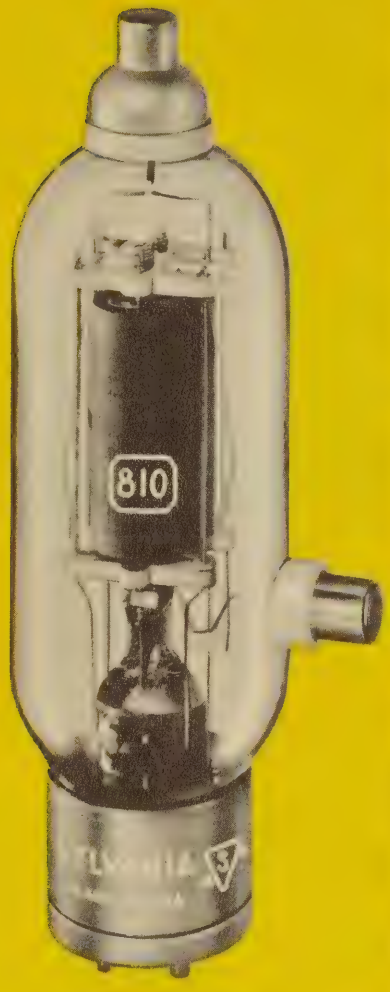
VACUUM POWER TUBES



6423	Forced-air-cooled coaxial-terminal triode for industrial heating service and AM broadcasting. Incorporates lightweight aluminum disc-finned anode cooler; rugged coaxial mounting structures, provide high-dissipation, low-inductance r-f electrode terminals. Heavy-wall anode. Thoriated-tungsten stress-free filament.
6423-F	Forced-air-cooled coaxial-terminal triode for industrial heating service and AM broadcasting. Incorporates rugged coaxial mounting structures, providing high dissipation, low-inductance r-f electrode terminals. Heavy-wall anode with conventional copper radiator permitting use in 892 R or 5669 sockets. Thoriated-tungsten stress-free filament.
6424	Water-cooled coaxial-terminal triode for industrial heating service and AM broadcasting. Incorporates rugged coaxial mounting structures, providing high-dissipation, low-inductance r-f electrode terminals. Heavy-wall anode. Thoriated-tungsten stress-free filament.
6425	Forced-air-cooled coaxial-terminal triode for industrial heating service and AM broadcasting. Incorporates lightweight aluminum disc-finned anode cooler; rugged coaxial mounting structures, provide high-dissipation, low-inductance r-f electrode terminals. Heavy wall anode. Thoriated-tungsten stress-free filament.
6425-F	Forced-air-cooled coaxial-terminal triode for industrial heating service and AM broadcasting. Incorporates rugged coaxial mounting structures, providing high dissipation, low-inductance r-f electrode terminals. Heavy-wall anode with conventional copper radiator permitting use in 5604 sockets. Thoriated-tungsten stress-free filament.
6426	Water-cooled coaxial-terminal triode for industrial heating service and AM broadcasting. Incorporates rugged coaxial mounting structures, providing high dissipation, low-inductance r-f electrode terminals. Heavy-wall anode. Thoriated-tungsten stress-free filament.
6427	Forced-air-cooled coaxial-terminal triode for industrial heating service and AM broadcasting. Incorporates lightweight aluminum disc-finned anode cooler; rugged coaxial mounting structures, provide high dissipation, low-inductance r-f electrode terminals. Heavy wall anode. Thoriated-tungsten stress-free filament.
6576	Water-cooled triode designed specifically for use as a modulator, or amplifier in broadcast and communication service, and as an r-f amplifier in single-sideband transmission. Mechanically identical to type 356, except that it employs heavier anode. Thoriated-tungsten stress-free filament.
6623	Forced-air-cooled, triode for use as a modulator, amplifier, or oscillator in broadcast, communication, or industrial service. Thoriated-tungsten filament. Filament and grid straps are soldered to terminals.
6696	Water-cooled coaxial-terminal triode for industrial heating service and AM broadcasting. Incorporates rugged coaxial mounting structures, providing high-dissipation, low-inductance r-f electrode terminals. Heavy-wall anode. Thoriated-tungsten stress-free filament.
6697	Forced-air-cooled coaxial-terminal triode for industrial heating service and AM broadcasting. Incorporates lightweight aluminum disc-finned anode cooler; rugged coaxial mounting structures, provide high dissipation, low-inductance r-f electrode terminals. Heavy-wall anode. Thoriated-tungsten stress-free filament.

GENERAL CHARACTERISTICS					MAXIMUM RATINGS							
Filament		Mu	Gm	Class	Plate		Grid		Screen	Plate		Freq. @
Voltage Volts	Current Amps		μMhos	of Service	Voltage Vdc	Current Adc	Voltage Vdc	Current Adc	Voltage Vdc	Input Watts	Dissip. Watts	Ratings mc/sec
7.0	85	90	——	C-T	12500	2.5	−1400	0.50	——	30000	12500	30
				C-P	9000	1.8	−1400	0.50	——	16000	8000	30
7.0	85	90	——	C-T	12500	2.5	−1400	0.50	——	30000	10000	30
				C-P	9000	1.8	−1400	0.50	——	16000	6500	30
7.0	120	20	——	C-T	12500	3.5	−2000	0.50	——	40000	20000	30
				C-P	9000	2.5	−2000	0.50	——	22000	13000	30
7.0	120	20	——	C-T	12500	3.5	−2000	0.50	——	40000	12500	30
				C-P	9000	2.5	−2000	0.50	——	22000	8000	30
7.0	120	20	——	C-T	12500	3.5	−2000	0.50	——	40000	10000	30
				C-P	9000	2.5	−2000	0.50	——	22000	6500	30
8.0	200	20	——	C-T	12500	8.0	−2000	1.0	——	80000	40000	30
				C-P	9000	6.0	−2000	1.0	——	53000	26000	30
8.0	200	20	——	C-T	12500	7.0	−2000	1.0	——	80000	20000	30
				C-P	9000	5.5	−2000	1.0	——	53000	13000	30
7.5	170	5.5	——	C-T	10000	6.0	−2400	0.20	——	60000	22500	25
				SSB*	12000	5.0	——	——	——	45000	22500	25
6	60	22	——	C-T	5000	1.4	−1000	0.5	——	5000	2500	30
13.0	205	20	——	C-T	16000	11	−3200	2.0	——	120000	60000	30
				C-P	10000	8.5	−3200	2.0	——	81000	40000	30
13.0	205	20	——	C-T	16000	11	−3200	2.0	——	120000	35000	30
				C-P	10000	8.5	−3200	2.0	——	81000	23000	30

BEAM POWER TUBES



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.
2E30	VHF Beam Power Tube.
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.
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.
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.
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.
811A	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.
812A	Improved and superseding version of the popular 812. Has same structural features of type 811A with increased ratings for plate current and plate input.
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.

GENERAL CHARACTERISTICS					MAXIMUM RATINGS							
Filament		Mu	Gm	Class	Plate		Grid		Screen	Plate		Freq. @
Voltage Volts	Current Amps		μMhos	of Service	Voltage Vdc	Current Adc	Voltage Vdc	Current Adc	Voltage Vdc	Input Watts	Dissip. Watts	Ratings mc/sec
6.3	0.65	7.5	3200	——	600	0.085	——	——	——	40	13.5	——
6.3	0.80	6.5	3500	——	500	0.075	——	——	——	30	10	——
6	0.65	——	——	——	250	0.060	——	——	——	15	10	——
6.3 12.6	2.25 1.125	——	——	——	——	——	——	——	——	——	——	——
2.6	2.6	5	12000	AB- C-T-F C-P	1250 1250 1000	250 —— ——	—— —— ——	—— —— ——	—— —— ——	—— —— ——	150 150 150	—— —— ——
6.3	.90	8	6000	——	600	0.100	——	——	——	60	25	——
10	4.50	36	——	——	2000 2250	0.250 0.275	—— ——	—— ——	—— ——	500 620	125 150	—— ——
6.3	4.00	160	——	——	1250 1500	0.175 0.175	—— ——	—— ——	—— ——	175 260	45 65	—— ——
6.3	4.00	29	——	——	1250 1500	0.175 0.175	—— ——	—— ——	—— ——	175 260	45 65	—— ——
10	5.00	8.5	3750	——	2000 2250	0.180 0.225	—— ——	—— ——	—— ——	360 500	100 125	—— ——

BEAM POWER TUBES

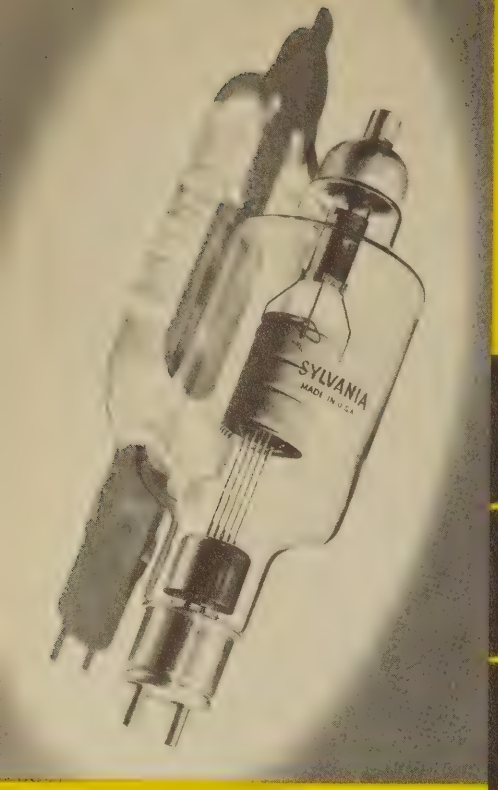
815	Twin-unit beam power tube with heater-cathode. For experimental low-power, FM, and television transmission. Octal 8-pin base. Two small caps.
829B	Twin-unit beam power tube of the heater-cathode type. Septar 7-pin base. Two wire top-terminals.
832A	Twin-unit beam power tube of the heater-cathode type, with features similar to the 829B.
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.
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.
5902	Beam Power Pentode.
5902A	Beam Power Pentode.
5932	Ruggedized Beam Pentode. (See Page 30.)
5933	Ruggedized Beam Pentode. (See Page 30.)
6005 6AQ5W 6095	Beam Power Pentode.
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.

GENERAL CHARACTERISTICS					MAXIMUM RATINGS							
Filament Voltage Volts	Filament Current Amps	Mu	Gm μMhos	Class of Service	Plate Voltage Vdc	Plate Current Adc	Grid Voltage Vdc	Grid Current Adc	Screen Voltage Vdc	Plate Input Watts	Plate Dissip. Watts	Freq. @ Ratings mc/sec
6.3	1.6	6.5	4000	—	400 500	0.150 0.150	— —	— —	— —	60 75	20 25	—
6.3	2.25	9	8500	—	750	0.240	—	—	—	120	40	—
6.3	0.8	7	3500	—	750	0.090	—	—	—	36	15	—
2.5	2.0	—	4000	AB_2 C-P C-T	600 500 600	0.090 — —	— — —	— — —	— — —	54 37.5 54	25 16.5 25	— — —
6	0.75	—	7000	—	300	0.050	—	—	—	15	12	—
6.3	0.45	—	4200	—	165	0.030	—	—	—	—	4	—
6.3	0.45	—	—	—	—	—	—	—	—	—	—	—
6.3	0.90	—	—	—	400	—	—	—	—	—	—	—
6.3	0.90	—	—	—	600	—	—	—	—	—	—	—
6.3	0.450	—	—	—	—	—	—	—	—	—	—	—
6.3	1.25	4.5	7000	—	600 750	0.140 0.150	— —	— —	— —	67.5 90	20 25	— —
26.5	0.3	4.5	7000	—	600 750	0.140 0.150	— —	— —	— —	67.5 90	20 25	— —

RECTIFIERS

2X2A	Heater-cathode type. Small 4-pin base. Small cap.
3B28	Half-wave xenon rectifier. Small 4-pin, bayonet base. Medium cap.
5R4GY	Full-wave coated-filament type. Octal 5-pin, micanol base.
5Y3WGT	Filamentary Double Diode.
5Y3WGTA	Filamentary Double Diode.
6X4W	Cathode Type Double Diode.
6X5WGT	Cathode Type Double Diode.
102A	Air-insulated, high-vacuum, half-wave rectifier tube. Used in smoke, dust, and other small-particle electrostatic precipitation. Sturdy, Catenary-type, pure-tungsten filament.
103	Oil-insulated, high-vacuum, half-wave rectifier tube. Used in industrial applications requiring high-voltage, low-current power. Pure-tungsten filament.
108	Oil-insulated, high-vacuum, half-wave rectifier tube. Used in smoke, dust, and other small particle precipitation applications. Sturdy, loop-type, pure-tungsten filament.
115	Air-insulated, high-vacuum, half-wave rectifier tube. Suitable for small particle electrostatic precipitation and other applications requiring high-voltage, low-current power. Sturdy, loop-type, pure tungsten filament.
120	Air-insulated, high-vacuum, half-wave rectifier tube. Used in smoke, dust, and other small-particle precipitation applications. Sturdy, loop-type, pure-tungsten filament. 120 designed to withstand 140 peak inverse kilovolts, 126 150 peak inverse kilovolts.
121	Oil-insulated, high-vacuum, half-wave rectifier tube. Used in industrial applications requiring high-voltage, low-current power. Sturdy, loop-type pure-tungsten filament.
141	Oil or air-insulated high-vacuum, half-wave rectifier tube. Used in smoke, dust and other small-particle precipitation applications. Extremely low internal voltage drop. Sturdy, catenary-type, thoriated-tungsten filament.

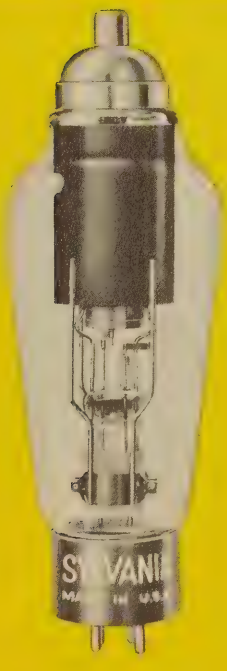
GENERAL CHARACTERISTICS		MAXIMUM RATINGS	
Filament Voltage Volts	Current Amps	Peak Inverse Anode Voltage Kilovolts	Peak Anode Current Milliamperes
2.5	1.75	12500	0.100
2.5	5.0	5000	2.0
5.0	2.0	2800	0.65
5.0	2.0	1400	0.40
5.0	2.0		
6.3	0.60		
6.3	0.60		
20	19.0	75	750
10	11.5	125	78
13	12.5	140	200
10	11.5	125	100
13	12.5	140 150	200
10	11.5	140 150	100
Air 5.5 Oil 5.5	6.5 6.5	80 125	750 750



RECTIFIERS

142	Oil or air-insulated high-vacuum, half-wave rectifier tube. Used in smoke, dust, and other small-particle precipitation applications. Extremely low internal voltage drop. Sturdy, catenary-type, thoriated-tungsten filament.
148	Oil or air-insulated high-vacuum, half-wave rectifier tube. Used in smoke, dust and other small-particle precipitation applications. Extremely low internal voltage drop. Sturdy, catenary-type thoriated-tungsten filament.
170	High-vacuum, half-wave rectifier tube. Useful in high-voltage cable testing, purifying of process and exhaust atmospheres, and other small-particle precipitation. Sturdy, loop-type, pure-tungsten filament. 170 designed for air-insulated operation. 180, oil insulated operation.
180	High-vacuum, half-wave rectifier tube. Useful in high-voltage cable testing, purifying of process and exhaust atmospheres, and other small-particle precipitation. Sturdy, loop-type, pure-tungsten filament. 170 designed for air-insulated operation. 180, oil insulated operation.
199	Air-insulated, high-vacuum, half-wave rectifier tube. Used in smoke, dust, and other small-particle electrostatic precipitation. Sturdy, catenary type, thoriated-tungsten filament.
222A	Water-cooled, half-wave rectifier for use in broadcast or communication equipment. Anode dissipitation rating, 25 kilowatts. Pure-tungsten filament.
322	UHF diode of planar electrode type for use as modulation clipper. Coaxial design makes it ideally suited to cavity-type circuits. Indirectly-heated, oxide-coated cathode.
481B	Vacuum Rectifier Tube.
579B	Thoriated-tungsten fil. Super-jumbo 4-pin base. Wire top terminal.
5575/100	Air-insulated, high-vacuum, half-wave rectifier tube. Widely used in purifying of process and exhaust atmospheres and many particle precipitation applications. Sturdy, catenary-type, pure-tungsten filament.
5576/200	Air-insulated, high-vacuum, half-wave rectifier tube. Widely used in electrostatic particle precipitation and many high-voltage, high-power applications. Sturdy, catenary-type, pure-tungsten filament.

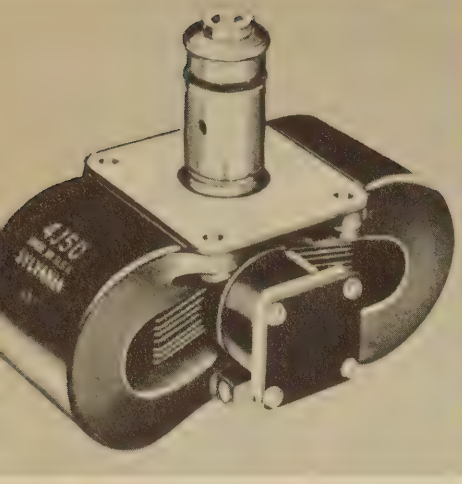
GENERAL CHARACTERISTICS		MAXIMUM RATINGS	
Filament Voltage Volts	Filament Current Amps	Peak Inverse Anode Voltage Kilovolts	Peak Anode Current Milliamperes
Air 3.8 Oil 3.8	6.6 6.6	50 100	300 300
Air 5.7 Oil 5.7	6.6 6.6	80 150	1000 1000
Air 13	12.5	200	200
Air 13	12.5	200	200
Air 12	23	110	10000
Air 21.5	41	25	5000
Air 6.3	.95	.800	600
2.5	5	25000	0.015
2.5	6	20000	0.27
20	24	150	1000
20	32	150	2500



THYRATRONS

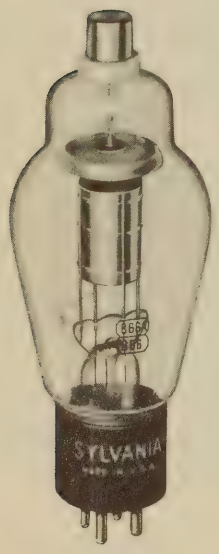
414	Thyratron.
610	Thyratron.
624	Thyratron.
627	Negative-control, filament type. Super-jumbo 4-pin base, medium cap.
628	Thyratron.
629	Neg.-control, heater-cathode type. Small 5-pin base, relaxation oscillator.
632B	Negative-control, heater-cathode type. Ignitor firing applications. Two-medium caps. Small 4-pin, bayonet base.
672A	Negative-control, heater-cathode type. Ignitor firing applications. Medium cap, Super-jumbo 4-pin, bayonet base.
676	Negative-control, heater-cathode type. Super-jumbo 4-pin base. Medium cap.
677	Negative control, heater-cathode type. Super-jumbo 4-pin base. Medium cap. Used in heavy condenser welding equipment.
678	Thyratron (Mercury Vapor Rectifier) used in motor safety control.
884	Negative-control, heater-cathode type. Relaxation oscillator. Small 5-pin base.
885	Negative-control, heater-cathode type. Small 5-pin base. Relaxation oscillator.
2050	Negative-control, heater-cathode type. Octal 8-pin base.
5557	Negative-control, filament type. Small 4-pin, bayonet base. Medium cap.
5559	Negative-control, heater-cathode type. Small 4-pin, bayonet base. Medium cap.
5560	Negative-control, heater-cathode type. Ignitor firing applications. Small 4-pin, bayonet base. Two medium caps.
5685	Negative-control, filament type. Super-jumbo 4-pin base. Medium cap.
5796	Thyratron, (Grid-Control) used in welding and as a relay and motor control tube.
6011	Thyratron.

GENERAL CHARACTERISTICS		MAXIMUM RATINGS		
Filament Voltage Volts	Filament Current Amps	Plate Volts Peak Inverse	Plate Amps Peak	Plate Amps Avg.
5	20	2000	100	12.5
2.5	6.5	500	0.4	0.1
5.0	10.0	2500	80.0	6.4
2.5	5.0	5000	2.5	0.64
5.0	12.3	2500	8.0	2.0
2.5	2.6	350	0.2	0.04
5.0	5.0	1500	30.0	2.5
5.0	5.0	2500	40.0	3.2
5.0	10.0	2500	40.0	6.4
5.0	10.0	10000	15.0	4.0
5.0	7.5	15000	6.0	1.6
6.3	0.6	350	0.3	0.075
2.5	1.5	350	0.3	0.075
6.3	0.6	1300	1.0	0.1
2.5	5.0	5000	2.0	0.5
5.0	4.5	1000	15.0	2.5
5.0	4.5	1000	15.0	2.5
2.5	21	1250	77.0	6.4
2.5	8.5	1500	20.0	1.6
2.5	9	1250	30.0	2.5



MAGNETRONS

2J42	The Sylvania Type 2J42 is a low power, pulsed, fixed frequency (9345–9405 Mc) magnetron. The unit is supplied with magnet in place.
5789	The Sylvania Type 5789 is a pulsed, fixed frequency magnetron. The output is designed for coupling direct to standard RC-96/U waveguide. The unit, supplied with magnet in place, weighs approximately 11 pounds. Performance is limited at low powers by excessive pushing and poor spectrum. High power performance is limited by arcing.
6799	Sylvania type 6799 is a high power, pulsed, fixed frequency (34512–35208 Mc) magnetron. The unit is supplied with magnet in place.
6874	Sylvania type 6874, selected bandwidth M561, is a high power, pulsed, tunable magnetron with frequency range between 8800—9400 Mc. The 6874 is similar to 4J50 with the tube supplied with magnet in place.



MERCURY VAPOR RECTIFIERS

575A	Convection-or-air-cooled, half-wave rectifier for use in broadcast or industrial equipment. Oxide-coated filament.
673	Convection-cooled half-wave rectifier for use in broadcast, communication, or industrial equipment. Oxide-coated filament.
857B	Convection- or air-cooled, half-wave rectifier for use in broadcast, communication, or industrial equipment. Oxide-coated filament.
866A	Convection-cooled, half-wave rectifier for use in broadcast, communication, or industrial equipment. Oxide-coated filament.
869B	Convection- or air-cooled, half-wave rectifier for use in broadcast, communication, or industial equipment. Oxide-coated filament.
872A	Convection-cooled, half-wave rectifier for use in broadcast, communication, or industrial equipment. Oxide-coated filament.
8008	Convection-cooled, half-wave rectifier for use in broadcast, communication, or industrial equipment. Oxide-coated filament.

IGNITRONS

5550/681	Compact, steel-jacketed type with removable clamp for air or water cooled operation.
55551A/ 652	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.
5552A/ 651	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.
5553B/ 655	Steel-jacketed type recommended for welder-control service, but also useful for rectifier service in low-power circuits. Supersedes and replaces types 5553 and 553A. Has bracket for mounting thermostat.
5555	Steel-jacketed type for rectifier service in the 125-, 250-, 600- and 900-volts dc power field.

MAXIMUM RATINGS

Heater Voltage	Peak Anode Current	Peak Anode Voltage
7.0 volts	5.5 amps	6.0 Kv
7.0 volts max. 5.6[1] volts min.	20 amps max. 6 amps min.	14.0 kV max.
7.0 volts	40 amps	20 kV
13.75 volts	30 amps	23.0 kV

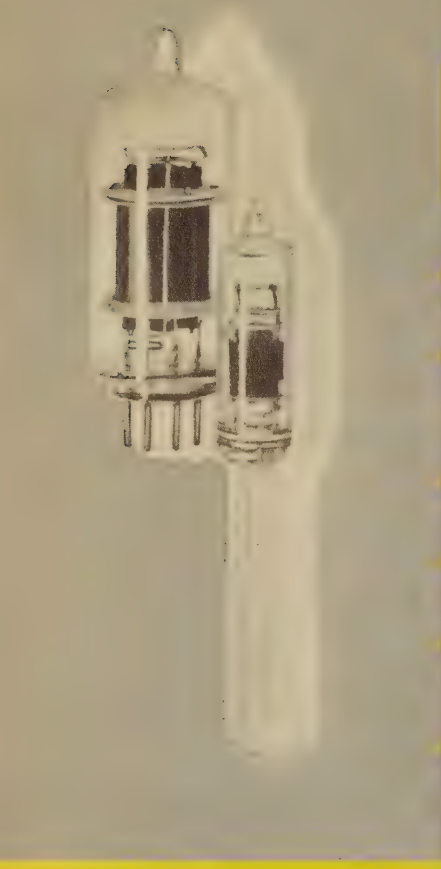
GENERAL CHARACTERISTICS / MAXIMUM RATINGS

Peak Inverse Anode Voltage Volts	Peak Anode Current Amps	Cond. Merc. Temp. Range C	Plate Voltage Vdc	Plate Current Adc
5.0	10	20-50	15000	6.0
5.0	10	20-50	15000	6.0
5.0	30	30-40	22000	20.0
2.5	5.0	25-60	10000	1.0
5.0	19	30-40	20000	10.0
5.0	7.5	20-60	22000	20.0
5.0	7.5	20-60	10000	5.0

GENERAL CHARACTERISTICS / MAXIMUM RATINGS

Size	Supply Volts	Kva Demand	Corresponding Average Anode Current, Amp.	Maximum Average Anode Current, Amp.	Corresponding Kva Demand	Type of Cooling	Warranty
(A)	250-600 rms	300	12.1	22.4	100	Water	H-12
(B)	250-600 rms	600	30.2	56	200	Water	H-12
(C)	250-600 rms	1200	75.6	140	400	Water	H-12
(D)	250-600 rms	2400	192	355	800	Water	H-12
——	2400	2400	135.0	1105	207	Water	——

RELIABLE TUBES



Type No.	Prototype	Differences in Rated Characteristics*	Functional Classification	Typical Application
6AU6WA	6AU6	None	Sharp Cutoff Pentode	RF, AF Amplifier
6J4WA	6J4	None	High Mu Triode	Grounded Gr VHF Amplif
6SN7WGTA	6SN7GT	Plate Dissipation: 6SN7GT = 3.5 Watts Per Plate 6SN7WGTA = 2.75 Watts Per Plate	Medium Mu Double Triode	Low Frequen Amplifier
12AT7WA	12AT7	None	High Mu Double Triode	VHF Mixer Osc. Amplifi
5654/6AK5W	6AK5	None	Sharp Cutoff Pentode	RF Amplifier
5654/-6AK5W/6096	6AK5	None	Sharp Cutoff Pentode	RF Amplifier
5670	2C51	Heater Current: 2C51 = 0.3 Amp. 5670 = 0.35 Amp.	Medium Mu Double Triode	High Frequen Amplifier
5670WA	5670	Electrode Insulation: 5670 = 500 Meg. 5670WA = 100 Meg.	Medium Mu Double Triode	High Frequen Amplifier
5726/6AL5W	6AL5	None	Double Diode	Detector
5726/-6ALSW/6097	6AL5	None	Double Diode	Detector
5749/6BA6W	6BA6	None	Semi-Remote Cutoff Pentode	RF Amplifier
5751	12AX7	Heater Current: 12AX7 = 0.150 Amp. Per Section 5751 = 0.175 Amp. per Section Mu: 12AX7 = 100; 5751 = 70	High Mu Double Triode	AF Amplifier
5751WA	5751	None	High Mu Double Triode	AF Amplifier
5814	12AU7	Heater Current: 12AU7 = 0.15 Amp. Per Section 5814 = 0.175 Amp. Per Section Cutoff: 12AU7 = −25 Volts Cutoff: 5814 = −30 Volts	Medium Mu Double Triode	Low Frequen Amplifier
5814A	5814	Electrode Insulation Test: 5814 = 100 Meg. 5814A = 500 Meg.	Medium Mu Double Triode	Low Frequen Amplifier

* While no differences may be indicated in rated characteristics, there may be differences in controls applied to these characteristics as determined by the applicable MIL specifications.

† For multi-section types values shown are for each section unless otherwise stated.

Eb—Plate Voltage in volts
Ec1—Grid No. 1 Voltage in volts
Ec2—Grid No. 2 Voltage in volts
Ec3—Grid No. 3 Voltage in volts
Gm, Gm1—Grid No. 1 Transconductance in micromhos
Gm3—Grid No. 3 Transconductance in micromhos
Ib—Plate Current in milliamperes
Ic1—Grid No. 1 Current in milliamperes
Ic2—Grid No. 2 in milliamperes
Po—Power Output in watts
Pp—Plate Dissipation in watts
Rg—Grid No. 1 Circuit Resistance in ohms
Rk—Cathode Resistance in ohms
Rl—Load Resistance in ohms
Rp—Plate Resistance in kilohms
Mu—Amplification Factor

Applicable MIL Specification	Heater Characteristics		Ratings† Absolute Maximum			Characteristics
	Ef	If	Eb Volts	Ec2 Volts	Pp Watts	
MIL-E-1/1	6.3	0.30	300	150	3.0	Eb = 250, Ec2 = 150, Rk = 68, Ib = 10.6, Ic2 = 4.3, Gm1 = 5200
MIL-E-1/619C (Navy)	6.3	0.40	165	...	2.5	Eb = 150, Rk = 100, Ib = 15, Gm = 12,000, Mu = 55, Rp = 4.5 K
MIL-E-1/663A (Navy)	6.3	0.600	330	...	2.75	Eb = 250, Ec1 = −8, Ib = 9.0, Gm = 2600, Mu = 20, Ec1 for Ib = 10 μa: −18 Volts
MIL-E-1/3A	6.3 12.6	0.30 0.15	300	...	2.5	Eb = 250, Rk = 200, Ib = 10, Gm = 5500, Mu = 60
MIL-E-1/4A	6.3	0.175	200	140	1.5	Eb = 180, Ec2 = 120, Rk = 200, Ib = 7.7, Ic2 = 2.4, Gm1 = 5100, Rp = 500 K
MIL-E-1/236	6.3	0.175	200	140	1.5	Characteristics same as 5654/6AK5W
MIL-E-1/5A	6.3	0.35	300	...	1.5	Eb = 150, Rk = 240, Ib = 8.2, Mu = 35, Gm = 5500
MIL-E-1/247	6.3	0.35	300	...	1.5	Characteristics Same as Type 5670
MIL-E-1/7B	6.3	0.30	Peak Inverse Voltage = 360 Volts, Peak Current Per Plate = 50 Ma, DC Output Current = 10 Ma			
MIL-E-1/235A	6.3	0.30	...	...	...	Characteristics Same as Type 5726/6AL5W
MIL-E-1/8	6.3	0.30	330	150	3.3	Eb = 250, Ec2 = 100, Ec3 = 0, Rk = 68, Ib = 11, Ic2 = 4.2, Gm1 = 4400, Rp = 1.0 Meg., Ec1 for Gm = 40 μmhos: −20 Volts
MIL-E-1/10A	6.3 12.6	0.35 0.175	330	...	0.8	Eb = 250, Ec1 = −3, Ib = 1.0, Mu = 70, Gm = 1200, Ec1 for Ib = 10 μa: −5 Volts
MIL-E-1/237	6.3 12.6	0.35 0.175	330	...	0.8	Characteristics Same as Type 5751
...	6.3 12.6	0.35 0.175	330	...	3.0	Eb = 250, Ec1 = −8.5, Ib = 10.5, Gm = 2200, Mu = 17, Ec1 for Ib = 10 μa: −30 Volts
MIL-E-1/12A	6.3 12.6	0.35 0.175	330	...	3.0	Characteristics Same as Type 5814

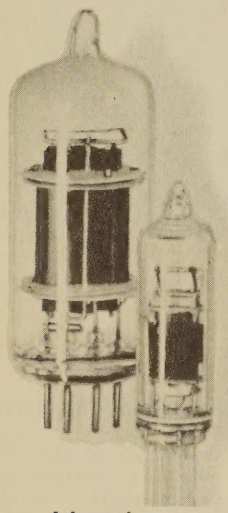
* While no differences may be indicated in rated characteristics, there may be differences in controls applied to these characteristics as determined by the applicable MIL specifications.

† For multi-section types values shown are for each section unless otherwise stated.

Eb—Plate Voltage in volts
Ec1—Grid No. 1 Voltage in volts
Ec2—Grid No. 2 Voltage in volts
Ec3—Grid No. 3 Voltage in volts
Gm, Gm1—Grid No. 1 Transconductance in micromhos
Gm3—Grid No. 3 Transconductance in micromhos
Ib—Plate Current in milliamperes
Ic1—Grid No. 1 Current in milliamperes
Ic2—Grid No. 2 in milliamperes
Po—Power Output in watts
Pp—Plate Dissipation in watts
Rg—Grid No. 1 Circuit Resistance in ohms
Rk—Cathode Resistance in ohms
Rl—Load Resistance in ohms
Rp—Plate Resistance in kilohms
Mu—Amplification Factor

RELIABLE TUBES

Type No.	Prototype	Differences in Rated Characteristics*	Functional Classification	Typical Application
5814WA	5814A	Cutoff: 5814A = −30 Volts 5814WA = −25 Volts	Medium Mu Double Triode	Low Frequency Amplifier
5933WA	807	Bulb Size 807—ST-16 5933WA— T-12	Beam Power Pentode	RF, AF Power Amplifier
6005/-6AQ5W/6095	6AQ5	Plate Dissipation: 6AQ5 = 12.0 Watts 6005/6AQ5/6095 = 11.0 Watts	Beam Power Pentode	Power Amplifier
6135	6C4	Heater Current: 6C4 = 0.15 Amp. 6135 = 0.175 Amp.	Medium Mu Triode	RF Oscillator Amplifier
6189/-12AU7WA	12AU7	None	Medium Mu Double Triode	Oscillator Low Freq. Amplifier



RUGGEDIZED TUBES

Type No.	Prototype	Differences in Rated Characteristics	Functional Classification	Typical Application
5Y3WGT	5Y3GT	None	Filamentary Double Diode	Full-Wave Power Rectifier
6SJ7WGT	6SJ7GT	None	Sharp Cutoff Pentode	Voltage Amplifier
6SL7WGT	6SL7GT	None	High Mu Double Triode	Voltage Amplifier
6SN7WGT	6SN7GT	None	Low Mu Double Triode	Voltage Amplifier, Low Freq. Oscillato
6XW4	6X4	None	Cathode Type Double Diode	Full-Wave Power Rectifier
6X5WGT	6X5GT	None	Cathode Type Double Diode	Full-Wave Power Rectifier
28D7W	28D7	None	Double Pentode	Power Amplifier
5931	5U4G	None	Filamentary Double Diode	Full-Wave Power Rectifier
5932	6L6GA	None	Beam Pentode	AF Power Amplifier
5933	807	Bulb Size, 807: ST-16 Bulb Size, 5933: T-12	Beam Pentode	RF, AF Power Amplifier

† For multi-section types values are for each section unless otherwise stated.

Eb—Plate Voltage in volts
Ec1—Grid No. 1 Voltage in volts
Ec2—Grid No. 2 Voltage in volts
Ec3—Grid No. 3 Voltage in volts
Gm, Gm1—Grid No. 1 Transconductance in micromhos
Gm3—Grid No. 3 Transconductance in micromhos
Ib—Plate Current in milliamperes
Ic1—Grid No. 1 Current in milliamperes
Ic2—Grid No. 2 in milliamperes
Po—Power Output in watts
Pp—Plate Dissipation in watts
Rg—Grid No. 1 Circuit Resistance in ohms
Rk—Cathode Resistance in ohms
Rl—Load Resistance in ohms
Rp—Plate Resistance in kilohms
Mu—Amplification Factor

NH—48.35M.6.57

Applicable MIL Specification	Heater Characteristics Ef	If	Ratings† Absolute Maximum Eb Volts	Ec2 Volts	Pp Watts	Characteristics
IIL-E-1/238A	6.3 12.6	0.35 0.175	330	. . .	3.0	Characteristics Same as Type 5814
IIL-E-1/852A (Navy)	6.3	0.900	600	300	25.0	Eb = 600,Ec2 = 300, Ec1 = −29, Ib = 36, Ic2 = 4.0 Max., Ib at Ec1 = −100 Volts: .5 Ma Max., Power Output at 15 Mc with Eb = 600, Ec2 = 200, Ib = 100, Ic1 = 5 to 7, Rl = 10,000 ohms . . . 33 Watts Min.
IIL-E-1/239	6.3	0.450	275	275	11.0	Eb = 250, Ec2 = 250, Ec1 = −12.5, Ib = 45, Ic2 = 4.5, Gm1 = 4100, Rp = 52 K, Rl = 5000, Po = 4.5 Watts
IIL-E-1/15	6.3	0.175	330	. . .	3.8	Eb = 250, Ec1 = −8.5, Ib = 10.5, Mu = 17, Gm = 2200, Ec1 for Ib = 10 μa: −25 Volts
IIL-E-1/246A	6.3 12.6	0.30 0.15	330	. . .	3.0	EB = 250, Ec1 = −8.5, Ib = 10.5, Gm = 2200, Mu = 17, Ec1 for Ib = 10 μa: —25 Volts

bration in G's 25 cps)	Shock	Mech. Resonance	Heater Characteristics Ef Volts	If Amperes	Ratings–Design Center Maximum Eb Volts	Ec2 Volts	Pp Watts	Characteristics
2.5	750	None Below 100 cps	5.0	2.0	Peak Inverse Voltage = 1400 Volts, Peak Current Per Plate = 400 Ma, DC Output Current = 125 Ma			
2.5	450	None Below 100 cps	6.3	0.30	300	125	2.5	Eb = 250, Ec3 = 0, Ec2 = 100, Ec1 = 3, Ib = 3.0, Ic2 = 0.8, Gm = 1650, Rp = >1.0 Meg., Ec1 for Ib = 10 μa- −8 Volts
2.5	450	None Below 100 cps	6.3	0.30	250	. . .	1.0	Eb = 250, Ec1 = −2, Rk = 870, Ib = 2.3, Gm = 1600, Mu = 70, Rp = 44K
2.5	450	None Below 100 cps	6.3	0.60	300	. . .	3.5 Each 5.0 Both	Eb = 250, Ec1 = −8, Ib = 9.0 Gm = 2600, Mu − 20, Rp = 2.6 K, Ec1 for Ib = 10 μa: −18 Volts, Ib at Ec1 = −12.5: 1.3 Ma
2.5	750	None Below 100 cps	6.3	0.60	Peak Inverse Voltage = 1250 Volts, Peak Plate Current Per Plate = 210 Ma, DC Output Current = 70 Ma			
2.5	450	None Below 100 cps	6.3	0.60	Peak Inverse Voltage = 1250 Volts, Peak Plate Current Per Plate = 210 Ma, DC Output Current = 70 Ma			
2.5	450	None Below 100 cps	28.0	0.40	100	67.5	3.0	Eb = 28.0, Ec2 = 28.0, Ec1 = −3.5, Ib = 12.5, Ic2 = 1.0, Gm = 3400, Rp = 4.2 K, Rl = 4000, Po = 0.1
2.5	450	None Below 100 cps	5.0	3.0	Peak Inverse Voltage = 1550, Peak Plate Current Per Plate = 675 Ma, DC Output Current = 225 Ma			
2.5	450	None Below 100 cps	6.3	0.90	360	270	19	Eb = 350, Ec2 = 250, Ec1 = −18, Ib = 54, Ic2 = 2.5, Gm = 5200, Rp = 33 K, Rl = 4200, Po = 10.8
2.5	450	None Below 100 cps	6.3	0.90	600	300	25	Eb = 600, Ec2 = 300, Ec1 = −29, Ib = 36, Ic2 = 4.0 Max., Po at 15 Mc with Eb = 600, Ec2 = 200, Ib = 100, Ic1 = 5 to 7, Rl = 10,000 . . . 33 Watts Min.

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