

RCA TRANSMITTING-TUBE TYPES -Limited Listing*

Data

* FOR DETAILED DATA ON TYPES NOT LISTED IN THESE CHARTS, REFER TO INDIVIDUAL DATA SHEETS IN THE TRANSMITTING TUBE SECTION

These charts are arranged in three parts and contain in the order listed:

1. Data (pages 1 - 7),
2. Terminal Diagrams (pages 7 - 9),
3. Dimensional Outlines — with Maximum Envelope Temperatures (pages 10 - 18).

VACUUM POWER TUBES FOR CW APPLICATIONS (Unless Otherwise Specified^a)

RCA TYPE	DESCRIPTION & COOLING METHOD C-Conduction FA-Forced Air L-Liquid N-Natural W-Water		FILA- MENT (F) OR HEATER		CLASS C TELEGRAPHY (CCS) UNLESS OTHERWISE SPECIFIED UNDER MAXIMUM PLATE VOLTS											
					FREQ FOR FULL INPUT MC	MAXIMUM RATINGS							AMPLI-FICATION OR MU FACTOR	TYPICAL OPERATION		
						PLATE VOLTS	GRID-NO. 2 VOLTS	Grid-NO. 1 VOLTS	PLATE MA	GRID-NO. 2 INPUT WATTS	GRID-NO. 1 CURRENT IN MA OR INPUT (W) IN WATTS	PLATE DISSIPATION WATTS		FREQ MC	DRIVER OR DRIVING (T) POWER WATTS	POWER OUTPUT WATTS
2C39A	Triode	FA	6.3	1	2500	1000		-150	125		50	100	100			
2C39WA	Triode	FA	6	1	2500	For data, refer to MIL-E-1/778E (Navy) Specification										
2C40	Lighthouse Triode	N	6.3	0.75	3370	500		-50	25		8	6.5				
2C40A ^a	Lighthouse Triode	N	6.3	0.75	3370	500		-50	25		8	6.5				
2C43	Lighthouse Triode	N	6.3	0.9	1500	500			40			12				

^a Type 3C33 for Modulators, types 3E29, 3E29A, 4610 for Regulators, type 2C40A for CW and RF-Pulse Applications.



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				FREQ FOR FULL INPUT MC	MAXIMUM RATINGS							AMPLI-FICATION OR MU FACTOR				
					PLATE VOLTS	GRID-NO.2 VOLTS	GRID-NO.1 VOLTS	PLATE MA	GRID-NO.2 INPUT WATTS	GRID-NO.1 CURRENT IN MA OR INPUT (W) IN WATTS	PLATE DISSIPATION WATTS		FREQ MC	DRIVER OR DRIVING (T) POWER WATTS	POWER OUTPUT WATTS	
2E24	Beam Pwr. Tube ^b	N	6.3F	0.65	125	500	200	-175	75	2.5	3.5	10	7.5	125	0.2T	20
2E26	Beam Pwr. Tube	N	6.3	0.8	125	500	200	-175	75	2.5	3.5	10	6.5	125	0.15T	20
3C33 ^a	Twin Triode	N	12.6	1.125		±2000 ^c			120			15	11			
3E29 ^a	Twin Beam Power Tube	N	6.3	2.25		5000	850	-225	10 ^c	3	1W	15	9			40 ^c
3E29A ^a		N	12.6	1.125		Max "ON" Time: 12 μsec. Typical } Pulse duration: 1.2 μsec. Time Interval: 1200 μsec. Operation } Duty factor: 0.001 Peak Plate Volts: 5750 (3E29), 7500 (3E29A)										
4-125A/4D21	Beam Pwr. Tube	FA	5F	6.5	120	3000	400	-500	225	20	5W	125				
4-250A/5D22	Beam Pwr. Tube	FA	5F	14.5	75	4000	600	-500	350	35	10W	250				
4E27A/5-125B	Beam Pwr. Tube	N	5F	7.5	75	4000	750	-500	200	20	5W	125				
4X500A	Beam Pwr. Tube	FA	5F	12.2 to 13.7	120	4000	500	-500	350	30	10W	500				
8D21	Twin Tetrode	W	3.2F	125	300	6000	1000	-1000	2000	400	50W	6000	5	300	500T	6500
9C21	Triode	W	19.5F	415	15	17,000		-2000	9000		1500	40,000	40	15	1800T	100,000

^a Type 3C33 for Modulators, types 3E29, 3E29A, 4610 for Regulators, type 2C40A for CW and RF-Pulse Applications.

^b Quick-heating type less than 2-second filament heating time.

^c Peak value.

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					FREQ FOR FULL INPUT MC	MAXIMUM RATINGS							AMPLIFICATION OR MU FACTOR	TYPICAL OPERATION		
						PLATE VOLTS	GRID-NO.2 VOLTS	GRID-NO.1 VOLTS	PLATE MA	GRID-NO.2 INPUT WATTS	GRID-NO.1 CURRENT IN MA OR INPUT (W) IN WATTS	PLATE DISSIPATION WATTS		FREQ MC	DRIVER OR DRIVING (T) POWER WATTS	POWER OUTPUT WATTS
VOLTS	AMP															
9C22	Triode	FA	19.5F	415	5	17,000		-2000	8000		1500	20,000	41	5	1450T	65,000
207	Triode	W	22F	52	1.6	15,000		-3000	2000		200	10,000	20	1.6	235T	15,000
801A	Triode	N	7.5F	1.25	60	600		-200	70		15	20	8	60	4T	25
802	Pentode	N	6.3	0.9	30	500	250	-200	60	6	7.5	10		30	0.25T	16
803	Pentode	N	10	5	20	2000	600	-500	175	30	50	125		20	2T	210
805	Triode	N	10F	3.25	30	1500		-500	210		70	125		30	8.5T	215
807	Beam Pwr. Tube	N	6.3	0.9	60	600	300	-200	100	3.5	5	25	8	60	0.3	40
809	Triode	N	6.3F	2.5	60	750		-200	100		35	25	50	60	2.5T	55
810	Triode	N	10F	4.5	30	2000		-500	250		70	125	36	30	12T	375
813	Beam Pwr. Tube	N	10F	5	30	2000	400	-300	180	22	25	100	8.5	30	1.9T	275
814	Beam Pwr. Tube	N	10F	3.25	30	1250	400	-300	150	10	15	50		30	1.5T	130
815	Twin Beam Power Tube	N	6.3 12.6	1.6 0.8	125	400	225	-175	150	4.5	7	20	6.5	125	0.23T	44
827R	Beam Pwr. Tube	FA	7.5F	25	110	3500	1000	-500	500	150	150	800	16	110	50T	1050
828	Beam Pwr. Tube	N	10F	3.25	30	1250	400	-300	160	16	15	70		30	2.1T	150



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					FREQ FOR FULL INPUT MC	MAXIMUM RATINGS							AMPLI- FICA- TION OR MU FACTOR	TYPICAL OPERATION		
						PLATE VOLTS	GRID- NO.2 VOLTS	GRID- NO.1 VOLTS	PLATE MA	GRID- NO.2 INPUT WATTS	GRID- NO.1 CURRENT IN MA OR INPUT (W) IN WATTS	PLATE DISSI- PATION WATTS		FREQ MC	DRIVER OR DRIV- ING (T) POWER WATTS	POWER OUTPUT WATTS
829B	Twin Beam Power Tube	FA	6.3 12.6	2.25 1.125	200	750	225	-175	240	7	15	40	9	200	0.4T	90
		N	6.3 12.6	2.25 1.125												
830B	Triode	N	10F	2	15	1000		-300	150		30	60	25	15	7T	90
832A	Twin Beam Power Tube	N	6.3 12.6	1.6 0.8	200	750	250	-175	90	5	6	15	6.5	200	0.19T	26
834	Triode	N	7.5F	3.1	100	1250		-400	100		20	50	10.5	100	4.5T	75
837	Pentode	N	12.6	0.7	20	500	200	-200	80	8	8	12		20	0.4T	22
845	Triode	N	10F	3.25		1250 ^d		-400	120			150	5.3			115
860	Tetrode	N	10F	3.25	30	3000	500	-800	150	10	40	100		30	7T	165
880	Triode	W	12.6F	320	1.5	15,000		-1600	4500		1000	20,000	20	1.5	880T	50,000
889A	Triode	W	11F	125	50	8500		-1000	2000		250	5000	21	50	400T	10,000
889RA	Triode	FA	11F	125	40	8500		-1000	2000		250	5000	21	40	400T	10,000
891	Triode	W	22F	60	1.6	12,000		-3000	2000		150	6000	8.5	1.6	375T	10,000
891R	Triode	FA	22F	60	1.6	10,000		-3000	2000		150	4000	8.5	1.6	375T	10,000
892	Triode	W	22F	60	1.6	15,000		-3000	2000		400	10,000	50	1.6	565T	14,000
892R	Triode	FA	22F	60	1.6	12,500		-3000	2000		400	4000	50	1.6	495T	10,000
1613	Pentode	N	6.3	0.7	45	350	275	-100	50	2.5	5	10		45	0.22T	9

^d Class AB. AF Power Amplifier

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					FREQ FOR FULL INPUT MC	MAXIMUM RATINGS								AMPLIFICATION OR MU FACTOR	TYPICAL OPERATION	
						PLATE VOLTS	GRID-NO.2 VOLTS	GRID-NO.1 VOLTS	PLATE MA	GRID-NO.2 INPUT WATTS	GRID-NO.1 CURRENT IN MA OR INPUT (W) IN WATTS	PLATE DISSIPATION WATTS	FREQ MC		DRIVER OR DRIVING (T) POWER WATTS	POWER OUTPUT WATTS
VOLTS	AMP															
1614	Beam Pwr. Tube	N	6.3	0.9	80	375	300	-125	110	3.5	5	21		80	0.1T	21
1619	Beam Pwr. Tube	N	2.5F	2	45	400	300	-125	75	3.5	5	15		45	0.36T	19.5
1624	Beam Pwr. Tube	N	2.5F	2	60	600	300	-200	90	3.5	5	25		60	0.43T	35
1625	Beam Pwr. Tube	N	12.6	0.45	60	600	300	-200	100	3.5	5	25	8	60	0.3T	40
1626	Triode	N	12.6	0.25	30	250		-150	25		8	5	5	30	0.5T	4
4610 ^a	Twin Triode	N	6.3 12.6	2.25 1.125		3000			100			30				
5556	Triode	N	4.5F	1.1	6	350		-150	40		10	10				
5713	Triode	FA	3.3	11.5	220	1500		-250	300		50	250	25	220	8T	290
5786	Triode	FA	11F	12.5	160	3000		-500	500		150	600	32	160	36T	1000
6146 ^e	Beam Pwr. Tube	N	6.3	1.25	60	600	250	-150	140	3	3.5	20	4.5	60	0.2T	52
6146A ^e	Beam Pwr. Tube	N	6.3	1.25	60	600	250	-150	140	3	3.5	25	4.5		0.2T	52
6155	Beam Pwr. Tube	FA	5F	6.5	120	3000	400	-500	225	20	15	125				

^a Type 3C33 for Modulators, types 3E29, 3E29A, 4610 for Regulators, type 2C40A for CW and RF-Pulse Applications.

^e For detailed data on later version of this type refer to 6146B/8298A data sheets, located in the TRANSMITTING TUBE SECTION.



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					FREQ FOR FULL INPUT MC	MAXIMUM RATINGS							AMPLI- FICA- TION OR MU FACTOR	TYPICAL OPERATION		
						PLATE VOLTS	GRID- NO.2 VOLTS	GRID- NO.1 VOLTS	PLATE MA	GRID- NO.2 INPUT WATTS	GRID- NO.1 CURRENT IN MA OR INPUT (W) IN WATTS	PLATE DISSI- PATION WATTS		FREQ MC	DRIVER OR DRIV- ING (T) POWER WATTS	POWER OUTPUT WATTS
6156	Beam Pwr. Tube	FA	5F	14.1	75	4000	600	-500	350	35	20	250				
6159	Beam Pwr. Tube	N	26.5	0.3	60	600	250	-150	140	3	3.5	20	4.5	60	0.2T	52
6181	Beam Pwr. Tube	FA	120 Max.	1.6	900	2000	500	-300	1250	40	200	2000	7	900	150	600
6883 ^f	Beam Pwr. Tube	N	12.6	0.625	60	600	250	-150	140	3	3.5	20	4.5	60	0.2	52
6893	Beam Pwr. Tube	N	12.6	0.4	125	500	200	-175	75	2.5	3.5	10	6.5	125	0.15	20
6897	Lighthouse Triode	FA	6.3	1.03	2500	1000		-150			50W	100				
7271	Beam Pwr. Tube	FA	13.5	1.25	60	1100	425	-300	340	20	25	60	8	60	4	160
8000	Triode	N	10F	4.5	30	2000		-500	250		40	125	16.5	30	8T	375
8005	Triode	N	10F	3.25	60	1250		-200	200		45	75	20	60	6.5T	170
8032	Beam Pwr. Tube	N	13.5	0.585	60	600	250	-150	140	3	3.5	20	4.5	60	0.2	52
8165/ 4-65A	Beam Pwr. Tube	FA	6	3.2 to 3.8	150	3000	400	-500	150	10	5W	65				
8166/ 4-1000A	Beam Pwr. Tube	FA	7.5F	20 to 22.7	110	6000	1000	-500	700	75	25W	1000				
8168/ 4CX1000A	Beam Pwr. Tube	FA	6.0	8.1 to 9.9	110	3000 ^g	400		1000	12	0W	1000				

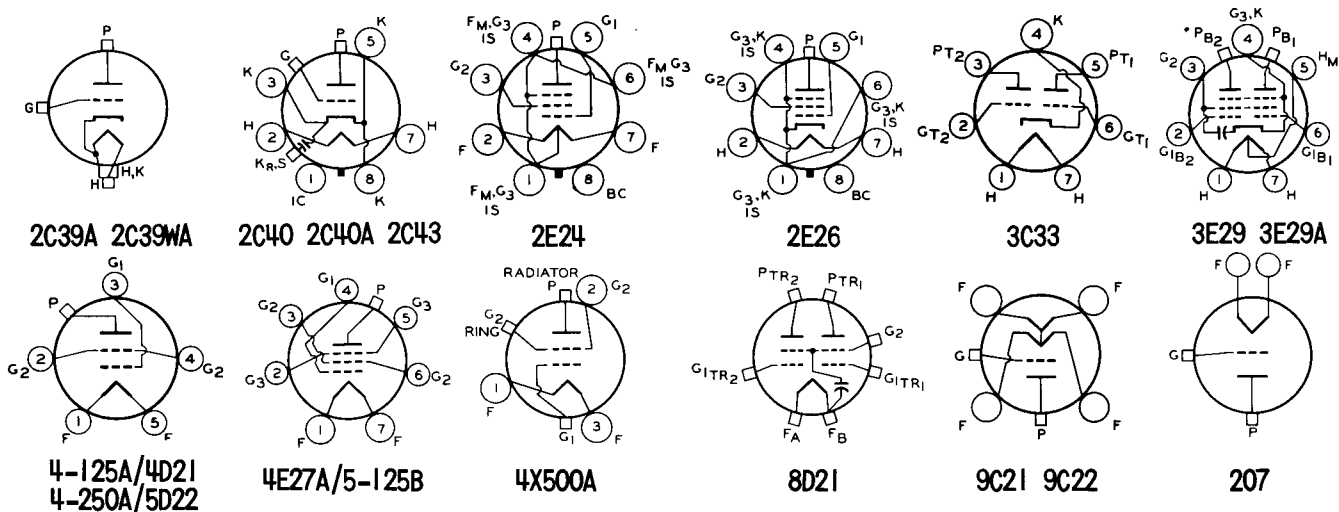
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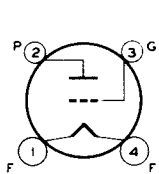
Data

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				FREQ FOR FULL INPUT MC	MAXIMUM RATINGS							AMPLIFICATION OR MU FACTOR	TYPICAL OPERATION		
					PLATE VOLTS	GRID-NO.2 VOLTS	GRID-NO.1 VOLTS	PLATE MA	GRID-NO.2 INPUT WATTS	GRID-NO.1 CURRENT IN MA OR INPUT (W) IN WATTS	PLATE DISSIPATION WATTS		FREQ MC	DRIVER OR DRIVING (T) POWER WATTS	POWER OUTPUT WATTS
8170/ 4CX5000A	Beam Pwr. Tube	FA	7.5	73 to 78	30	7500	1500		3000	250	75W	5000			
8239/ 3X3000F1	Triode	FA	7.5	49 to 54		6000 ^d			2500		50W	3000			
8438/ 4-400A	Beam Pwr. Tube	FA	5	14.5	110	4000	600	-500	350	35	10W	400			

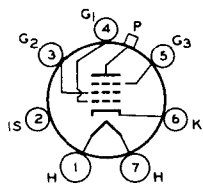
^f For detailed data on later version of this type refer to 6883B/8032A/8552 and 6146B data sheets, located in the *TRANSMITTING TUBE SECTION*. ^g Linear RF Power Amplifier service, plate current at peak envelope conditions.

TERMINAL DIAGRAMS

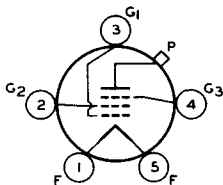




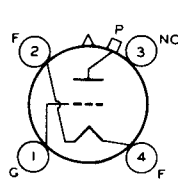
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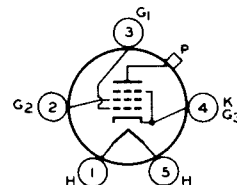
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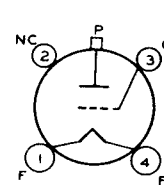
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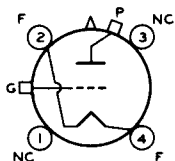
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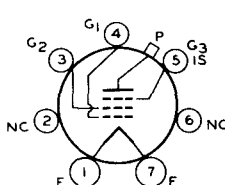
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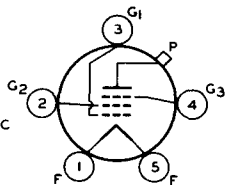
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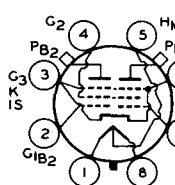
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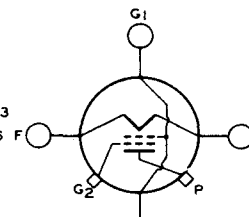
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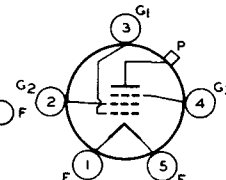
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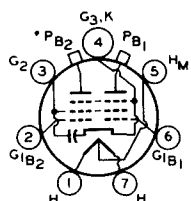
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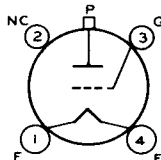
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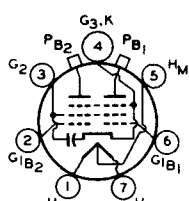
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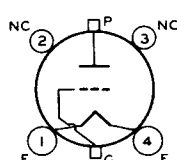
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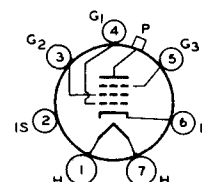
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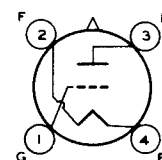
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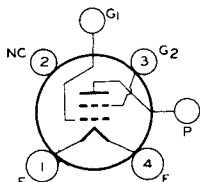
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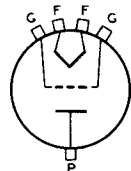
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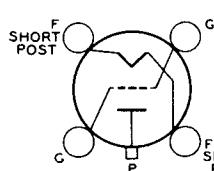
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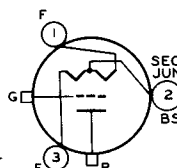
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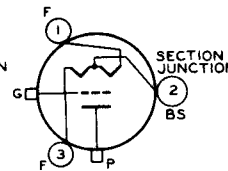
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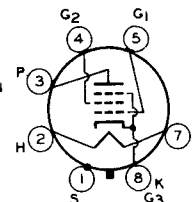
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891 891R



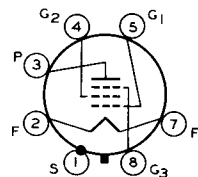
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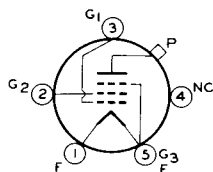
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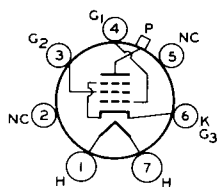
Terminal Diagrams



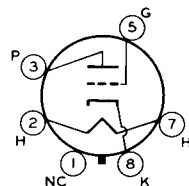
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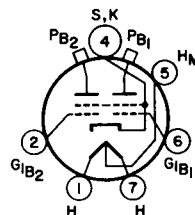
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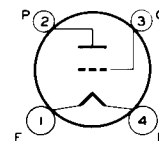
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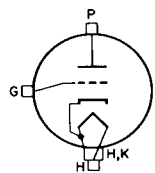
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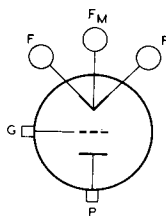
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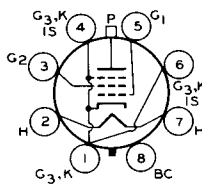
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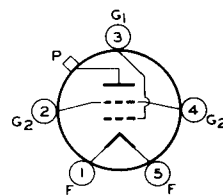
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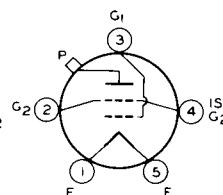
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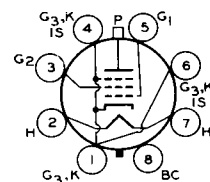
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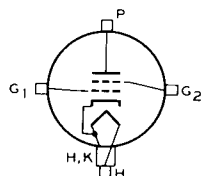
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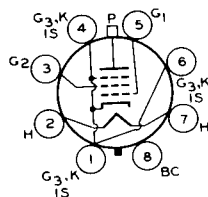
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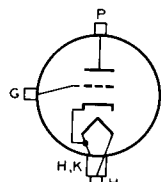
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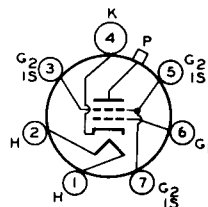
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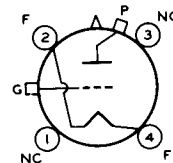
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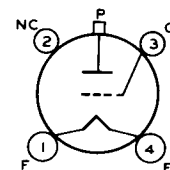
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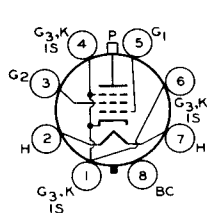
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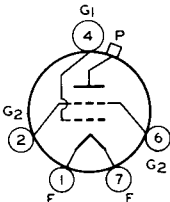
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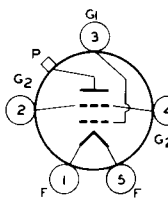
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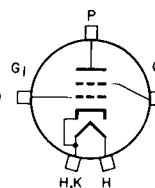
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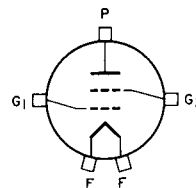
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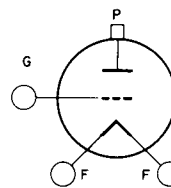
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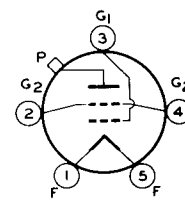
8168/4CX1000A



8170/4CX5000A



8239/3X3000F1



8438/4-400A



MAXIMUM ENVELOPE TEMPERATURES and KEY TO DIMENSIONAL OUTLINES

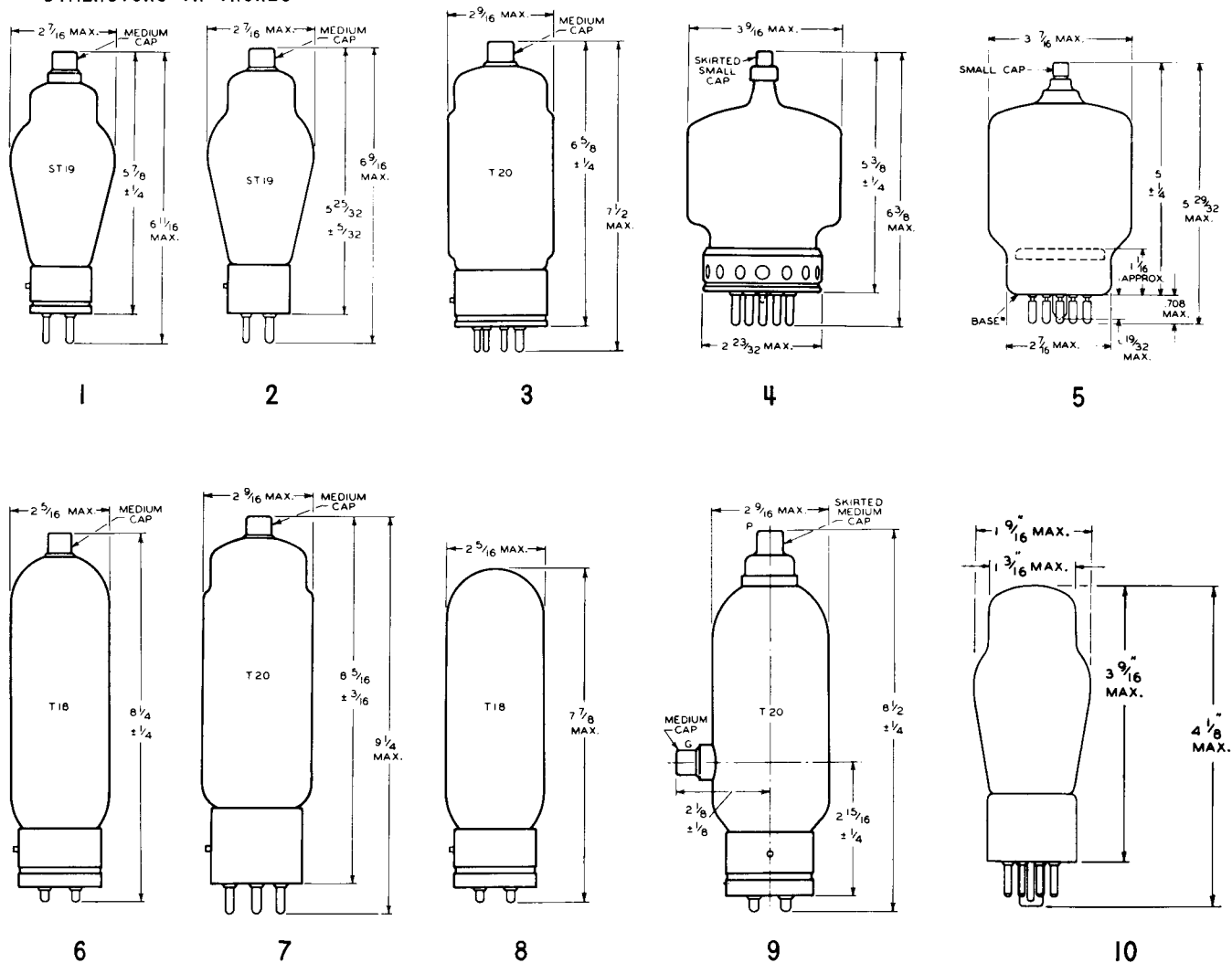
Tube Type	Max. Envelope Temperature °C		Key No.	Tube Type	Max. Envelope Temperature °C		Key No.	Tube Type	Max. Envelope Temperature °C		Key No.
	Term. or Rad.	Bulb or Plate Core			Term. or Rad.	Bulb or Plate Core			Term. or Rad.	Bulb or Plate Core	
2C39A	175	175	51	813	-	-	3	4610	-	-	16
2C39WA	200	200	51	814	-	-	24	5556	-	-	43
2C40	175	175	29	815	-	-	19	5713	140	180	53
2C40A	175	175	29	827R	175	150	45	5786	165		
2C43	200	200	30	828	-	-	24		200 ^b	180	28
2E24	-	210	33	829B	-	235 ^c 265 ^d	16	6146	-	220	14
2E26	-	210	33	830B	-	-	15	6146A	-	220	13
3C33	-	250	32	832A	-	200	31	6155	180	220	21
3E29	-	-	16	834	-	-	52	6156	180	220	5
3E29A	-	-	16	837	-	-	11	6159	-	220	14
4-125A/4D21	170	170	17	845	-	-	8	6181	180	-	26
4-250A/5D22	170	170	4	860	-	-	35	6883	-	220	13
4E27A/5-125B	225	225	20	880	150	150	39	6893	-	210	33
4X500A	150	150	50	889A	-	-	22	6897	250	250	49
8D21	150	150	46	889RA	180	150	37	7271	-	250	44
9C21	165	180	40	891	-	150	23	8000	-	-	9
9C22	165	180	34	891R	180	150	36	8005	-	-	1
207	-	Note ^a	38	892	-	150	23	8032	-	220	13
801A	-	-	12	892R	180	150	36	8165/4-65A	200	225	18
802	-	-	11	1613	-	-	42	8166/4-1000A	150	200	41
803	-	-	7	1614	-	-	25	8168/4CX1000A	250	250	48
805	-	-	6	1619	-	-	25	8170/4CX5000A	250	250	27
807	-	-	11	1624	-	-	11	8239/3X3000FI	-	-	47
809	-	-	2	1625	-	-	11	8438/4-400A	200	225	4
810	-	-	9	1626	-	-	10				

^a Outlet water temperature, 70°C max.^b Filament temperature.^c Forced-air cooling.^d Natural cooling.

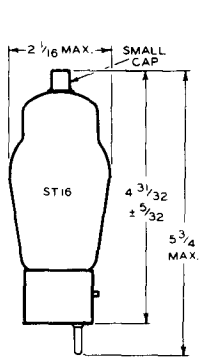
RCA TRANSMITTING-TUBE TYPES -Limited Listing

Dimensional Outlines

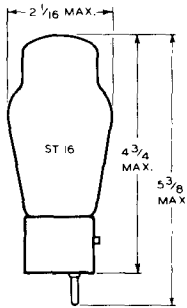
DIMENSIONS IN INCHES



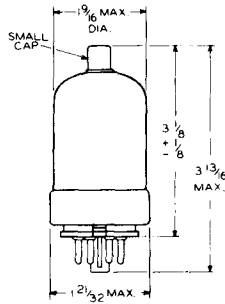
DIMENSIONS IN INCHES



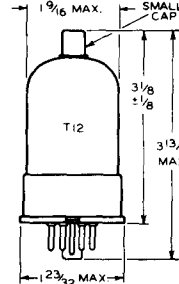
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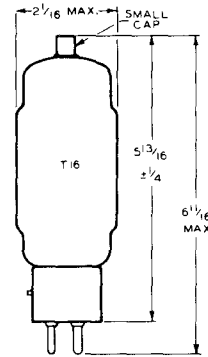
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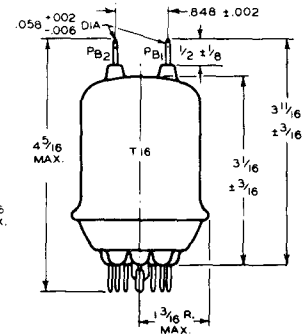
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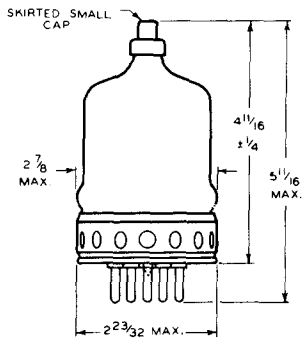
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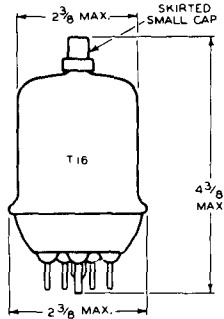
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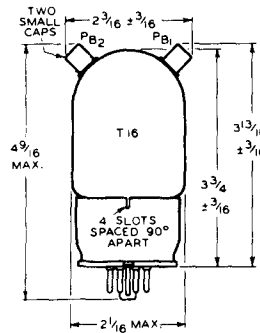
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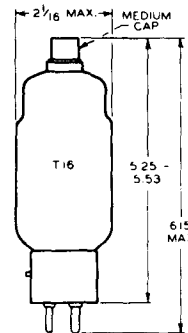
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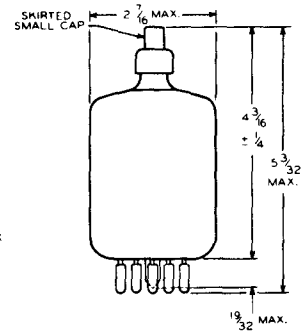
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19



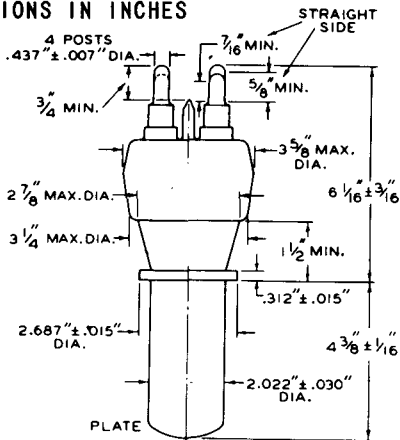
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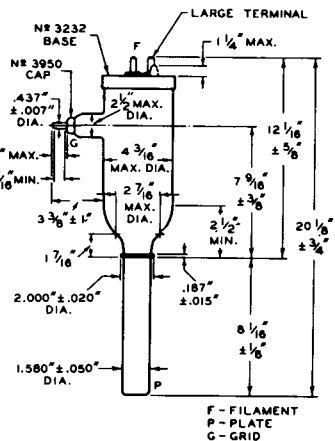
21

RCA TRANSMITTING-TUBE TYPES - Limited Listing Dimensional Outlines

DIMENSIONS IN INCHES

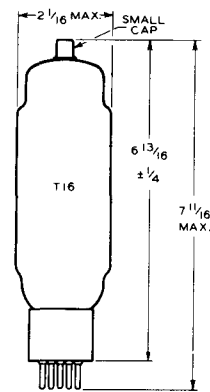


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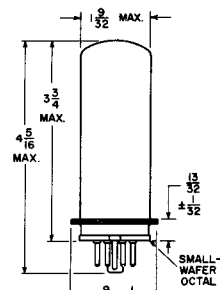


F - FILAMENT
P - PLATE
G - GRID

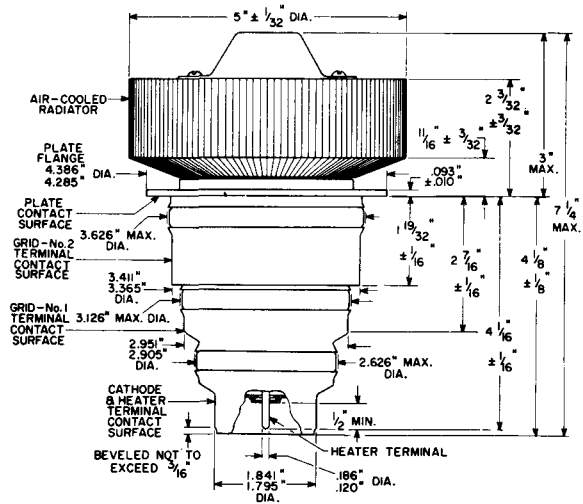
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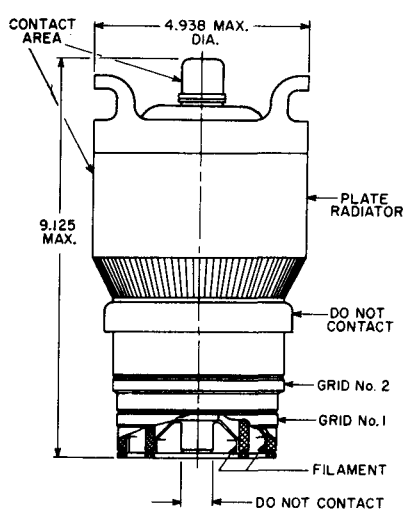
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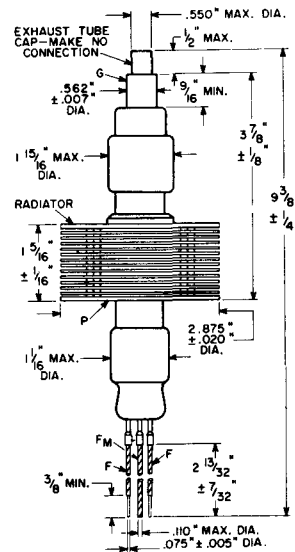
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26



27

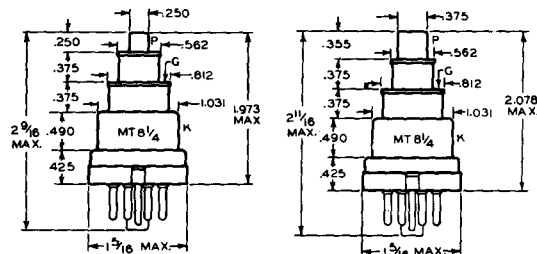


28



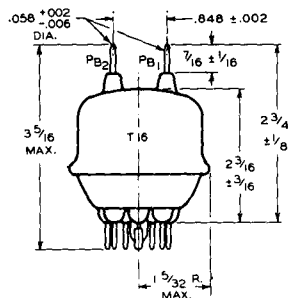
RCA TRANSMITTING-TUBE TYPES-Limited Listing Dimensional Outlines

DIMENSIONS IN INCHES

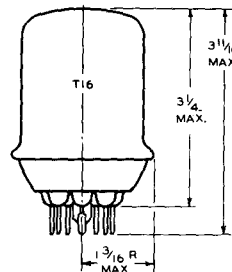


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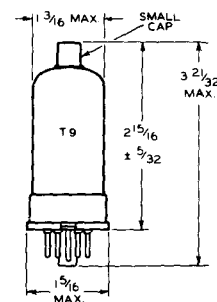
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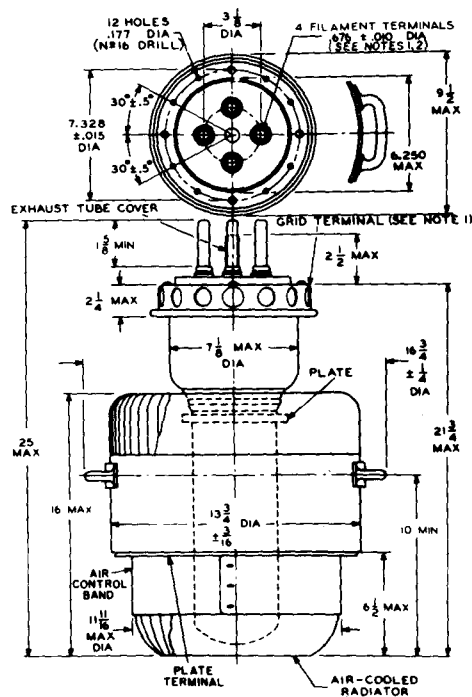
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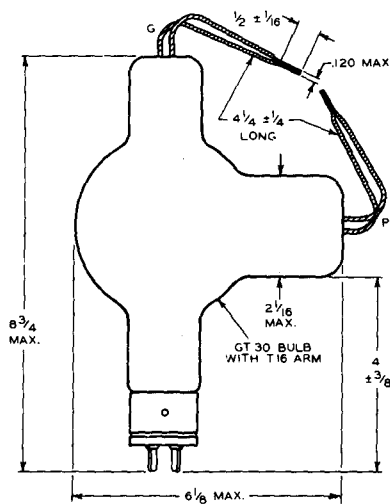
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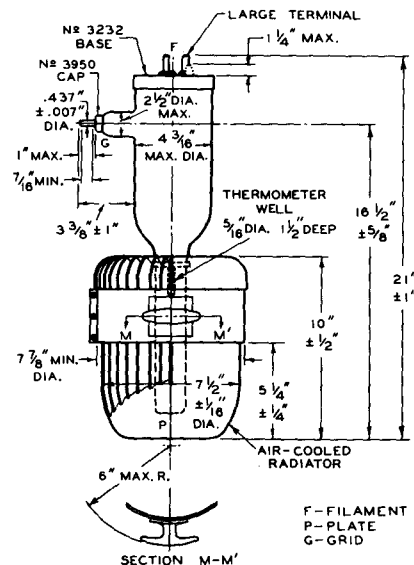
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34



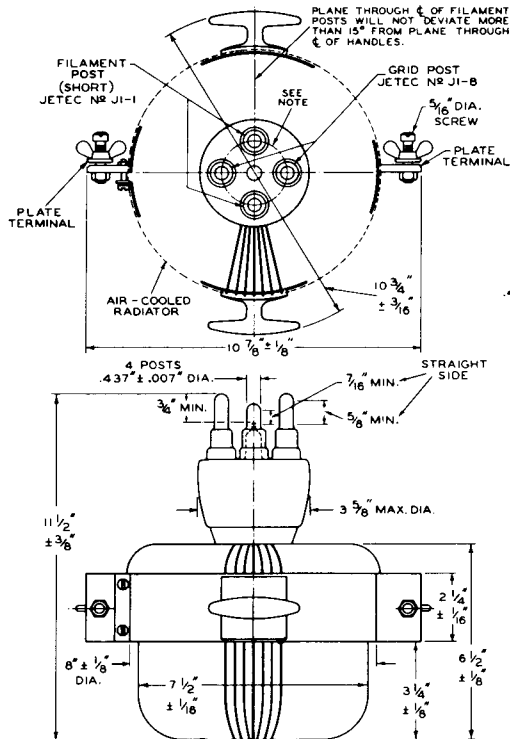
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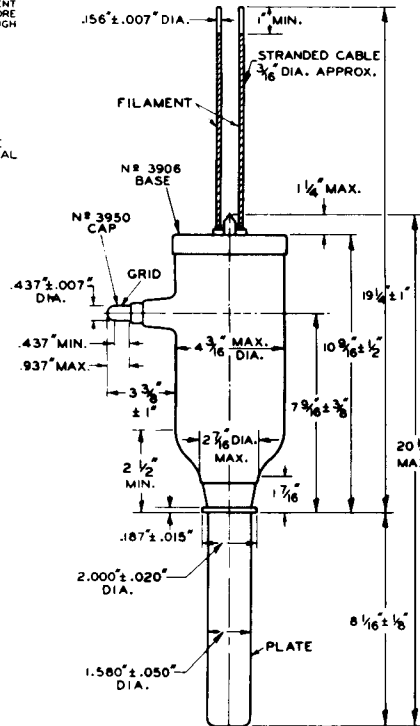
36

RCA TRANSMITTING-TUBE TYPES-Limited Listing Dimensional Outlines

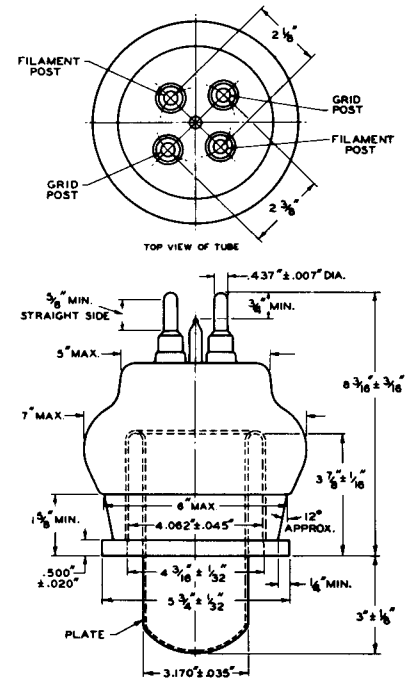
DIMENSIONS IN INCHES



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38

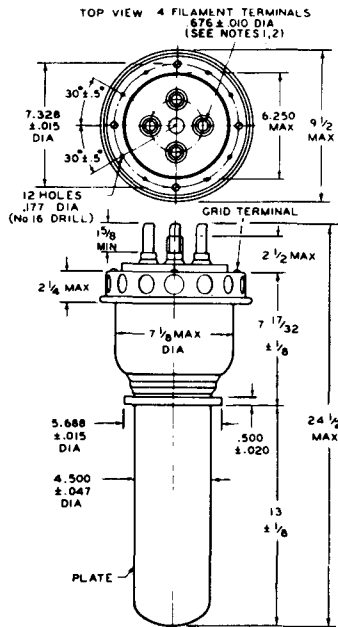


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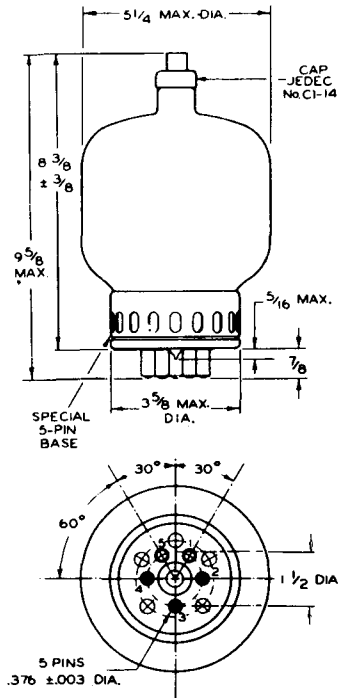


RCA TRANSMITTING-TUBE TYPES-Limited Listing Dimensional Outlines

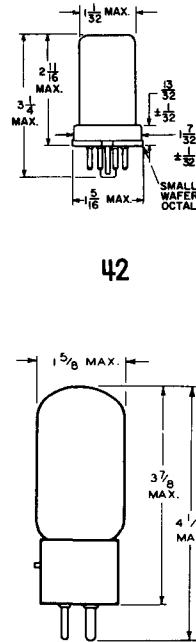
DIMENSIONS IN INCHES



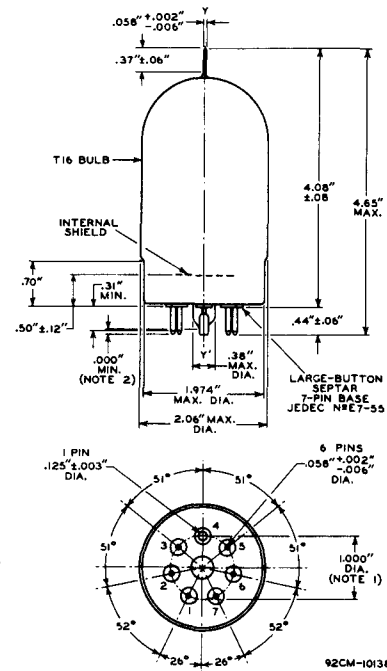
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41



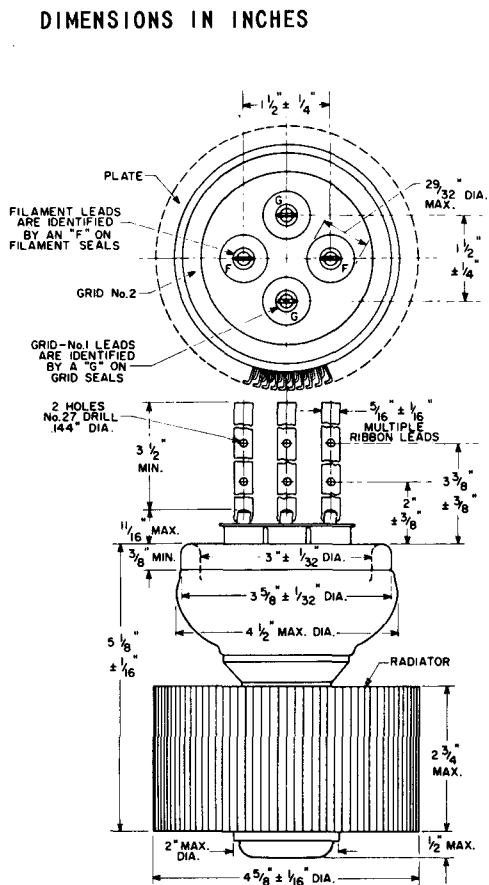
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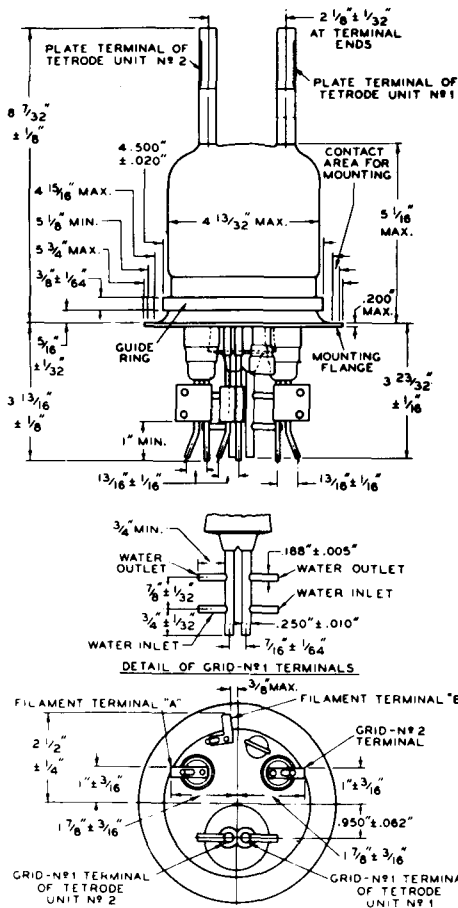
44

RCA TRANSMITTING-TUBE TYPES - Limited Listing Dimensional Outlines

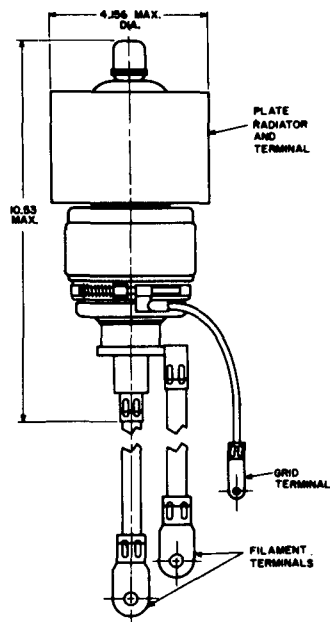
DIMENSIONS IN INCHES



45

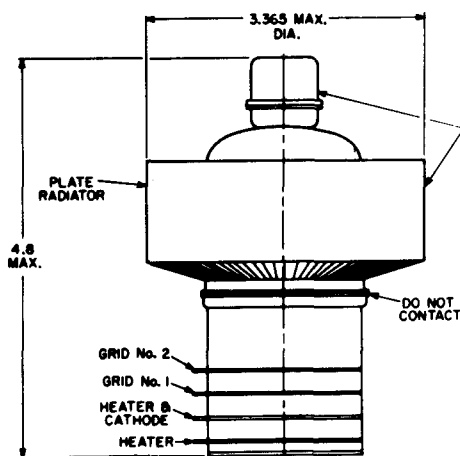


46



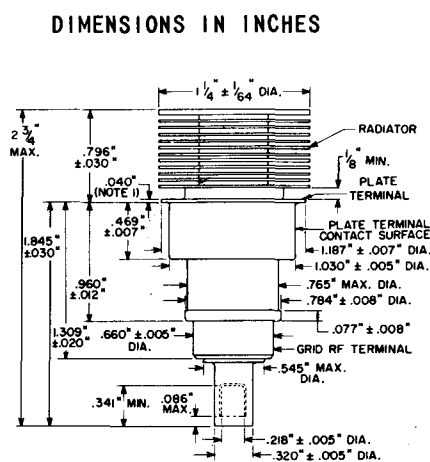
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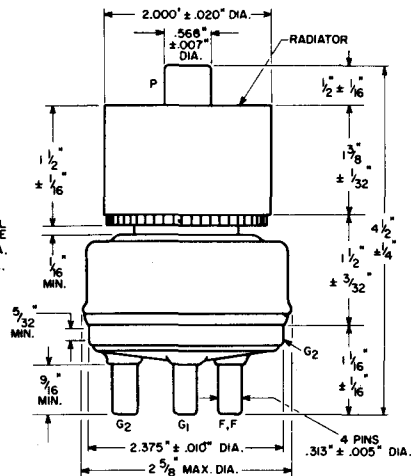


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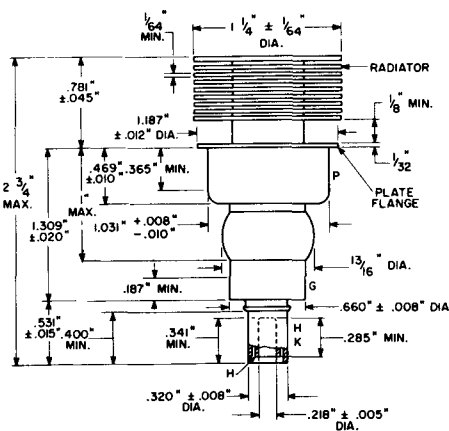
DIMENSIONS IN INCHES



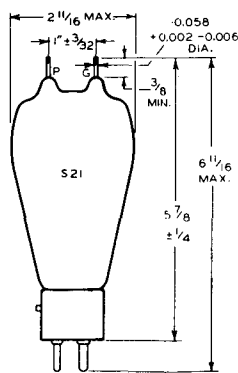
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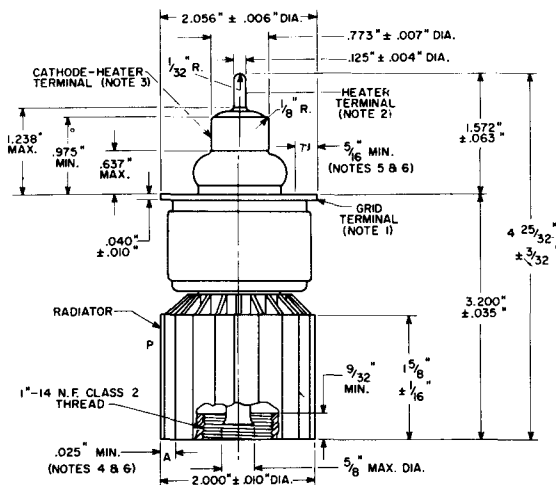
50



51



52



53