

*Western Electric*

**ELECTRON TUBES**



**DESIGNS BY BELL TELEPHONE LABORATORIES**

3/16/56

## FOREWORD

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*T*his bulletin presents in concise tabular form the essential data on Western Electric electron tubes, which are designed by Bell Telephone Laboratories. The text material has been selected and arranged with the view of guiding the circuit designer most readily to the Western Electric tube which will meet his requirements for particular applications. While certain special-purpose tubes designed for military applications and having limited fields of use have not been covered in this General Bulletin, information on them will be made available on request to those contemplating specific applications.

## Price and Delivery Information

The Graybar Electric Company is the national distributor of Western Electric electronic products. To secure price and delivery information, contact your nearest Graybar office. A listing of the main Graybar offices throughout the country is presented on page 16 of this bulletin.

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## Technical Inquiries

It is the objective of the Western Electric Company to furnish to those engaged in the design, fabrication and use of electronic equipment all available information relating to our electron tubes and their application. If some special application or characteristic is required of a tube, we shall be glad to recommend a suitable type and to suggest design and operating precautions necessary for realizing the capabilities of such tubes. Please address all inquiries for technical information to:

**WESTERN ELECTRIC COMPANY**

*Radio Division, Department 9713*

120 Broadway, New York 5, New York

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## Numerical Code Index

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# General Purpose Tubes

Code	Type	Cathode			Absolute Maximum Ratings					Average Characteristics — Class A					Maximum Dimensions		Western Electric Socket	Basing Diagram Number	Code	
					Plate Volts	Scr. Volts	Plate Diss. Watts	Scr. Diss. Watts	Htr.-Cath. Volts	Plate Volts	Plate Cur. Ma.	Ampl. Fact.	Trans-cond. $\mu$ hos	Plate Res. Ohms	Power Output Watts	Height				Diam.
		Type	Volts	Amps.																
2C51	Miniature Double Triode	H	6.3	0.300	330	—	1.6	—	100	150	8.2	35	5500	6400	—	1 3/4	7/8	9-Pin Min.	70	2C51
6AJ5	Miniature Pentode	H	6.3	0.175	200	155	1.85	0.55	100	28	3.0	250	2750	90000	—	1 3/4	3/4	7-Pin Min.	74	6AJ5
6AK5	Miniature Pentode	H	6.3	0.175	200	155	1.85	0.55	100	120	7.5	1700	5000	340000	—	1 3/4	3/4	7-Pin Min.	74	6AK5
6AS6	Miniature Pentode	H	6.3	0.175	200	155	1.85	0.85	100	120	5.2	480	3200	150000	—	1 3/4	3/4	7-Pin Min.	75	6AS6
101D	Triode	O-F	4.2	1.0	200	—	2.0	—	—	130	7.7	6.2	1070	5800	.065	4 1/2	1 13/16	100L or 100R	1	101D
101F	Triode	O-F	4.0	0.5	200	—	2.0	—	—	130	6.8	6.5	1120	5800	.060	4 1/2	1 13/16	100L or 100R	1	101F
102D	Triode	O-F	2.1	1.0	190	—	—	—	—	130	0.8	29.6	510	58000	—	4 1/2	1 13/16	100L or 100R	1	102D
102F	Triode	O-F	2.1	0.5	190	—	—	—	—	130	0.85	31.0	620	50000	—	4 1/2	1 13/16	100L or 100R	1	102F
104D	Triode	O-F	4.5	1.0	190	—	—	—	—	130	25	2.5	1180	2100	.160	4 1/2	1 13/16	100L or 100R	1	104D
205F	Triode	O-F	4.5	1.6	400	—	14	—	—	350	35	7.3	1870	3900	—	4 1/2	1 13/16	100M or 115B	6	205F
215A	Triode	O-F	1.0	0.25	110	—	0.3	—	—	60	2.0	5.7	420	13500	.0029	2 11/16	11/16	125B	1	215A
231D	Triode	O-F	3.1	0.06	150	—	—	—	—	90	2.1	8.4	510	16300	.0045	4	1 3/32	143B	2A	231D
244A	Triode	H	2.0	1.6	200	—	1.2	—	100	135	5.5	10.1	1010	10000	.049	4 7/8	1 13/16	141A	22	244A
245A	Tetrode	H	2.0	1.6	200	75	—	—	100	135	4.8	135	750	180000	—	5 1/4	1 13/16	141A	23	245A
246A	Tetrode	O-F	3.3	0.1	180	67.5	—	—	—	135	1.5	285	390	725000	—	5 1/4	1 13/16	143B	8	246A
247A	Triode	H	2.0	1.6	200	—	1.0	—	100	135	3.2	15.2	940	16000	.037	4 7/8	1 13/16	141A	22A	247A
252A	Triode	O-F	5.0	2.0	550	—	38	—	—	450	60	5.1	3450	1500	7.0	6 3/4	2 7/16	143B	2	252A
257A	Triode	O-F	3.1	0.06	150	—	—	—	—	90	2.1	8.4	510	16300	.0045	4 9/16	1 3/32	143B	11	257A
259A	Tetrode	H	2.0	1.6	275	100	—	—	100	180	5.5	550	1380	400000	—	5 1/4	1 13/16	141A	23	259A
259B	Tetrode	H	2.0	1.6	275	100	—	—	100	180	5.5	550	1380	400000	—	5 1/4	1 13/16	141A	23	259B
262B	Triode	H	10.0	0.32	200	—	—	—	30	135	2.8	15.7	900	17500	.035	4 3/4	1 9/16	143B	12	262B
264C	Triode	O-F	1.5	0.30	110	—	—	—	—	100	2.1	7.2	580	12400	.033	4	1 3/16	143B	2A	264C
271A	Triode	H	5.0	2.0	500	—	—	—	100	400	37.5	8.3	2920	2830	2.8	6 3/4	2 7/16	141A	22A	271A
272A	Triode	H	10.0	0.32	200	—	1.4	—	100	140	5.4	5.6	760	7400	.120	4 7/8	1 13/16	141A	22	272A
275A	Triode	O-F	5.0	1.2	330	—	17	—	—	200	47	2.8	2770	1030	1.9	5 5/8	2 3/16	143B	2	275A
281A	Tetrode	O-F	5.0	1.6	250	75	—	—	—	130	35	5.0	1470	3400	2.2	6 3/4	2 11/16	141A	21	281A
283A	Tetrode (Var. Mu)	H	2.0	1.6	275	100	—	—	100	180	5.9	585	1360	430000	—	5 1/4	1 13/16	141A	23	283A
285A	Pentode	H	2.0	1.6	275	220	—	—	100	180	8.8	135	880	153000	.65	5 1/4	1 13/16	141A	24	285A
300B	Triode	O-F	5.0	1.2	480	—	40	—	—	300	60	3.8	5400	700	6.0	6 1/2	2 7/16	100M or 143B	50	300B
309A	Pentode (Var. Mu)	H	10.0	0.32	250	100	—	—	150	180	4.8	1100	1100	1000000	—	4 29/32	1 9/16	141A	24A	309A

# General Purpose Tubes (Continued)

Code	Type	Cathode			Absolute Maximum Ratings					Average Characteristics — Class A					Maximum Dimensions		Western Electric Socket	Basing Diagram Number	Code	
					Plate Volts	Scr. Volts	Plate Diss. Watts	Scr. Diss. Watts	Htr.-Cath. Volts	Plate Volts	Plate Cur. Ma.	Ampl. Fact.	Transcond. $\mu$ mhos	Plate Res. Ohms	Power Output Watts	Height				Diam.
		Type	Volts	Amps.																
310A	Pentode	H	10.0	0.32	275	180	2.5	0.4	150	135	5.5	1350	1800	750000	.250	4 29/32	1 9/16	144B	32	310A
310B	Pentode	H	10.0	0.32	275	180	2.5	0.4	30	135	5.5	1200	1800	650000	.250	4 29/32	1 9/16	144B	32	310B
311A	Pentode	H	10.0	0.64	200	150	—	—	150	135	30	122	2800	43000	2.0	4 29/32	1 9/16	141A	24A	311A
328A	Pentode	H	7.5	0.425	275	180	2.5	0.4	150	135	5.5	1350	1800	750000	.250	4 29/32	1 9/16	144B	32	328A
329A	Pentode	H	7.5	0.85	200	160	—	—	150	135	30	122	2800	43000	2.0	4 29/32	1 9/16	141A	24A	329A
336A	Pentode	H	10.0	0.64	275	275	9.4	3.1	60	250	30	336	4200	80000	3.5	4 7/16	1 9/16	144B	29	336A
337A	Pentode	H	10.0	0.32	275	150	2.5	0.4	150	135	6.0	1070	1650	650000	—	4 29/32	1 9/16	144B	32	337A
347A	Triode	H	6.3	0.50	200	—	—	—	30	135	2.8	15.7	900	17500	.035	4 3/4	1 9/16	Octal	37	347A
348A	Pentode	H	6.3	0.50	275	180	2.5	0.4	30	135	5.5	1200	1800	650000	.250	4 29/32	1 9/16	Octal	38	348A
349A	Pentode	H	6.3	1.0	275	275	9.4	3.1	60	250	30	336	4200	80000	3.5	4 7/16	1 9/16	Octal	39	349A
350B	Beam Tetrode	H	6.3	1.6	400	300	25	4	150	400	53	400	6250	64000	20	5 13/32	2 1/16	Octal	31	350B
352A	Duodiode - Triode	H	10.0	0.32	200	—	—	—	100	135	2.1	13.3	650	20500	.042	4 3/4	1 9/16	144B	27	352A
373A	Pentode	O-F	2.0	0.25	250	150	—	—	—	150	2.0	1900	1320	1400000	—	3 1/4	1 7/16	Octal	67	373A
374A	Pentode	O-F	3.0	0.53	150	150	3.5	1.0	—	135	18	210	3000	70000	1.3	3 1/4	1 7/16	Octal	68	374A
375A	Beam Tetrode	H	20	0.32	130	130	6.0	1.3	—	45	12.5	72	4700	15300	0.23	4 7/8	1 7/16	Octal	64	375A
382A	Triode	H	6.3	0.15	200	—	1.6	—	100	120	4.5	25	2800	9000	—	1 17/32*	1 3/8	None	58	382A
383A	Triode	H	6.3	0.15	200	—	1.6	—	100	120	4.5	25	2800	9000	—	1 7/8	1 3/8	Octal	57	383A
384A	Pentode	H	6.3	0.15	275	130	1.85	0.55	100	120	5.6	1230	2500	500000	23dbm	1 25/32*	1 3/8	None	66	384A
385A	Pentode	H	6.3	0.15	275	130	1.85	0.55	100	120	5.6	1230	2500	500000	23dbm	2 5/16	1 3/8	Octal	65	385A
386A	Pentode	H	6.3	0.15	180	120	1.85	0.55	100	120	7.5	1550	4000	390000	—	1 25/32*	1 3/8	None	66	386A
387A	Pentode	H	6.3	0.15	180	120	1.85	0.55	100	120	7.5	1550	4000	390000	—	2 5/16	1 3/8	Octal	65	387A
401A	Miniature Pentode	H	6.3	0.15	200	155	1.85	0.55	100	90	3.9	600	2000	300000	—	1 3/4	3/4	7-Pin Min.	74	401A
403B	Miniature Pentode	H	6.3	0.15	200	155	1.85	0.55	100	120	7.5	1700	5000	340000	—	1 3/4	3/4	7-Pin Min.	74	403B

### Key to Symbols and Abbreviations:

Ampl. Fact. — Amplification Factor	dbm — Decibels Above One Milliwatt	H — Heater-Type Cathode	O — Oxide-Coated	Var. Mu — Variable Amplification Factor
Amps. — Amperes	Diam. — Diameter	Htr. — Heater	Res. — Resistance	Factor
Cath. — Cathode	Diss. — Dissipation	Ma. — Milliampere	Scr. — Screen	$\mu$ mhos — Micromhos
Cur. — Current	F — Filament-Type Cathode	Min. — Miniature	Transcond. — Transconductance	* — Excluding Flexible Leads

# Transmitting Tubes

Code	Type	Cooling	Cathode			Absolute Maximum Ratings				Average Static Characteristics				Typical Power Output		Maximum Dimensions Inches		Western Electric Socket	Basing Diagram Number	Code
						Plate	Plate	Freq.	Plate	Trans-	Class	Watts	Height	Diam.						
			Volts	Amps.	Mc	Volts	Amps.	Watts	Volts	Amps.					Fact.	cond. $\mu$ mhos				
<b>5D2I</b>	Tetrode (Pulse Ampl.)	Air	H	26.0	2.1	20000	.030	60	—	(Non-Inductive Load, Peak Anode Current=15 amperes)						5 7/8	2 9/16	152A	76	5D2I
<b>212E</b>	Triode	Air	T-F	14.0	6.0	3000	.300	275	1.5	2000	.165	16	8500	B-RF	200	13 5/8	3 5/8	147A	4	212E
<b>220C</b>	Triode	Water	W-F	21.5	41.0	15000	1.5	10000	4	10000	.64	40	5000	B-RF	2750	20 7/8	6 1/16	132A or 133A	44	220C
<b>220CA</b>	Triode	F Air	W-F	21.5	41.0	15000	1.5	5000	4	10000	.50	40	5000	B-RF	2200	21 3/16	7 7/32	154A	44	220CA
<b>228A</b>	Triode	Water	W-F	21.5	41.0	6000	1.5	5000	3	5000	.90	16	6500	B-RF	1100	18	3 1/2	126A	41	228A
<b>232B</b>	Triode	Water	W-F	20.0	60.0	20000	3.0	25000	3	15000	1.35	40	6500	B-RF	9000	21 15/16	6 1/16	132A or 133A	44	232B
<b>236A</b>	Triode	Water	W-F	21.5	41.0	20000	2.0	20000	3	15000	1.0	40	6450	B-RF	5000	30	3 3/4	132A or 133A	44	236A
<b>240B</b>	Triode	Water	W-F	21.5	41.0	12000	1.7	10000	20	10000	.64	40	5000	B-RF	5000	25 17/32	6 7/32	Spl. Mtg.	44	240B
<b>241B</b>	Triode	Air	T-F	14.0	6.0	3000	.350	275	7.5	2000	.165	16	8500	B-RF	150	14 1/2	3 5/8	119A	5	241B
<b>242C</b>	Triode	Air	T-F	10.0	3.25	1250	.150	100	6	1250	.068	12.5	3600	B-RF	50	7 15/16	2 5/16	145A	3	242C
<b>251A</b>	Triode	Air	T-F	10.0	16.0	3000	.600	1000	30	2500	.240	10.5	3800	B-RF	400	21 11/16	6 1/8	142A	44	251A
<b>254A</b>	Tetrode	Air	T-F	5.0	3.25	750	.060	20	15	750	.027	80	1000	B-RF	10	6 15/16	2 7/16	143B	10	254A
<b>254B</b>	Tetrode	Air	T-F	7.5	3.25	750	.075	25	15	750	.033	100	1160	B-RF	12.5	6 15/16	2 7/16	143B	10	254B
<b>268A</b>	Triode	Air	T-F	5.0	3.25	750	.060	25	30	750	.025	5	800	B-RF	12.5	6 15/16	2 7/16	143B	15	268A
<b>270A</b>	Triode	Air	T-F	10.0	9.75	3000	.375	350	7.5	2500	.120	16	5700	B-RF	175	17	4	Spl. Mtg.	41	270A
<b>276A</b>	Triode	Air	T-F	10.0	3.0	1250	.125	100	30	1250	.068	12	4000	B-RF	50	7 15/16	2 5/16	145A	3	276A
<b>279A</b>	Triode	Air	T-F	10.0	21.0	3000	.800	1200	20	2500	.300	10	5000	B-RF	600	21 11/16	6 1/8	142A	44	279A
<b>282A</b>	Tetrode	Air	T-F	10.0	3.0	1000	.100	70	30	1000	.070	100	1430	B-RF	33	6 15/16	2 7/16	143B	10	282A
<b>284D</b>	Triode	Air	T-F	10.0	3.25	1250	.150	85	6	1250	.064	4.8	2500	A-Audio	40	7 15/16	2 5/16	145A	3	284D
<b>295A</b>	Triode	Air	T-F	10.0	3.25	1250	.175	100	6	1250	.080	25	4200	B-RF	42.5	7 15/16	2 5/16	145A	3	295A
<b>298A</b>	Triode	Water	W-F	27.0	225	20000	11.0	100000	4	18000	4.2	32	22000	B-RF	25000	52 1/16	9 9/16	Spl. Mtg.	44	298A
<b>298B</b>	Triode	Water	W-F	27.0	225	20000	11.0	100000	4	18000	3.0	57.5	20000	C-RF (UM)	100000	52 1/16	9 9/16	Spl. Mtg.	44	298B
<b>305A</b>	Tetrode	Air	T-F	10.0	3.1	1000	.125	60	50	1000	.060	56	1400	B-RF	30	7 3/16	2 7/16	143B	16	305A
<b>306A</b>	Pentode	Air	O-F	2.75	2.0	300	.060	15	50	250	.043	250	4050	C-RF (PM)	7	6 1/8	2 1/16	141A	26	306A
<b>307A</b>	Pentode	Air	O-F	5.5	1.0	500	.060	15	40	250	.050	120	4000	C-RF (SM)	6	6 1/8	2 1/16	141A	30	307A
<b>308B</b>	Triode	Air	T-F	14.0	6.0	2250	.325	250	1.5	1500	.167	8	7500	A-Audio	50	13 5/8	3 5/8	147A	4	308B
<b>312A</b>	Pentode	Air	T-F	10.0	2.8	1250	.100	50	20	1000	.050	1100	3800	C-RF (SM)	23	7 3/4	2 5/16	144B	33	312A

# Transmitting Tubes (Continued)

Code	Type	Cooling	Cathode		Absolute Maximum Ratings				Average Static Characteristics				Typical Power Output		Maximum Dimensions Inches		Western Electric Socket	Basing Diagram Number	Code	
					Plate Volts	Plate Cur. Amps.	Plate Diss. Watts	Freq. F1 Mc	Plate Volts	Cur. Amps.	Ampl. Fact.	Trans. cond. $\mu$ mhos	Class	Watts	Height	Diam.				
			Type	Volts																Amps.
316A	Triode	Air	T-F	2.0	3.65	450	.080	30	500	450	.067	6.5	2400	Osc. (PM)	6.5	2 25/32	2 11/16	Spl. Mtg.	46	316A
320A	Triode	Water	W-F	35.0	435	18000	15.0	150000	2	18000	8.0	30	31100	B-RF	75000	94	12	Spl. Mtg.	45	320A
322A	Pentode	Air	T-F	10.0	5.0	2000	.175	125	20	2000	.0625	1400	4000	C-RF (SM)	53	9 3/8	2 9/16	*	47	322A
331A	Triode	Air	T-F	10.0	3.25	1500	.200	125	30	1500	.085	40	4500	B-Audio (2)	370	8 1/2	2 5/16	145A	48	331A
332A	Pentode	Air	T-F	10.0	5.0	2000	.175	125	20	2000	.0625	1400	4000	C-RF (PM)	135	9 3/8	2 9/16	143B	34	332A
339A	Pentode	Air	O-F	5.0	1.2	575	.125	45	—	400	.073	96	4800	B-RF	30	7 1/16	2 7/16	141A	30A	339A
340A	Triode	Water	W-F	20.0	72.0	20000	2.5	25000	10	15000	1.3	40	6820	B-RF	9000	21 15/16	6 1/16	132A or 133A	44	340A
341AA	Triode	F Air	W-F	21.5	57.5	10000	1.5	5000	—	7000	0.7	9	3750	B-Audio	8000	21 3/16	7 7/32	154A	44	341AA
342A	Triode	Water	W-F	20.0	67.0	20000	2.5	25000	4	15000	1.3	40	6820	B-RF	8500	21 15/16	6 1/16	132A or 133A	44	342A
343A	Triode	Water	W-F	21.5	57.5	18000	2.0	10000	4	10000	.64	40	6750	B-RF	3500	20 7/8	6 1/16	132A or 133A	44	343A
343AA	Triode	F Air	W-F	21.5	57.5	18000	1.5	5000	4	10000	0.50	40	6750	B-RF	3500	21 3/16	7 7/32	154A	44	343AA
350A	Tetrode	Air	H	6.3	1.6	600	.125	30	—	500	.055	430	6400	B-RF	24	5 31/32	2 1/16	141A	36	350A
356B	Triode	Air	T-F	5.0	5.0	1500	.120	60	100	600	.100	50	3800	C-RF (PM)	85	4 7/8	2 5/16	152A	20	356B
357B	Triode	Air	T-F	10.0	10.0	4000	.500	350	100	700	.500	30	9000	C-RF (PM)	350	8	5 1/8	KS-10299-1	42	357B
363A	Pentode	Air	T-F	10.0	10.0	4000	.500	350	85	700	.500	300	12000	C-RF (UM)	1000	8	5 1/8	KS-10299-1	52	363A
364A	Triode	Air	T-F	5.0	5.0	1500	.120	50	150	1000	.100	50	4500	C-RF (PM)	85	3 3/8	2 5/8	A5A or A5B	53	364A
367A	Tetrode	Air	H	6.3	1.6	400	.125	25	—	400	.053	400	6250	B-RF	20	4 5/16	2 1/16	Octal	54	367A
368A	Triode	Air	T-F	1.15	4.5	350	.075	20	1250	300	.060	8	2500	Osc.	3.0	2	2 7/64	Spl. Mtg.	55	368A
368AS	Triode	Air	T-F	1.15	4.5	350	.075	20	1000	300	.060	8	2500	Osc.	2.5	2	2 7/64	Spl. Mtg.	46	368AS
379A	Triode	Air	T-F	10.0	21.0	3000	.800	1200	20	2500	.300	10	5000	B-RF	600	21 11/16	6 1/8	142A	44	379A
389AA	Triode	F Air	W-F	11.0	150	8500	2.5	7500	50	5000	1.5	22	16000	C-RF (UM)	13500	11 11/16	8 19/32	Spl. Mtg.	77	389AA
715C	Tetrode (Pulse Ampl.)	Air	H	26.0	2.1	15000	.030	60	(Inductive Load. Peak Anode Current = 15 amperes)						5 7/8	2 9/16	152A	76	715C	

## Key to Symbols and Abbreviations

<p><b>A-Audio</b> — Class A Audio Frequency</p> <p><b>Ampl.</b> — Amplifier</p> <p><b>Ampl. Fact.</b> — Amplification Factor</p> <p><b>Amps.</b> — Amperes</p> <p><b>B-Audio (2)</b> — Class B Audio Frequency, 2 Tubes</p>	<p><b>B-RF</b> — Class B Radio Frequency</p> <p><b>C-RF</b> — Class C Radio Frequency</p> <p><b>Cur.</b> — Current</p> <p><b>Diam.</b> — Diameter</p> <p><b>Diss.</b> — Dissipation</p> <p><b>F</b> — Filament-Type Cathode</p> <p><b>F Air</b> — Forced Air</p>	<p><b>Freq. F1</b> — Maximum Frequency for Operation at Full Plate Voltage</p> <p><b>H</b> — Heater-Type Cathode</p> <p><b>Mc</b> — Megacycles</p> <p><b>O</b> — Oxide Coated</p> <p><b>Osc.</b> — Oscillator</p> <p><b>PM</b> — Plate-Modulated</p>	<p><b>SM</b> — Suppressor Grid-Modulated</p> <p><b>Spl. Mtg.</b> — Special Mounting</p> <p><b>T</b> — Thoriated Tungsten</p> <p><b>Transcond.</b> — Transconductance</p> <p><b>UM</b> — Unmodulated</p> <p><b>W</b> — Tungsten</p> <p><b><math>\mu</math>mhos</b> — Micromhos</p> <p><b>*</b> — National JX-100</p>
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# Rectifiers

Code	Type	Cooling	Cathode			Maximum Peak Inverse Anode Volts	Maximum Peak Anode Amps.		Maximum Average Anode Amps.		Max. Time of Averaging Anode Amps. Seconds	Condensed Mercury Temp. Range °C	Maximum Dimensions Inches		Western Electric Socket	Basing Diagram Number	Code
			Type	Volts	Amps.		In Phase	Quad.	In Phase	Quad.			Height	Diam.			
3B24W	Rh-V	Air	T-F	5.0	3.0	20000	.300	—	.060	—	—	—	4 13/16	1 9/16	143B	71	3B24W
222A	Rh-V	Water	W-F	21.5	41	25000	5.0	—	1.5	—	—	—	18	3 9/16	132A or 133A	7	222A
233A	Rh-V	Water	W-F	21.5	41	50000	5.0	—	1.5	—	—	—	23 1/4	4 3/16	132A or 133A	7	233A
249B	Rh-Hg	Air	O-F	2.5	7.5	7500	2.5	—	0.64	—	5	20-70	7 5/8	2 11/16	143B	13	249B
253A	Rh-Hg	Air	O-F	2.5	3.0	3500	1.0	—	0.25	—	5	20-60	6 13/16	2 3/16	138B or 139A	7A	253A
255B	Rh-Hg	Air	O-F	5.0	19	20000	8.0	16.0	2.0	4.0	30	25-40	17 1/2	5 3/16	Spl. Mtg.	7A	255B
258B	Rh-Hg	Air	O-F	2.5	7.5	7500	2.5	—	0.64	—	5	20-70	7 15/16	2 11/16	138B or 139A	7A	258B
266B	Rh-Hg	Air	O-F	5.0	42	22000	20.0	40.0	5.0	10.0	60	25-40	21 3/4	7 1/8	Spl. Mtg.	49	266B
266C	Rh-Hg	Air	O-F	5.0	42	22000	20.0	40.0	5.0	10.0	60	25-40	19 7/8*	7 1/8	Spl. Mtg.	49	266C
267B	Rh-Hg	Air	O-F	5.0	6.75	7500	4.0	8.0	1.0	2.0	15	35-75	8 13/16	2 5/16	138B or 139A	7A	267B
274A	Rf-V	Air	O-F	5.0	2.0	1650	.525	—	.175†	—	—	—	5 5/8	2 3/16	143B	9	274A
274B	Rf-V	Air	O-F	5.0	2.0	1650	.525	—	.175†	—	—	—	5 7/16	2 1/16	Octal	28	274B
301A	Rf-Hg	Air	O-F	5.0	3.0	1800	2	—	1.0†	—	5	20-80	6 1/2	2 7/16	143B	9A	301A
314A	Rf-Hg	Air	O-F	5.0	5.0	300	5	—	2.5†	—	5	20-80	6 1/2	2 7/16	143B	9A	314A
315A	Rh-Hg	Air	O-F	5.0	10.0	12500	4.0	8.0	1.0	2.0	15	25-55	12 1/4	3 7/8	138B or 139A	7A	315A
319A	Rh-Hg	Air	O-F	5.0	6.75	7500	4.0	8.0	1.0	2.0	15	35-75	8 1/2	2 5/16	148A	17	319A
321A	Rh-Hg	Air	O-F	5.0	10.0	12500	4.0	8.0	1.0	2.0	15	25-55	11 7/8	3 7/8	148A	17	321A
345A	Rf-V	Air	H	6.3	1.0	1375	.330	—	.110†	—	—	—	4 1/4	1 9/16	141A	35	345A
351A	Rf-V	Air	H	6.3	1.0	1375	.330	—	.110†	—	—	—	4 1/4	1 9/16	Octal	40	351A
705A	Rh-V	Air	T-F	5.0	5.0	30000	.400	—	.100	—	—	—	5 1/16	2 5/16	152A	69	705A

**Key to Symbols and Abbreviations:**

Amps. — Amperes	H — Heater-Type Cathode	Quad. — Quadrature	T — Thoriated Tungsten	* — Excluding Flexible Leads
Diam. — Diameter	Hg — Mercury	Rf — Full-Wave	Temp. — Temperature	† — Total Output Current for Full-Wave Rectifier
Diss. — Dissipation	Max. — Maximum	Rh — Half-Wave	V — High Vacuum	
F — Filament-Type Cathode	O — Oxide-Coated	Spl. Mtg. — Special Mounting	W — Tungsten	

# Special-Purpose Diodes

Code	Cooling	Cathode			Maximum Peak Inverse Anode Volts	Maximum Anode Amperes		Maximum Anode Dissipation Watts	Anode-Cathode Capacitance mmf.	Maximum Dimensions Inches		Western Electric Socket	Basing Diagram Number	Code
		Type	Volts	Amps.		Peak	Average			Height	Diameter			
380A	Air	H	6.3	.15	500	.0285	.005	—	1.1	1 17/32*	1 3/8	None	62	380A
381A	Air	H	6.3	.15	500	.0285	.005	—	1.4	1 7/8	1 3/8	Octal	61	381A
704A	Air	H	4.5	.50	1500	.050	.010	—	.75	1 5/16*	9/16*	None	63	704A
719A	Air	H	7.0	7.0	25000	10.0	.500	75	7.2	5 7/8	2 9/16	152A	56	719A

## Key to Symbols and Abbreviations:

Amps. — Amperes  
 H — Heater-Type Cathode  
 mmf — Micromicrofarads  
 \* — Excluding Flexible Leads

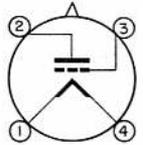
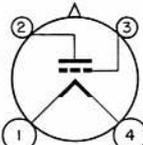
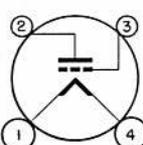
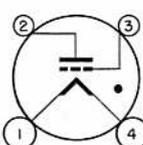
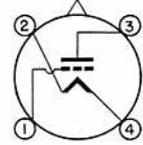
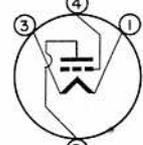
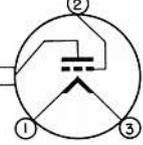
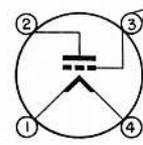
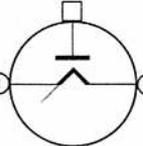
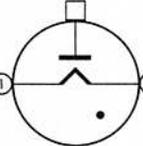
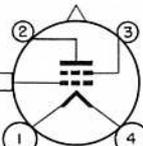
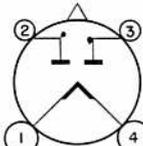
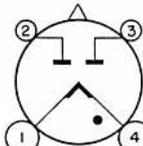
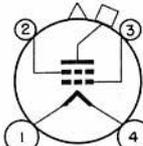
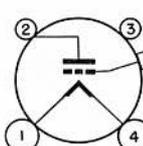
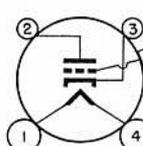
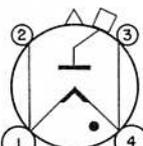
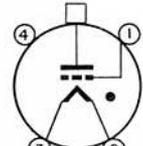
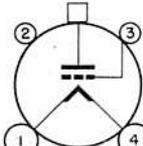
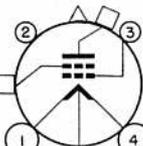
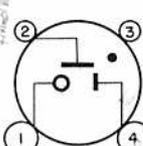
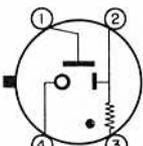
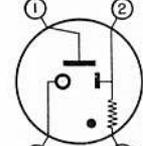
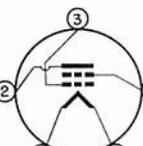
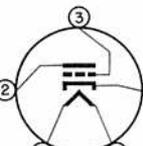
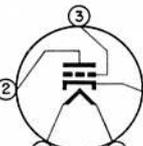
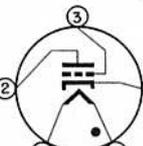
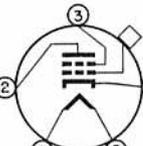
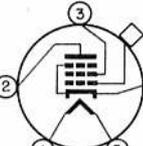
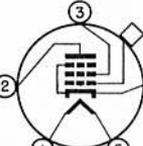
# Thyratrons

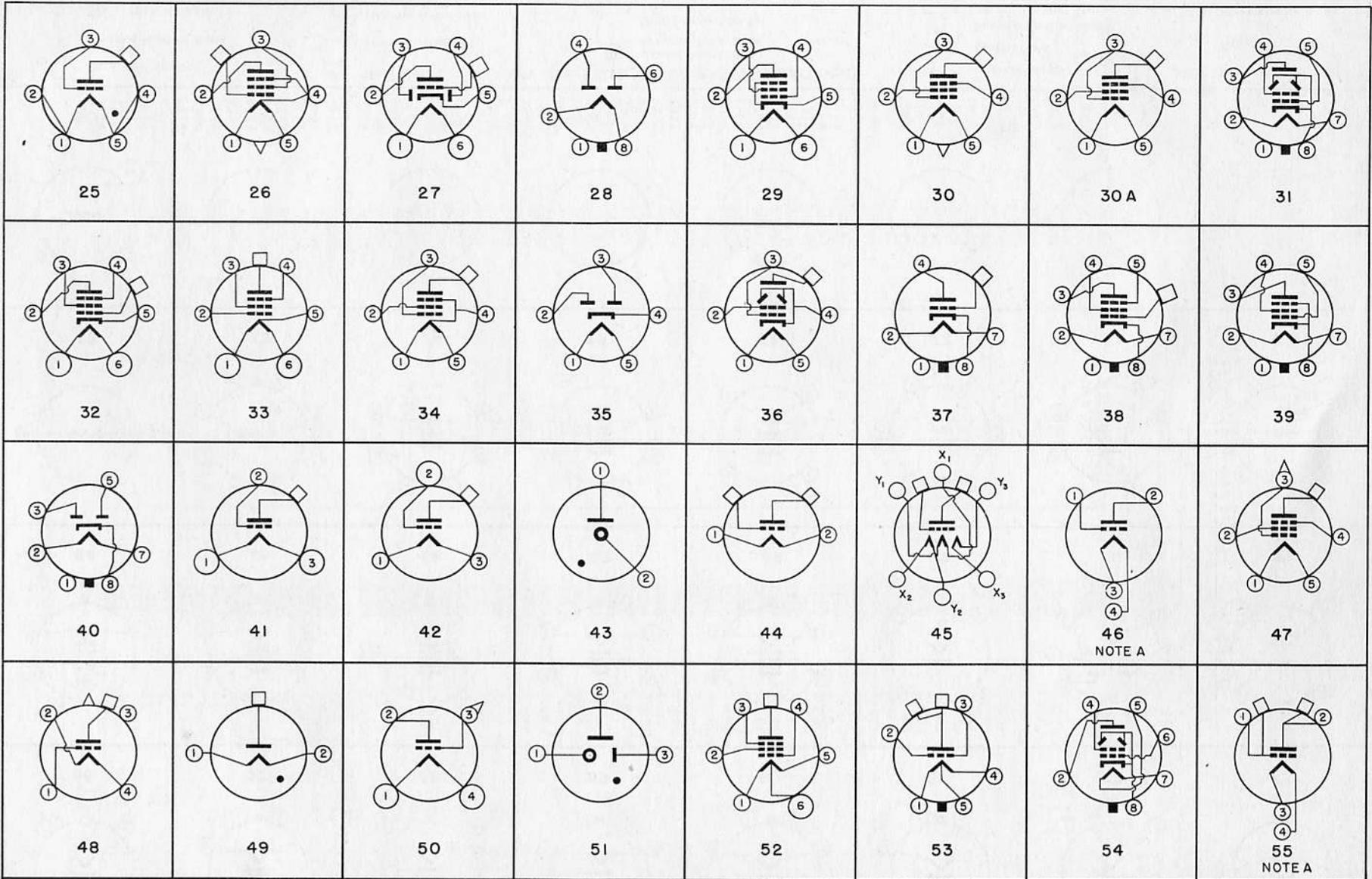
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		Type	Volts	Amps.								Height	Diameter			
256A	A	H	2.3	1.7	0.075	0.075	—	325	-20 to +50	—	1000	4 7/8	1 13/16	141A	22B	256A
269A	A	O-F	2.2	0.55	0.120	0.020	0.5	275	-20 to +50	—	100	4 9/16	1 13/16	143B	2B	269A
287A	Hg	O-F	2.5	7.0	{2.5 6.0	0.64 1.5	5 5	2500 500	— —	+30 to +80 +30 to +80	1000 1000	6 9/16	2 3/16	141A	25	287A
297A	A	O-F	1.75	0.350	0.060	0.010	0.5	250	-20 to +50	—	100	4	1 3/16	143B	2B	297A
323A	A & Hg	O-F	2.5	7.0	6.0	1.5	5	500	—	-20 to +80	1000	6 9/16	2 3/16	141A	25	323A
338A	A	H	10.0	0.5	0.600	0.100	5	325	-20 to +50	—	1000	4 7/16	1 9/16	141A	22B	338A
354A	Hg	O-F	2.5	16.0	16.0	4.0	15	1500	—	+30 to +70	1000	9 1/2	3 3/16	*	14	354A
355A	A & Hg	O-F	2.5	16.0	16.0	4.0	15	350	—	-20 to +80	1000	9 1/2	3 3/16	*	14	355A
393A	A & Hg	O-F	2.5	7.0	6.0	1.5	5	1250	—	-40 to +80	1000	6 5/8	2 1/16	Octal	59	393A
394A	A & Hg	O-F	2.5	3.25	2.5	0.64	5	1250	—	-40 to +80	1000	6	1 25/32	Octal	60	394A

## Key to Symbols and Abbreviations:

Amps. — Amperes  
 A — Argon  
 Aver. — Average  
 Cur. — Current  
 F — Filament-Type Cathode  
 H — Heater-Type Cathode  
 Hg — Mercury  
 Inst. — Instantaneous  
 Max. — Maximum  
 O — Oxide-Coated  
 Temp. — Temperature  
 μsec. — Microseconds  
 \* — Westinghouse S #793202

# BASING DIAGRAMS (VIEWED FROM BOTTOM OF BASE)

 <p>1</p>	 <p>2</p>	 <p>2A</p>	 <p>2B</p>	 <p>3</p>	 <p>4</p>	 <p>5</p>	 <p>6</p>
 <p>7</p>	 <p>7A</p>	 <p>8</p>	 <p>9</p>	 <p>9A</p>	 <p>10</p>	 <p>11</p>	 <p>12</p>
 <p>13</p>	 <p>14</p>	 <p>15</p>	 <p>16</p>	 <p>17</p>	 <p>18</p>	 <p>19</p>	 <p>19 A</p>
 <p>20</p>	 <p>21</p>	 <p>22</p>	 <p>22 A</p>	 <p>22 B</p>	 <p>23</p>	 <p>24</p>	 <p>24 A</p>

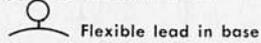


KEY TO SYMBOLS IN BASING DIAGRAMS

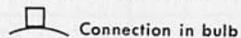
NOTE A: Four base pins in lower half of envelope arranged in T formation



Base pin—small



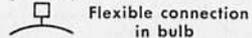
Flexible lead in base



Connection in bulb



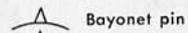
Base pin—large



Flexible connection in bulb

● Gas-Filled

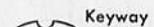
IS Internal shield



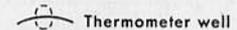
Bayonet pin  
Bayonet and base pin  
in same radial plane



Key

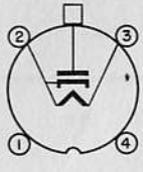
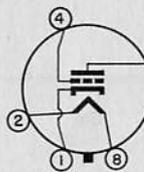
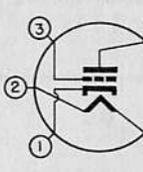
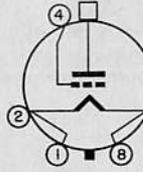
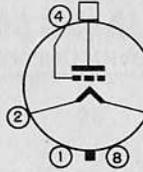
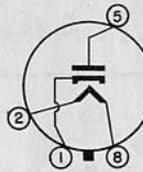
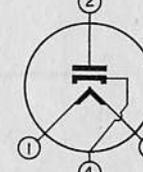
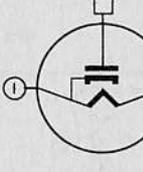
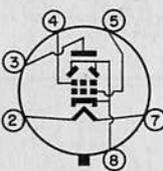
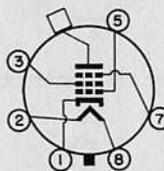
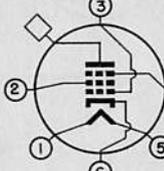
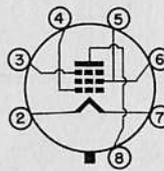
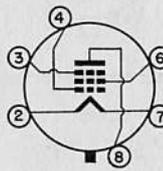
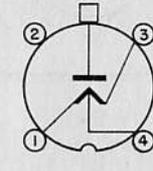
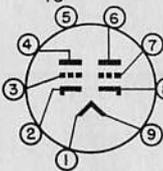
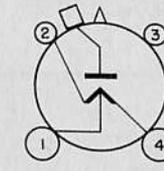
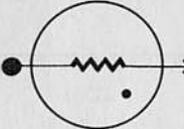
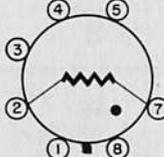
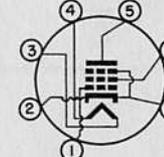
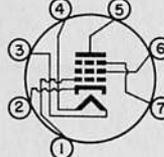
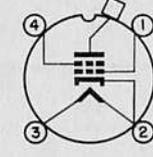
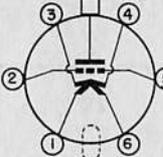
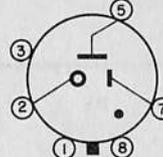
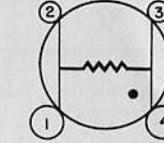
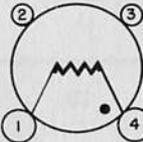
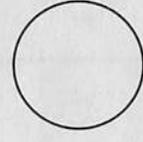
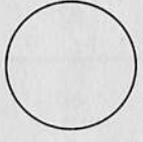
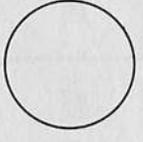
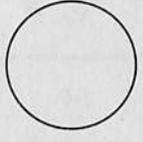
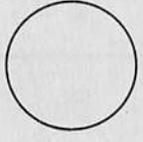
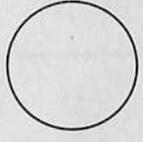
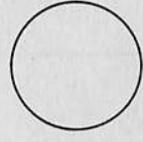


Keyway



Thermometer well

# BASING DIAGRAMS (CONTINUED)

 56	 57	 58	 59	 60	 61	 62	 63
 64	 65	 66	 67	 68	 69	 70	 71
 72	 73	 74	 75	 76	 77	 78	 79
 80							

-  Base pin—small
-  Flexible lead in base
-  Connection in bulb

-  Gas-Filled
-  Base pin—large
-  Flexible connection in bulb

### KEY TO SYMBOLS IN BASING DIAGRAMS

-  Center connection in screw type base
-  Shell connection in screw type base

-  IS Internal shield
-  Bayonet pin
-  Bayonet and base pin in same radial plane

-  Key
-  Keyway
-  Thermometer well

## Discontinued Codes

DISCONTINUED CODE	TYPE	REPLACING CODE	DISCONTINUED CODE	TYPE	REPLACING CODE
101A	Triode	101D	234A	Rectifier	—
101B	Triode	101D	235D	Triode	—
101G	Triode	—	237A	Rectifier	—
101H	Triode	—	239A	Triode	—
101DW	Triode	101D	240A	Triode	240B
102A	Triode	102D	241A	Triode	241B
102DW	Triode	102D	242A	Triode	242C
102E	Triode	102D	242B	Triode	242C
102H	Triode	—	243A	Triode	—
104A	Triode	104D	248A	Triode	—
104C	Triode	—	249A	Rectifier	249B
104DW	Triode	104D	255A	Rectifier	255B
104H	Triode	—	258A	Rectifier	258B
104G	Triode	—	260A	Tetrode	—
105A	Triode	205F	261A	Triode	276A
112A	Triode	212E	262A	Triode	262B
113A	Triode	242C	264A	Triode	264C
115A	Triode	215A	264B	Triode	264C
117AW	Rectifier	—	265A	Triode	—
118AW	Triode	—	266A	Rectifier	266B
201A	Triode	—	267A	Rectifier	267B
201B	Triode	102D	280A	Rectifier	—
203A	Triode	—	282B	Tetrode	282A
203B	Triode	—	284A	Triode	284D
203C	Triode	—	284B	Triode	284D
203D	Triode	—	288A	Rectifier	—
205A	Triode	205F	289A	Rectifier	—
205B	Triode	205F	292A	Duplex-Diode Triode	352A
205D	Triode	205F	300A	Triode	300B
205E	Triode	205F	302A	Cathode Ray Tube	—
208A	Triode	101D	304A	Triode	—
208C	Triode	—	304B	Triode	—
209A	Triode	102D	308A	Triode	308B
210A	Triode	104D	313A	Cold Cathode Gas Triode	313C
211A	Triode	242C	313B	Cold Cathode Gas Triode	313CA
211D	Triode	—	313AA	Cold Cathode Gas Triode	313CA
211E	Triode	242C	325A	Cathode Ray Tube	—
212A	Triode	212E	325B	Cathode Ray Tube	—
212D	Triode	212E	325C	Cathode Ray Tube	—
214A	Rectifier	—	326A	Cathode Ray Tube	—
214D	Rectifier	—	326B	Cathode Ray Tube	—
216A	Triode	—	326C	Cathode Ray Tube	—
217A	Rectifier	—	327A	Rectifier	—
219A	Rectifier	—	330A	Cathode Ray Tube	—
219D	Rectifier	—	330B	Cathode Ray Tube	—
220A	Triode	220C	330C	Cathode Ray Tube	—
220B	Triode	220C	334A	Thyratron	—
221D	Triode	—	335A	Thyratron	—
222B	Rectifier	222A	346A	Cold Cathode Gas Triode	346B
223A	Triode	—	356A	Triode	356B
224A	Cathode Ray Tube	—	360A	Pentode	—
224B	Cathode Ray Tube	—	361A	Pentode	—
224C	Cathode Ray Tube	—	362A	Pentode	—
225A	Triode	—	365A	Rectifier	—
226A	Rectifier	—	CW 931	(Same as 205B)	205F
227A	Diode	—	CW 933	(Same as 203B)	—
229D	Triode	—	VT 1	(Same as 203B)	—
232A	Triode	232B	VT 2	(Same as 205A)	205F
233B	Rectifier	233A	VT 5	(Same as 215A)	215A

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