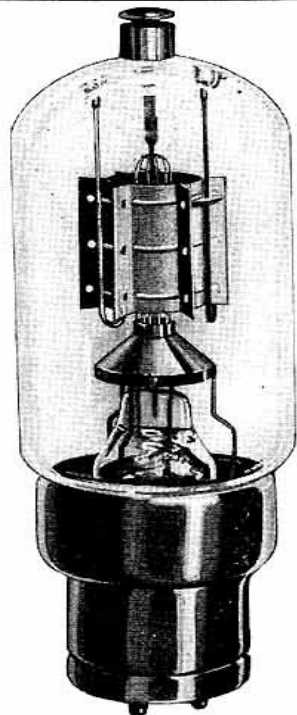


The GAMMATRON LINE

First With Tantalum!!



HK-354
\$24.50 NET

HK-354 GAMMATRON

The Type HK-354 Gammatron transmitting tube is the original Tantalum element tube. It was made commercially available to the amateur and experimenter early in 1934. At the present time it stands foremost among tubes and will be found superior in every respect. As with other Gammatrons this tube has tantalum elements, tungsten supports, Nonex glass, thoriated filament, all-glass insulation and in addition uses extremely rigid three-post plate and grid supports. A cage type of grid insures complete plate current control. The tantalum plate and grid exclude need of a getter and allow safe operation at a red heat, without danger of the tube becoming gassy. Cheaper plate materials are inferior and liberate gas freely when operated at a red heat.

GENERAL CHARACTERISTICS:

Grid and plate.....Tantalum
Filament.....Thoriated Tungsten
Base.....Standard 50 watt

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Filament voltage.....5.0 volts
Filament current.....10. amps.
Plate dissipation.....150. watts
Maximum plate voltage.....4000. volts
Maximum plate current.....300. ma.
Average amplification constant.....14.
Average plate impedance.....2800. ohms

Class "A" Audio Performance (Single Tube):

Plate voltage.....1000 to 2500 volts
Plate current.....60 to 100 ma.
Grid bias.....-40 to -150 volts
Power output.....7 to 44 watts

Class "B" Audio Performance (Two Tubes):

Plate voltage.....1000 to 3000 volts
Plate current.....230 to 390 ma.
Grid bias.....-60 to -205
Power output.....160 to 665 watts
Suggested driver.....Two or four 2A5 or 42 tubes as push-pull triodes with 350 plate volts.

Class "B" Radio Performance (Single Tube):

Plate voltage.....1000 to 3000 volts
Plate current.....58 to 97 ma.
Grid bias.....-60 to -205 volts
Carrier output.....20 to 82 watts

Class "C" Radio Performance (Single Tube):

Plate voltage.....1500 to 4000 volts
Plate current.....255 ma.
Grid bias.....-300 to -700 volts
Power output.....270 to 840 watts.

F.C.C. Broadcast Ratings (Final Stage):

High level modulation.....250 watts per tube
Low level modulation.....50 watts per tube
Grid bias modulation.....50 watts per tube

HK-253 GAMMATRON—A high vacuum half-wave rectifier for use where the time delay required with mercury rectifiers cannot be tolerated. Filament 5 volts, 10 amperes. Maximum inverse peak voltage 10,000 volts. Maximum load current 750 ma. Tube drop, 120 volts.

HK-253-A (Standard 50 watt base) **\$20.00**
HK-253-B (Industrial base) **20.00**

HK-353 GAMMATRON—A half-wave mercury rectifier for use in circuits of moderate voltage and high current. This tube is particularly suited for use with a Heintz and Kaufman Ltd. rectifier in conjunction with the HK Type 300 Engine Generator. Filament 1.25 volts, 13 amperes. Maximum inverse peak voltage 1000 volts. Maximum load current 2.5 amperes.

HK-353 Medium 4 Pin Base **\$12.00**

HK-354-C GAMMATRON—A modification of the HK-354 specially adapted to high frequency use. Has identical electrical characteristics except for slightly lower G-P capacitance. Mechanical arrangement altered to permit grid connection at side of envelope. Grid and plate caps are welded. This tube is particularly suited to diathermy use. Appreciable outputs may be secured at frequencies as high as 100 megacycles.

HK-354-C (Standard 50 watt base) **\$24.50**

HK-653 GAMMATRON—A half wave mercury rectifier for use in circuits of moderate power and high voltage. This tube is of the hot cathode type. Filament 5 volts, 6.5 amperes. Maximum inverse peak voltage 10,000 volts, (15°-50°C). Average current 1.75 amperes. Peak current 7.5 amperes.

HK-653-A (Standard 50 watt base) **\$18.50**
HK-653-B (Industrial base) **18.50**

HK-654 GAMMATRON—A medium size triode suitable for broadcast and other transmitters, as well as high powered diathermy machines. This tube has a glass side-arm and is suitable for operation at frequencies as high as 60 megacycles. Filament 7.5 volts, 15 amperes. Plate dissipation 300 watts. Amplification constant 25. Plate impedance 3800 ohms.

HK-654 (Standard 50 watt base) **\$75.00**

HK-753 GAMMATRON—A high powered mercury rectifier of the hot cathode type. This tube is well adapted to plate voltage supplies used in conjunction with water-cooled transmitting tubes. Filament 5 volts, 6.5 amperes. Maximum inverse peak voltage 10,000 volts, (15°-50°C). Average current 2.5 amperes. Peak current 10 amperes.

HK-753-A (Standard 50 watt base) **\$30.00**
HK-753-B (Industrial base) **30.00**

HK-1554 GAMMATRON—A triode of moderate power adaptable to broadcast and commercial use. The grid connection is made to a side-arm. Tube is suitable for operation at frequencies as high as 60 megacycles. Filament 11 volts, 22.5 amperes. Plate dissipation 750 watts. Amplification constant 14.5. Plate impedance 1800 ohms. F.C.C. ratings; high level 1000 watts; low level and grid bias 250 watts.

HK-1554 (Heintz & Kaufman Ltd. base) **\$250.00**

HK-3054 GAMMATRON—An exceedingly high powered and high efficiency air-cooled triode. This tube is suited to use in commercial and broadcast service at frequencies up to 40 megacycles. Filament 14 volts, 45 amperes. Plate dissipation, 1500 watts. Amplification constant, 20. Plate impedance 2000 ohms. F.C.C. ratings; high level 2500 watts; low level and grid bias 500 watts.

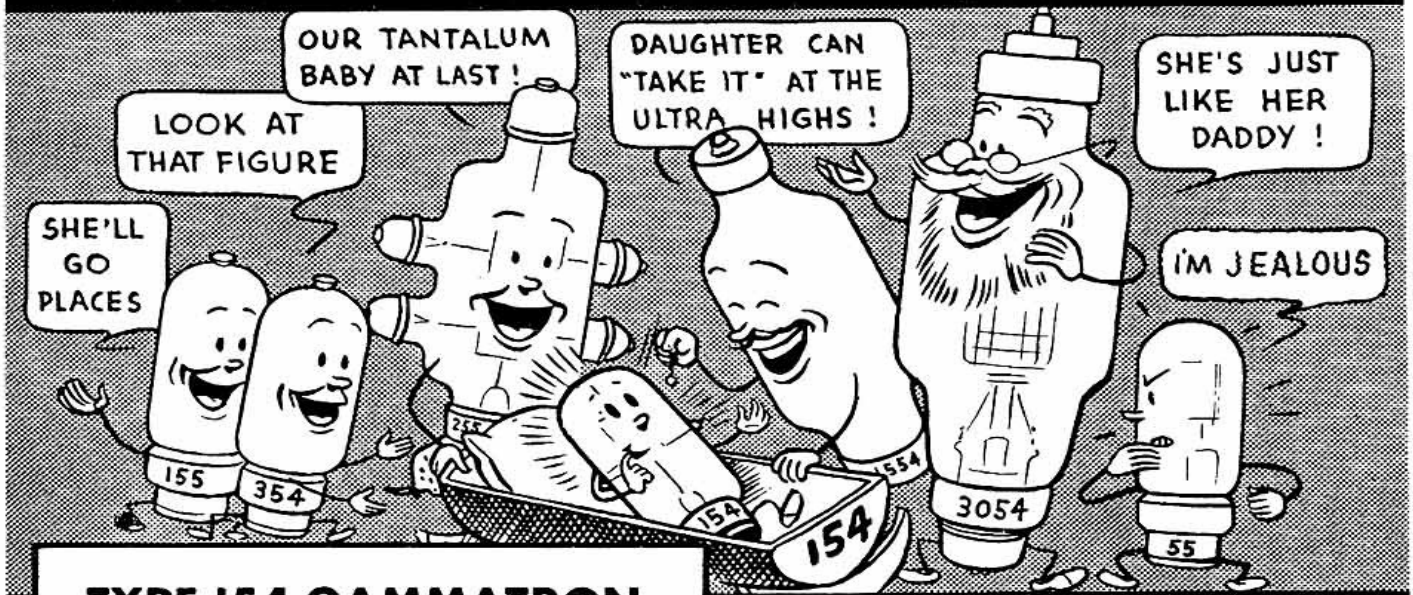
HK-3054 (Heintz & Kaufman Ltd. base) **\$467.50**

TANTALUM USED FOR PLATES AND GRIDS!

Engineering Data on Request



A New Arrival IN THE GAMMATRON FAMILY



TYPE 154 GAMMATRON
\$12.50 AT YOUR DEALER

¼ kilowatt a pair at 1000 VOLTS and 5 meters

HEINTZ AND KAUFMAN
LTD
SOUTH SAN FRANCISCO CALIFORNIA U. S. A.

HK-154 GAMMATRON

This addition to the Gammatron Line gives the amateur and experimenter something radically new in a comparatively low voltage transmitting tube. The outputs in either audio or radio frequency circuits are exceptionally high. Ratings apply at all frequencies up to 60 megacycles (5 meters)! The most modern and finest type of construction is used, incorporating such advantageous features as tantalum grid and plate, tungsten supporting rods, thoriated tungsten filament, all-glass insulation and Nonex glass envelope. Grid and plate terminals extend from the sides of the envelope, thereby minimizing the length of external connecting leads and assisting materially with symmetrical layouts.

GENERAL CHARACTERISTICS:

Grid and plate.....Tantalum
Filament.....Thoriated Tungsten
Base.....Medium 4 Pin

Filament voltage.....5.0 volts
Filament current.....6.5 amps.
Plate dissipation.....50. watts
Maximum plate voltage.....1500. volts
Maximum plate current.....175. ma.
Average amplification constant.....6.7
Average plate impedance.....1750. ohms

Class "A" Audio Performance (Single Tube):

Plate voltage.....500 to 1250 volts
Plate current.....40 to 60 ma.
Grid bias.....-45 to -190 volts
Power output.....3.5 to 15.5 watts.

Class "B" Audio Performance (Two Tubes):

Plate voltage.....750 to 1500 volts
Plate current.....230 to 350 ma.
Grid bias.....-100 to -265 volts
Power output.....150 to 250 watts
Suggested driver:.....Pair of 2A5 or 42 tubes as push-pull triodes with 350 plate volts.

Class "B" Radio Performance (Single Tube):

Plate voltage.....750 to 1500 volts
Plate current.....52 to 75 ma.
Grid bias.....-100 to -265 volts
Carrier output.....18 to 28 watts

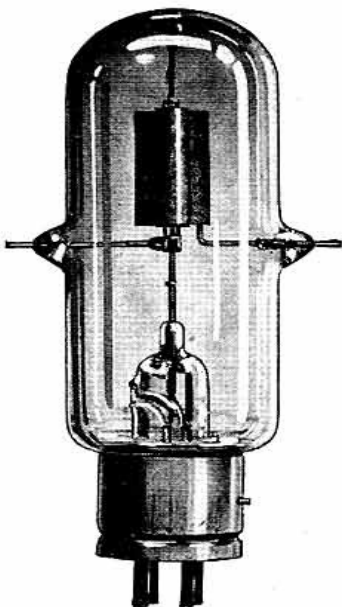
Class "C" Radio Performance (Single Tube):

Plate voltage.....750 to 1500 volts
Plate current.....167 to 175
Grid bias.....-260 to -590 volts
Power output.....85 to 200 watts.

F.C.C. Broadcast Ratings (Final stage):

High level modulation.....75 watts per tube
Low level modulation.....25 watts per tube

TANTALUM USED FOR PLATES AND GRIDS!



HK-154

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