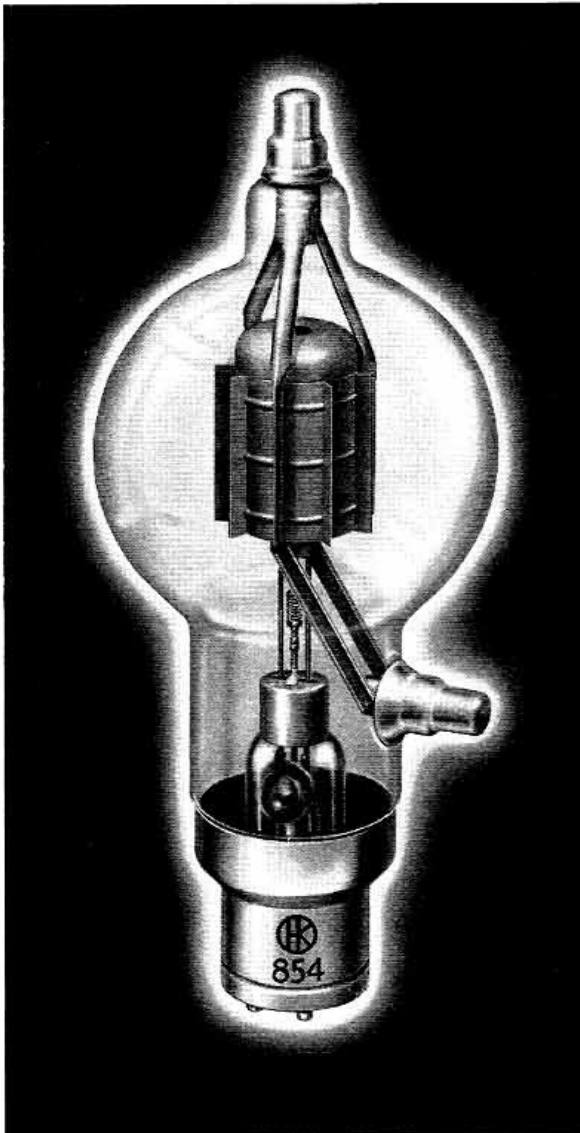


# GAMMATRON TYPE 854



## GENERAL PURPOSE TRIODE

General purpose, 450 watt radiation cooled triode, available in two amplification factors: Low mu 16 and High mu 30. Exceptional VHF performance and ability to stand high voltages.

### PHYSICAL DATA

Plate . . . . .	Cylindrical Tantalum
Grid . . . . .	Braced Vertical Bar Tantalum
Filament . . . . .	Thoriated Tungsten
Blank . . . . .	Nonex Glass
Base . . . . .	Standard Fifty Watt
Net Weight . . . . .	14 Ounces
Shipping Weight . . . . .	31½ Pounds
Shipping Volume . . . . .	2 Cu. Feet
Maximum Height . . . . .	12 <sup>5</sup> / <sub>8</sub> Inches
Maximum Width . . . . .	5 <sup>3</sup> / <sub>8</sub> Inches

### ELECTRICAL DATA

	L	H
Filament Voltage . . . . .	7.5	7.5 Volts
Filament Current . . . . .	12	12 Amps.
Normal Plate Dissipation . . . . .	450	450 Watts
Maximum Average Plate Current . . . . .	600	600 M. A.
Maximum Plate Voltage . . . . .	6000	6000 Volts
Maximum Average Grid Current . . . . .	80	110 M. A.
Average Amplification Constant . . . . .	16	30
Grid-Plate Capacitance . . . . .	5.2	4.7 mmfd.
Grid-Filament Capacitance . . . . .	6.7	8.8 mmfd.
Plate-Filament Capacitance . . . . .	0.9	0.7 mmfd.

Unique constructional features make this tube capable of high voltages and unusual very high frequency performance. It has exceptional ruggedness, electrical stamina, and extra long life.

Copper thimble connectors are used for the grid and plate. They are high current capacity connectors possessing low resistance. Because of improved radiation, they run at least 50 degrees Centigrade cooler at the copper to glass seal than do ordinary tungsten seals. Their design relieves glass strains, and hence the seal positively will not fail. Heavy rugged leads provide perfect support and alignment to the elements without the use of insulators. Their low inductance combined

with low interelectrode capacity provides easy neutralization and reduces circuit losses at high frequencies.

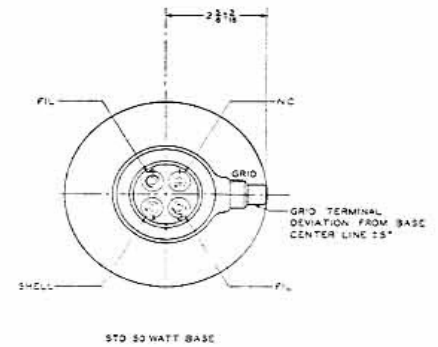
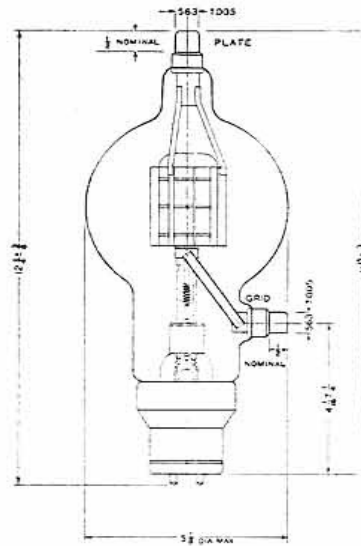
The VHF efficiency is high because of the use of an enclosed plate which confines all electrons to give useful output. Ordinary open plate tubes operate at lower efficiency because of escaped electrons. Electron bombardment is eliminated, lifting voltage limitations. Operation as a neutralized power amplifier up to 100 mc. is practical with up to 70 per cent efficiency.

New tantalum cleaning and pumping techniques give the 854 extra long life, and make it more gas free—more failure proof. A result of 17 years of GAMMATRON progress.

## HEINTZ AND KAUFMAN LTD.

SOUTH SAN FRANCISCO, CALIFORNIA, U · S · A

The information on this and the following page does not represent exact conditions of operation to be imposed for any particular situation. Because tubes are used under many widely different conditions, Heintz and Kaufman will gladly furnish information for applications which differ appreciably from the illustrative examples given.



### RADIO FREQUENCY POWER AMPLIFIER CLASS "C" UNMODULATED

	<b>L</b>					<b>H</b>					
	Maximum Rating Per Tube	TYPICAL OPERATION, 1 TUBE				Maximum Rating Per Tube	TYPICAL OPERATION, 1 TUBE				
Power Output . . . . .		1800	1800	1275	815	1820	1800	1380	865	Watts	
Driving Power . . . . .		40	70	50	55	40	60	60	60	Watts	
DC Plate Voltage . . . . .	6000	5000	4000	3000	2000	6000	5000	4000	3000	2000	Volts
DC Plate Current . . . . .	600	450	560	575	600	600	450	560	600	600	M. A.
DC Grid Current . . . . .	80	45	65	65	75	110	75	100	110	110	M. A.
DC Grid Voltage . . . . .	-1500	-575	-775	-450	-375	-1500	-310	-340	-275	-250	Volts
Peak R.F. Grid Voltage . . . . .		915	1210	850	785		580	655	605	580	Volts
Plate Dissipation . . . . .	450	450	450	450	385	450	430	450	420	335	Watts
Plate Input . . . . .	2250	2250	2250	1725	1200	2250	2250	2250	1800	1200	Watts

### RADIO FREQUENCY POWER AMPLIFIER CLASS "C" PLATE MODULATED\*

	<b>L</b>				<b>H</b>				
	Maximum Rating Per Tube	TYPICAL OPERATION, 1 TUBE			Maximum Rating Per Tube	TYPICAL OPERATION, 1 TUBE			
Power Output . . . . .		1520	1085	675	1520	1110	700	Watts	
Driving Power . . . . .		58	50	45	50	50	50	Watts	
DC Plate Voltage . . . . .	4000	4000	3000	2000	4000	4000	3000	2000	Volts
DC Plate Current . . . . .	475	475	475	475	475	475	475	475	M. A.
DC Grid Current . . . . .	80	65	70	75	110	100	100	110	M. A.
DC Grid Voltage . . . . .	-1500	-625	-425	-325	-1500	-285	-250	-225	Volts
Peak R.F. Grid Voltage . . . . .		995	775	675		570	530	510	Volts
Plate Dissipation . . . . .	380	380	340	275	380	380	315	250	Watts
Plate Input . . . . .	1900	1900	1425	950	1900	1900	1425	950	Watts

\*Carrier conditions for 100% modulation peaks and 60% average value.

# Gammatron Tubes

## AUDIO FREQUENCY POWER AMPLIFIER

### CLASS "B"\*

	Maximum Rating 2 Tubes	L			H			
		TYPICAL OPERATION, 2 TUBES			TYPICAL OPERATION, 2 TUBES			
Power Output . . . . .		1880	1820	1510	1970	1810	1610	Watts
Driving Power** . . . . .		85	105	135	85	110	150	Watts
DC Plate Voltage . . . . .	4000	4000	3000	2000	4000	3000	2000	Volts
DC Plate Current Zero Signal . . . . .		100	130	180	100	130	180	M. A.
DC Plate Current Max. Signal . . . . .	1200	660	860	1160	670	850	1200	M. A.
DC Grid Voltage . . . . .		-315	-240	-120	-140	-95	-50	Volts
Peak R.F. Grid to Grid Voltage . . . . .		1060	1020	920	640	630	650	Volts
Plate Input Max. Signal . . . . .	2750	2640	2580	2360	2680	2550	2400	Watts
Load Resistance Plate to Plate . . . . .		14500	8100	3600	14500	8100	3600	Ohms

\*All data for two tubes.

\*\*Instantaneous power at crest of cycle; effective power is one-half of this value.

## RADIO FREQUENCY POWER AMPLIFIER

### CLASS "B"\*

	Maximum Rating Per Tube	L			H			
		TYPICAL OPERATION, 1 TUBE			TYPICAL OPERATION, 1 TUBE			
Power Output . . . . .		270	240	210	270	255	220	Watts
Driving Power** . . . . .		17	23	36	16	24	40	Watts
DC Plate Voltage . . . . .	6000	4000	3000	2000	4000	3000	2000	Volts
DC Plate Current . . . . .	400	180	230	330	180	235	335	M. A.
DC Grid Current . . . . .		0	1	5	1	3	13	M. A.
DC Grid Voltage . . . . .	-1500	-350	-250	-160	-160	-120	-75	Volts
Peak R.F. Grid Voltage . . . . .		300	275	265	175	177	190	Volts
Plate Dissipation . . . . .	450	450	450	450	450	450	450	Watts
Plate Input . . . . .	720	720	690	660	720	705	670	Watts

\*Carrier conditions for 100% modulation.

\*\*R.F. power, at crest of audio cycle.

## VERY HIGH FREQUENCY PERFORMANCE L AND H

	25	50	75	100 MC.
Frequency . . . . .	25	50	75	100 MC.
Class "C" Unmodulated				
Typical Plate Efficiency, per cent . . . . .	80	74	72	70
Max. Plate Input, Watts . . . . .	2250	1750	1600	1500
Class "C" Modulated				
Typical Plate Efficiency, per cent . . . . .	80	74	72	70
Max. Plate Input, Watts . . . . .	1900	1450	1350	1250
Class "B" Linear				
Typical Plate Efficiency, per cent . . . . .	35	32	31	30
Max. Plate Input, Watts . . . . .	720	680	670	660

# Gammatron Tubes

