Table 22.39

Triode Transmitting Tubes

The full 1988 *Handbook* table of power tube specifications and base diagrams can be viewed in pdf format on the *ARRLWeb* at www.arrl.org/hf-tube-amplifiers.

Type	*Power Diss.(W)*	*Plate (V)*	*Plate (mA)*	*Grid dc (mA)*	*Freq (MHz)*	*Ampl Factor*	*Fil (V)*	*Fil (A)*	*C_{IN} (pF)*	*C_{GP} (pF)*	*C_{OUT} (pF)*	*Base Diagram*	*Service Class*[1]	*Plate (V)*	*Grid (V)*	*Plate (mA)*	*Grid dc (mA)*	*Input (W)*	*P-P (kΩ)*	*Output (W)*
5675	5	165	30	8	3000	20	6.3	0.135	2.3	1.3	0.09	Figure 21	GG0	120	–8	25	4	¾	—	0.05
2C40	6.5	500	25	—	500	36	6.3	0.75	2.1	1.3	0.05	Figure 11	CT0	250	–5	20	0.3	¾	—	0.075
5893	8.0	400	40	13	1000	27	6.0	0.33	2.5	1.75	0.07	Figure 21	CT	350	–33	35	13	2.4	—	6.5
													CP	300	–45	30	12	2.0	—	6.5
2C43	12	500	40	—	1250	48	6.3	0.9	2.9	1.7	0.05	Figure 11	CTO	470	—	38[7]	—	¾	—	9[2]
811-A	65	1000	175	50	60	160	6.3	4.0	5.9	5.6	0.7	3G	CT	1500	–70	173	40	7.1	—	200
													CP	1250	–120	140	45	10.0	—	135
													B/CG	1250	0	21/175	28	12	—	165
													AB_1	1250	0	27/175	13	3.0	—	155
812-A	65	1500	175	35	60	29	6.3	4.0	5.4	5.5	0.77	3G	CT	1500	–120	173	30	6.5	—	190
													CP	1250	–115	140	35	7.6	—	130
													B^2	1500	–48	28/310	270[4]	5.0	13.2	340
3CX100A5[6]	100	1000	125[5]	50	2500	100	6.0	1.05	7.0	2.15	0.035	—	AGG	800	–20	80	30	6	—	27
	70	600	100[5]										CP	600	–15	75	40	6	—	18
2C39	100	1000	60	40	500	100	6.3	1.1	6.5	1.95	0.03	—	G1C	600	–35	60	40	5.0	—	20
													CTO	900	–40	90	30	¾	—	40
													CP	600	–150	100[5]	50	¾	—	¾
AX9900,	135	2500	200	40	150	25	6.3	5.4	5.8	5.5	0.1	Figure 3	CT	2500	–200	200	40	16	—	390
5866													CP	2000	–225	127	40	16	—	204
													B^2	2500	–90	80/330	350[4]	14[3]	15.68	560
572B	160	2750	275	—	—	170	6.3	4.0	—	—	—	3G	CT	1650	–70	165	32	6	—	205
T160L													B/GG[2]	2400	–2.0	90/500	—	100	—	600
8873	200	2200	250	—	500	160	6.3	3.2	19.5	7.0	0.03	Figure 87	AB_2	2000	—	22/500	98[3]	27[3]	—	505
8875	300	2200	250	—	500	160	6.3	3.2	19.5	7.0	0.03	—	AB_2	2000	—	22/500	98[3]	27[3]	—	505
833A	350	3300	500	100	30	35	10	10	12.3	6.3	8.5	Figure 41	CTO	2250	–125	445	85	23	—	780
													CTO	3000	–160	335	70	20	—	800
													CP	2500	–300	335	75	30	—	635
	450[6]	4000[6]	500	100	20[6]	35	10	10	12.3	6.3	8.5	Figure 41	CP	3000	–240	335	70	26	—	800
													B^2	3000	–70	100/750	400[4]	20[4]	9.5	1650
8874	400	2200	350	—	500	160	6.3	3.2	19.5	7.0	0.03	—	AB_2	2000	—	22/500	98[3]	27[3]	—	505
3-400Z	400	3000	400	—	110	200	5	14.5	7.4	4.1	0.07	Figure 3	B/GG	3000	0	100/333	120	32	—	655
3-500Z	500	4000	400	—	110	160	5	14.5	7.4	4.1	0.07	Figure 3	B/GG	3000	—	370	115	30	5	750
3-600Z	600	4000	425	—	110	165	5	15.0	7.8	4.6	0.08	Figure 3	B/GG	3000	—	400	118	33	—	810
													B/GG	3500	—	400	110	35	—	950
3CX800A7	800	2250	600	60	350	200	13.5	1.5	26	—	6.1	Figure 87	AB_2GG[7]	2200	–8.2	500	36	16	—	750
3-1000Z	1000	3000	800	—	110	200	7.5	21.3	17	6.9	0.12	Figure 3	B/GG	3000	0	180/670	300	65	—	1360
3CX1200A7	1200	5000	800	—	110	200	7.5	21.0	20	12	0.2	Figure 3	AB_2GG	3600	–10	700	230	85	—	1500
8877	1500	4000	1000	—	250	200	5.0	10	42	10	0.1	—	AB_2	2500	–8.2	1000	—	57	—	1520

Table 22-40

Tetrode Transmitting Tubes

Also see **www.arrl.org/hf-tube-amplifiers.**

Type	Max. Plate Diss. (W)	Max. Plate Volts (V)	Max. Screen Diss. (W)	Max. Screen Volts (V)	Max. Freq. (MHz)	Filament Volts (V)	Amps (A)	C_{IN} (pF)	C_{GP} (pF)	C_{OUT} (pF)	Base	Serv. Class[1]	Plate (V)	Screen (V)	Grid (V)	Plate (mA)	Screen (mA)	Grid (mA)	P_{IN} (W)	P-P (kΩ)	P_{OUT} (W)
6146/	25	750	3	250	60	6.3	1.25	13	0.24	8.5	7CK	CT	500	170	–66	135	9	2.5	0.2	—	48
6146A												CT	700	160	–62	120	11	3.1	0.2	—	70
8032	25	750	3	250	60	12.6	0.585	13	0.24	8.5	7CK	CT[6]	400	190	–54	150	10.4	2.2	3.0	—	35
6883												CP	400	150	–87	112	7.8	3.4	0.4	—	32
												CP	600	150	–87	112	7.8	3.4	0.4	—	52
6159B/	25	750	3	250	60	26.5	0.3	13	0.24	8.5	7CK	AB_2[8]	600	190	–48	28/270	1.2/20	22	0.3	5	113
												AB_2[8]	750	165	–46	22/240	0.3/20	2.6[2]	0.4	7.4	131
												AB_1[8]	750	195	–50	23/220	1/26	100[3]	0	8	120
807, 807W	30	750	3.5	300	60	6.3	0.9	12	0.2	7	5AW	CT	750	250	–45	100	6	3.5	0.22	—	50
5933												CP	600	275	–90	100	6.5	4	0.4	—	42.5
												AB_1	750	300	–35	15/70	3/8	753	0	—	72
1625	30	750	3.5	300	60	12.6	0.45	12	0.2	7	5AZ	B[5]	750	—	0	15/240	—	555[3]	5.3[2]	6.65	120
6146B	35	750	3	250	60	6.3	1.125	13	0.22	8.5	7CK	CT	750	200	–77	160	10	2.7	0.3	—	85
8298A												CP	600	175	–92	140	9.5	3.4	0.5	—	62
												AB_1	750	200	–48	24/125	6.3	—	—	3.5	61
813	125	2500	20	800	30	10.0	5.0	16.3	0.25	14.0	5BA	CTO	1250	300	–75	180	35	12	1.7	—	170
												CTO	2250	400	–155	220	40	15	4	—	375
												AB1	2500	750	–95	25/145	27[2]	0	0	—	245
												AB_2[8]	2000	750	–90	40/315	1.5/58	230[3]	0.1[2]	16	455
												AB_2[8]	2500	750	–95	35/260	1.2/55	235[3]	0.35[2]	17	650
4CX250B	250	2000	12	400	175	6.0	2.9	18.5	0.04	4.7	—	CTO	2000	250	–90	250	25	27	2.8	—	410
												CP	1500	250	–100	200	25	17	2.1	—	250
												AB_1[8]	2000	350	–50	500	30	100	0	8.26	650
4-400A	400[4]	4000	35	600	110	5.0	14.5	12.5	0.12	4.7	5BK	CT/CP	4000	300	–170	270	22.5	10	10	—	720
												GG	2500	0	0	80/270[9]	55[9]	100[9]	39[9]	4.0	435
												AB_1	2500	750	–130	95/317	0/14	0	0	—	425
4CX400A	400	2500	8	400	500	6.3	3.2	24	0.08	7	See[11]	AB_2GD	2200	325	–30	100/270	22	2	9	—	405
												AB_2GD	2500	400	–35	100/400	18	1	13	—	610
4CX800A	800	2500	15	350	150	12.6	3.6	51	0.9	11	See[12]	AB_2GD	2200	350	–56	160/550	24	1	32	—	750
4-1000A	1000	6000	75	1000	—	7.5	21	27.2	0.24	7.6	—	CT	3000	500	–150	700	146	38	11	—	1430
8166												CP	3000	500	–200	600	145	36	12	—	1390
												AB_2	4000	500	–60	300/1200	0/95	—	11	7	3000
												GG	3000	0	0	100/700[9]	105[9]	170[9]	130[9]	2.5	1475
4CX1000A	1000	3000	12	400	110	6.0	9.0	81.5	0.01	11.8	—	AB_1[8]	2000	325	–55	500/2000	–4/60	—	—	2.5	2160
												AB_1[8]	2500	325	–55	500/2000	–4/60	—	—	3.1	2920
												AB_1[8]	3000	325	–55	500/1800	–4/60	—	—	3.85	3360
4CX1500B	1500	3000	12	400	110	6.0	10.0	81.5	0.02	11.8	—	AB_1	2750	225	–34	300/755	–14/60	0.95	1.5	1.9	1100
4CX1600B	1600	3300	20	350	250	12.6	4.4	86	0.15	12	See[13]	AB_2GD	2400	350	–53	500/1100	20	2	28	—	1600
												AB_2GD	2400	350	–70	200/870	48	2	83[10]	—	1500
												AB_2GD	3200	240	–57	200/740	21	1	33	—	1600

[1]Service Class Abbreviations: AB_2GD=AB_2 linear with 50-Ω passive grid circuit.
B=Class-B push-pull
CP=Class-C plate-modulated phone
CT=Class-C telegraph
GG=Grounded-grid (grid and screen connected together)
[2]Maximum signal value
[3]Peak grid-grid volts
[4]Forced-air cooling required.
[5]Two tubes triode-connected, G2 to G1 through 20kΩ to G2.
[6]Typical operation at 175 MHz.
[7]±1.5 V.
[8]Values are for two tubes.
[9]Single tone.
[10]24-Ω cathode resistance.
[11]Base same as 4CX250B. Socket is Russian SK2A.
[12]Socket is Russian SK1A.
[13]Socket is Russian SK3A.

Table 22.41
EIA Vacuum-Tube Base Diagrams

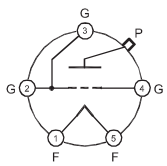
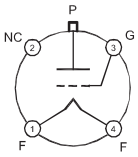
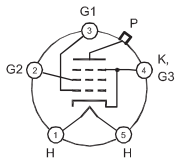


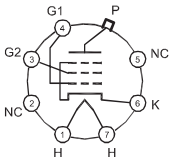
FIG 3



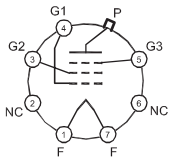
3G



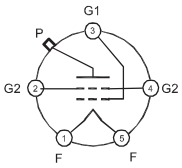
5AW



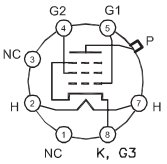
5AZ



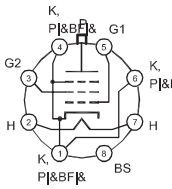
5BA



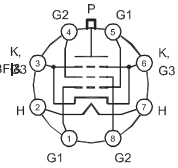
5BK



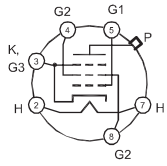
6AM



7CK



8JC



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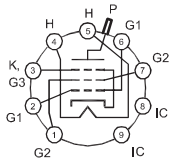

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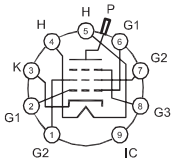

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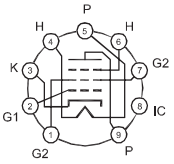

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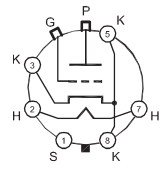
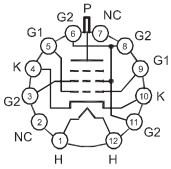
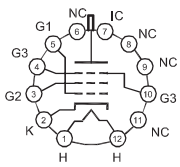


FIG 11



12FB



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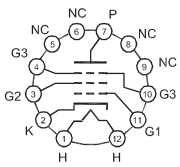

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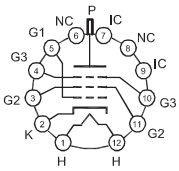

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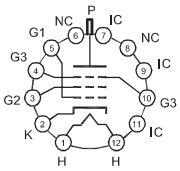
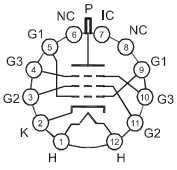


12GJ



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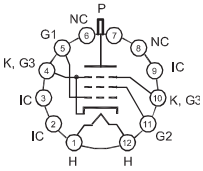

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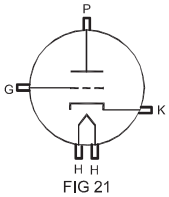

FIG 21

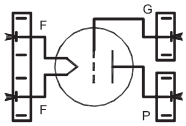

FIG 41

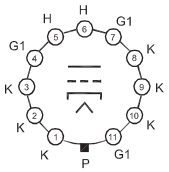

FIG 87

Base diagrams correspond to the codes in "Base" columns of the tube-data tables. Bottom views are shown throughout. Base connections are abbreviated as follows:

BS - Base sleeve	NC - No connection
F - Filament	P - Plate
G - Grid	P_{BF} - Beam plates
H - Heater	S - Shell
IC - Internal connection	K - Cathode

HBK05_07-14

Alphabetical subscripts (D = diode, P = pentode, T = triode and HX = hexode) indicate structures in multistructure tubes. Subscript CT indicates filament or heater center tap.

Generally, when pin 1 of a metal-envelope tube (except all triodes) is shown connected to the envelope, pin 1 of a glass-envelope counterpart (suffix G or GT) is connected to an internal shield.