

CHARACTERISTICS

Sylvania
REG. U.S. PAT. OFF.



TRANSMITTING
TUBES

PRECISION -- PERFORMANCE
ENDURANCE

Hygrade Sylvania
CORPORATION

ELECTRONICS DEPARTMENT

CLIFTON

NEW JERSEY



AVERAGE CHARACTERISTICS OF

AIR COOLED VACUUM TUBES

Type	Purpose or Use	Filament Volts	Filament Amperes	Normal R. F. Output, Watts	Voltage Amp. Factor	Plate Resistance, Ohms	Mutual Cond. Micro-mhos	STATIC CHARACTERISTICS				CLASS A OPERATION			
								Plate Volts	Screen Volts	Grid Bias Volts	Plate Current Amperes	Plate Volts	Screen Volts	Grid Bias Volts	Plate Current Amperes
102D	Voltage Amp.	2.25	.95		30	60000	500	130		1.5	.0007	150		3	.00026
203A	Osc. and R. F. Amp.	10	3.25	100	25	6000	4200	1000		10	.072				
204A	Osc. and R. F. Amp.	11	3.85	350	25	6300	4000	2000		32	.125				
205D	A. F. Amplifier	4.5	1.6	5	7.3	3750	1950	350		20	.035	370		30	.050
210	Osc. and Amp.	7.5	1.25	15	8	5450	1550	425		39	.018	600		58	.018
211	General Purpose	10	3.25	100	12	3400	3530	1000		50	.072	1000		52	.065
211B	General Purpose	10	3.25	100	12	3400	3530	1000		50	.072	1000		52	.065
211C	General Purpose	10	3.25	100	12	3400	3530	1000		50	.072	1000		52	.065
242A	A. F. Amplifier	10	3.25	100	12.5	3500	3600	1000		52	.072	1000		50	.085
261A	General Purpose	10	3.25	100	12	3400	3530	1000		50	.072	1000		52	.065
264A	A. F. Amplifier	1.5	.300		7.0	11800	595	100		7.0	.0026	100		7.0	.0026
254B	A. F. Amplifier	1.5	.300		7.0	11800	595	100		7.0	.0026	100		7.0	.0026
276A	General Purpose	10	3.0	100	12	3400	3530	1000		50	.072	1000		52	.065
282A	S. G. Osc. & R. F. Amp.	10	3.0	70	100	70000	1420	1000	200	35	.042	1000	200	40	.042
825	High Frequency Osc. and Amp.	7.5	3.25	40	10	10000	1000	1000		70	.000				
830	Osc., Amp. and Mod.	10	2.15	40	8	4000	2000	425		35	.020	425		35	.020
830A	Class "A" A. F. Amp.	10	2.0	60	8	2500	3250	750		50	.075	750		50	.075
830B	Class "B" A. F. Amp.	10	2.0	60	25	8130	3080	1000		16	.041				
831	Oscillator and R. F. Amplifier	11	10	550	14.5	6450	2250	3000		121	.133				
841	Osc. and V. Amp.	7.5	1.25	15	30	63000	450	425		6	.0007	1000		9	.0022
842	A. F. Amplifier	7.5	1.25	7.5	3	2500	1200	425		100	.028	425		100	.028
843	A. F. and R. F. Amp.	2.5	2.5	7.5	7.7	4800	1600	425		35	.025	425		25	.025
844	Osc., Amp. and Mod.	2.5	2.5	5	75	125000	600	500	180	6	.013	425	180	45	.028
845	Mod. and A. F. Amp.	10	3.25	100	5	1800	3000	1000		147	.075	1000		147	.075
849	General Purpose	11	5.0	500	19	3200	5000	3000		132	.100	2500		104	.110
850	Oscillator and R. F. Amplifier	10	3.25	100	550	203000	2750	1000	200	0	.0195				
851	General Purpose	11	15.5	1250	20	1400	15000	2000		65	.300	2000		65	.270
852	Oscillator and R. F. Amplifier	10	3.25	100	12	10000	1200	2000		108	.050				
860	Oscillator and R. F. Amplifier	10	3.25	100	200	180000	1100	2000	500	30	.050				
861	Oscillator and R. F. Amplifier	11	10	550	300	143000	2100	3000	750	20	.130				
865	Oscillator and R. F. Amplifier	7.5	2.0	15	150	200000	750	500	125	0	.018				

WATER COOLED VACUUM TUBES

207	Osc. and R. F. Amp.	22	52	6000	20	3500	5700	10000		310	.750				
820B	Osc. and R. F. Amp.	22	34	5000	16	4000	4000	7500		300	.400				
846	Short Wave Osc.	11	51	1400	40	18500	2160	6500		50	.250				
858	Osc. and R. F. Amp.	22	52	10000	42	8700	4800	18000		155	.750				
863	Osc. and R. F. Amp.	22	52	15000	50	7200	7000	10000		20	.750				

GRID CONTROLLED RECTIFIERS

				Max. Peak Inv. Volts		Max. Peak Plate Curr.		Type of Cooling	
867	Gen. Industrial	2.5	3.75	1000 Volts		0.600 Amps.		Air	
873	Gen. Industrial	5	7.5	1000 Volts		2.5 Amps.		Air	

Notes: *Grid Connects to Cap at Top of Tube. †Low Interelectrode Capacity. **Plate Connects to Cap at Top of Tube.

SYLVANIA TRANSMITTING TUBES



AIR COOLED VACUUM TUBES												
Type	CLASS B OPERATION				CLASS C OPERATION				Max. Grid R. F. Amps.	Type of Base	Type of Filament	Maximum Overall Dimensions in Inches
	Plate Volts	Screen Volts	Grid Bias Volts	Peak Plate Current Amperes	Plate Volts	Screen Volts	Grid Bias Volts	Peak Plate Current Amperes				
102D										Special 4-Pin	Coated	2 3/8 x 4 1/2
203A	1000		35	.130	900		180	.175	7.5	Std. 50 Watt	Thoriated	2 3/8 x 7 3/8
204A	2000		70	.160	2000		175	.275	10	Std. 250 Watt	Thoriated	4 1/8 x 14 3/8
205D	350		46	.050	400		80	.050	2	Special 4-Pin	Coated	2 3/8 x 4 1/2
210	600		80	.066	600		125	.070	5	Medium 4-Pin	Thoriated	2 1/8 x 5 3/8
211	1000		75	.130	1000		200	.175	7.5	Std. 50 Watt	Thoriated	2 3/8 x 7 3/8
211B	1000		75	.130	1000		200	.175	7.5	Std. 50 Watt*	Thoriated	2 3/8 x 8 3/8
211C	1000		75	.130	1000		200	.175	7.5	Std. 50 Watt†	Thoriated	2 3/8 x 7 3/8
242A									7.5	Std. 50 Watt	Thoriated	2 3/8 x 7 3/8
261A	1000		75	.130	1000		200	.175	7.5	Std. 50 Watt	Thoriated	2 3/8 x 7 3/8
264A										Small 4-Pin	Coated	1 3/8 x 4
264B										Silver Plated Prongs	Coated	1 3/8 x 4
276A	1250		100	.130	1000		200	.175	7.5	Std. 50 Watt	Thoriated	2 3/8 x 7 3/8
282A					1000	200	100	.100	7.5	Medium 4-Pin	Thoriated	2 3/8 x 6 1/2
825					1000		150	.080	5	Medium 4-Pin, Grid and Plate Caps	Thoriated	2 3/8 x 6 1/4
830	750		70	.060	750		180	.110	6	Medium 4-Pin	Thoriated	2 1/8 x 5 3/8
830A	1000		120	.150	1000		240	.150	7.5	Medium 4-Pin**	Thoriated	2 1/8 x 6 11/16
830B	1000		35	.150	1000		70	.150	7.5	Medium 4-Pin**	Thoriated	2 1/8 x 6 11/16
831	3000		185	.167	3000		300	.350	10	Std. 250 Watt and Flex. Lead	Thoriated	6 5/8 x 17 3/8
841	450		8	.036	450		30	.050	5	Medium 4-Pin	Thoriated	2 x 5 3/8
842					350		150	.050	5	Medium 4-Pin	Thoriated	2 x 5 3/8
843	350		40	.020	350		100	.040	2	Medium 5-Pin	Heater	2 x 5 3/8
844	500	150	5	.020	500	150	7	.030	2	Medium 5-Pin	Heater	2 3/8 x 6 1/4
845					1000		250	.175	7.5	Std. 50 Watt	Thoriated	2 3/8 x 7 3/8
849	2000		95	.260	3000		600	.350	6.7	Std. 250 Watt	Thoriated	4 1/8 x 14 3/8
850	1000	175	8	.100	1000	175	150	.175	7.5	Std. 50 Watt and Plate Cap	Thoriated	2 3/8 x 8 3/8
851	2000		85	.475	2000		200	1.0	10	Std. 250 Watt	Thoriated	6 3/8 x 17 3/8
852	2000		150	.060	2000		250	.100	10	Med. 4-Pin, Grid and Plate Leads	Thoriated	4 3/4 x 8 3/4
860	2000	300	50	.050	2000	300	200	.100	10	Med. 4-Pin, Grid and Plate Leads	Thoriated	4 3/4 x 8 3/4
861	3000	500	60	.167	3000	500	200	.350	10	Std. 250 Watt and Flex. Leads	Thoriated	6 5/8 x 17 3/8
865	750	125	30	.022	750	125	75	.060	5	Medium 4-Pin and Plate Cap	Thoriated	2 3/8 x 6 1/4
WATER COOLED VACUUM TUBES												
207	13500		700	.900	9000		2000	1.0	20	†	Tungsten	5 x 20 1/4
820B	6400		390	.470	10000		960	1.2	20	†	Tungsten	3 1/2 x 16
846	7000		150	.450	5400		400	0.5	20	†	Tungsten	3 1/2 x 9
858	18000		350	1.0	14400		3500	1.0	40	†	Tungsten	6 1/2 x 24 1/4
863	12000		250	.900	12000		2000	2.0	30	†	Tungsten	6 1/4 x 20 1/4
GRID CONTROLLED RECTIFIERS												
GENERAL INFORMATION												
867	Mercury Vapor				Grid Bias 2.0—3.5 Volts				Medium 4-Pin	Coated	2 3/8 x 6 3/8	
873	Mercury Vapor				Grid Bias 3.0—6.0 Volts				Std. 50 Watt	Coated	2 3/8 x 7 3/8	

†Sold Without Water Jacket.

NOTE: SEE BACK PAGE FOR RECTIFIER CHARACTERISTICS.

RECTIFIERS

Type	Purpose or Use	Fil. Volts	Fil. Amp.	Max. Peak Inv. Volts	Max. Peak Plate Curr.	GENERAL INFORMATION		Type of Base	Type of Filament	Max. Overall Dimensions in Inches
217A	Half Wave Rect.	10	3.25	3500	0.600	High Vacuum		Std. 50 Watt	Thoriated	2 $\frac{3}{16}$ x 7 $\frac{7}{8}$
217C	Half Wave Rect.	10	3.25	7500	0.600	High Vacuum		Std. 50 Watt	Thoriated	2 $\frac{3}{16}$ x 8 $\frac{1}{8}$
866	Half Wave Rect.	2.5	5	7500	0.600	Mercury Vapor		Medium 4-Pin	Coated	2 $\frac{7}{16}$ x 6 $\frac{5}{8}$
866A	Half Wave Rect.	2.5	5	10000	0.600	Mercury Vapor	Shielded Filament	Medium 4-Pin	Coated	2 $\frac{7}{16}$ x 6 $\frac{5}{8}$
872	Half Wave Rect.	5	10	7500	2.5	Mercury Vapor		Std. 50 Watt	Coated	2 $\frac{3}{16}$ x 7 $\frac{7}{8}$
872A	Half Wave Rect.	5	6.75	10000	2.5	Mercury Vapor	Shielded Filament	Std. 50 Watt	Coated	2 $\frac{3}{16}$ x 8 $\frac{5}{8}$
869	Half Wave Rect.	5	20	20000	5.0	Mercury Vapor		Std. 250 Watt	Coated	5 $\frac{1}{16}$ x 14 $\frac{3}{8}$
869A	Half Wave Rect.	5	20	20000	5.0	Mercury Vapor	Shielded Filament	Std. 250 Watt	Coated	5 $\frac{1}{16}$ x 14 $\frac{3}{8}$

Sylvania

GRAPHITE ANODE CONSTRUCTION

A graphite anode is now used in all Sylvania intermediate and high power air-cooled transmitting tubes. To the many inherent good features of the Sylvania line the graphite anode adds the following major advantages over tubes employing the ordinary type of metallic plate:

1. High plate dissipation without overheating. This is a direct result of the high thermal emissivity of graphite.
2. Lower operating temperature at the anode. This results in a lower operating temperature of the other electrodes, preventing primary and secondary emission from the grid.
3. Uniformity of characteristics. The physical properties of graphite permit exact processing. Graphite does not warp under high temperatures and the mechanical dimensions of the anode remain constant. Proper relation between the tube elements retained in this manner preserve the normal electrical characteristics of the tube. One-piece construction of the anode eliminates high contact resistance found in other methods of construction.
4. Long life. Comparative freedom from gas is another important result of the use of the graphite anode and the high vacuum obtainable results in longer tube life.

These new Sylvania tubes are not to be confused with ordinary "carbon plate" tubes. A process developed in the Sylvania laboratories produces a one-piece anode of pure graphite, with all amorphous carbon and other impurities removed. This treatment insures freedom from harmful carbon deposits on filament, insulators and presses.

THE ELECTRONICS DEPARTMENT OF HYGRADE SYLVANIA CORPORATION
PRODUCES A COMPLETE LINE OF RADIO TRANSMITTING TUBES, SPECIAL
PURPOSE AND PHOTOTUBES, RADIO TRANSMITTERS, SPECIAL
RECEIVERS AND ELECTRONIC DEVICES.

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