



RCA MANUFACTURING COMPANY, INC.

A RADIO CORPORATION OF AMERICA SUBSIDIARY

Harrison, New Jersey

APPLICATION NOTE No. 74
April 28, 1937.

**RCA RADIOTRON
D I V I S I O N**

APPLICATION NOTE
ON

A NEW HIGH-VOLTAGE CHOKE-INPUT RATING FOR THE 5T4

The 5T4 is a filament-type all-metal rectifier tube intended for supplying radio equipment with direct currents up to 250 milliamperes. The 5T4, except for its lower filament-current rating, is similar electrically to the glass-type 5Z3.

When the 5T4 is used with a condenser-input filter, the a-c voltage per plate should not exceed 450 volts (rms). However, when the 5T4 is used with a properly designed choke-input filter, recent life-test data show that the maximum a-c voltage per plate may be increased to 550 volts (rms). The choke should have an inductance of at least 10 henries when the tube is used at the maximum choke-input rating.

The operating characteristics of the 5T4 for choke- and condenser-input filters are shown by the attached curves. These data show that for the same value of applied a-c voltage a condenser-input filter furnishes more d-c voltage. High d-c voltage is obtained with a condenser-input filter at the expense of regulation: the decrease in d-c output voltage for an increase in d-c load current is greater with a condenser-input filter than with a choke-input filter. Thus, it is advisable to use a choke-input filter when good power-supply regulation is required.

The following table lists the maximum ratings of the 5T4 for condenser-input and choke-input filters.

FULL-WAVE RECTIFIER
Condenser-Input Filter

Filament Voltage (A.C. or D.C.)	5	Volts
A-C Plate Voltage per Plate (RMS)	450 max.	Volts
Peak Inverse Voltage	1250 max.	Volts
D-C Output Current	250 max.	Ma.

Choke-Input Filter

Filament Voltage (A.C. or D.C.)	5	Volts
A-C Plate Voltage per Plate (RMS)	550 max.*	Volts
Peak Inverse Voltage	1550 max.*	Volts
D-C Output Current	250 max.*	Ma.

* Permissible only with filter circuit having an input choke inductance of at least 10 henries.

AN-74-4-28-37
Printed in U.S.A.

*RCA Cunningham • Radiotron Radio Tubes • RCA Radiotron Transmitting Tubes • Special Purpose Tubes • Photo Tubes • Cathode Ray Tubes
Genuine RCA Replacement Parts, Accessories and Test Equipment*

A P P L I C A T I O N N O T E S



OPERATION CHARACTERISTICS

