Electronic TUBES

5U4-GB

TWIN DIODE

FOR FULL-WAVE POWER RECTIFIER APPLICATIONS

DESCRIPTION AND RATING

The 5U4-GB is a filamentary twin diode designed for use as a full-wave rectifier in the power supply of television receivers or other equipment which have high direct-current requirements. The 5U4-GB employs a straight-sided T-12 envelope and may be used as a replacement for either the 5U4-G or 5U4-GA.

GENERAL

ELECTRICAL

Cathode—Coated Filament
Filament Voltage, AC or DC . . . . . 5.0 Volts
Filament Current . . . . . 3.0 Amperes

MECHANICAL

Mounting Position—Vertical*
Envelope—T-12, Glass
Base—B5-121 or B5-113, Short Medium Shell Octal 5-Pin
or B5-127, Flared Medium Shell Octal 5-Pin
or B8-118, Short Medium Shell Octal 8-Pin

MAXIMUM RATINGS

RECTIFIER SERVICE—DESIGN-CENTER VALUES†

Peak Inverse Plate Voltage . . . . . 1550 Volts
AC Plate-Supply Voltage per Plate—See Rating Chart I‡
Steady-State Peak Plate Current per Plate . . . . . 1000 Milliamperes
Transient Peak Plate Current per Plate,
Maximum Duration 0.2 Second . . . . . 4.6 Amperes
DC Output Current—See Rating Chart I‡

CHARACTERISTICS AND TYPICAL OPERATION

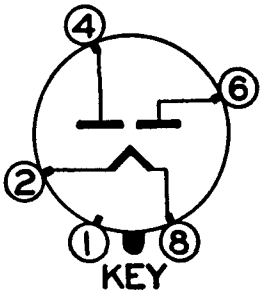
FULL-WAVE RECTIFIER WITH CAPACITOR-INPUT FILTER

AC Plate-Supply Voltage per Plate, RMS	300	450 Volts
Filter Input Capacitor	40	40 Microfarads
Total Plate-Supply Resistance per Plate	21	67 Ohms
DC Output Current	300	275 Milliamperes
DC Output Voltage at Filter Input	290	460 Volts

FULL-WAVE RECTIFIER WITH CHOKE-INPUT FILTER

AC Plate-Supply Voltage per Plate, RMS . . . . . 550 Volts
Filter Input Choke . . . . . 10 Henrys
DC Output Current . . . . . 275 Milliamperes
DC Output Voltage at Filter Input . . . . . 440 Volts
Tube Voltage Drop
Ib = 275 Milliamperes DC per Plate . . . . . 50 Volts

BASING DIAGRAM

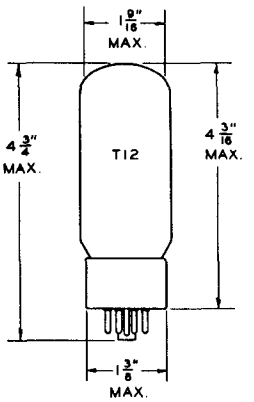


RETMA 5T

TERMINAL CONNECTIONS

Pin 1—No Connection
Pin 2—Filament
Pin 4—Plate Number 2
Pin 6—Plate Number 1
Pin 8—Filament

PHYSICAL DIMENSIONS



GENERAL ELECTRIC

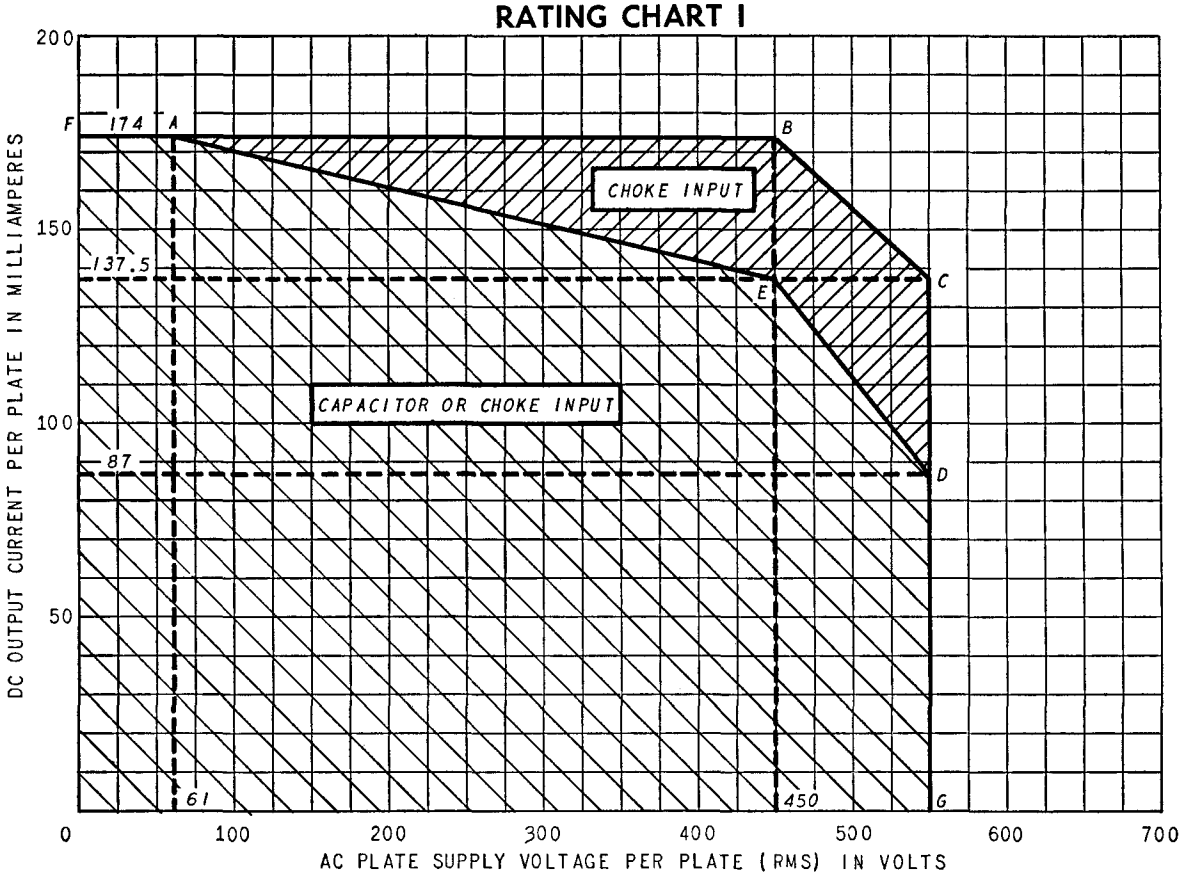
* Horizontal operation is permitted if pins 1 and 4 are in a vertical plane.

† To simplify the application of the maximum ratings to circuit design, the electrical design-center maximum ratings are also presented in chart form as Rating Charts I, II, and III. Rating Chart I presents the maximum ratings for a-c plate supply voltage and d-c output current. Rating Chart II provides a convenient method for checking conformance with the maximum steady-state peak-plate-current rating. Rating Chart III offers a convenient method for checking conformance with the maximum transient peak-plate-current rating. With a capacitor-input filter, the conditions of each of Rating Charts I, II, and III must be satisfied; with a choke-input filter, operation must be within the indicated boundary of Rating Chart I.

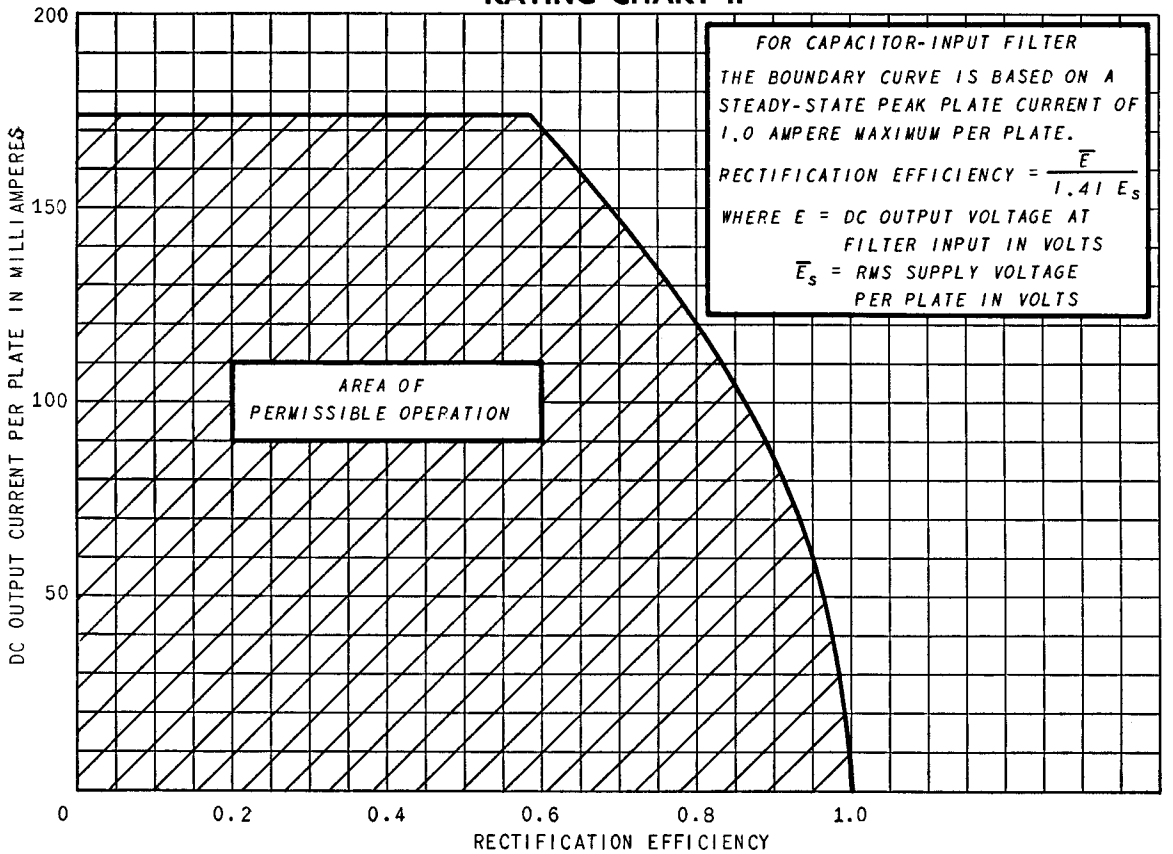
‡ The maximum ratings for a-c plate supply voltage and d-c output current are interrelated and are also dependent on whether a choke- or capacitor-input filter is employed. This relationship is shown in Rating Chart I. With a capactor-input filter, the operating point of d-c output current and a-c supply voltage must fall within the curve FAEDG. With a choke-input filter, the operating point must fall within the curve FABCDG.

NOTE: The indicated values of a-c plate-supply voltage shown throughout the data are measured without load.

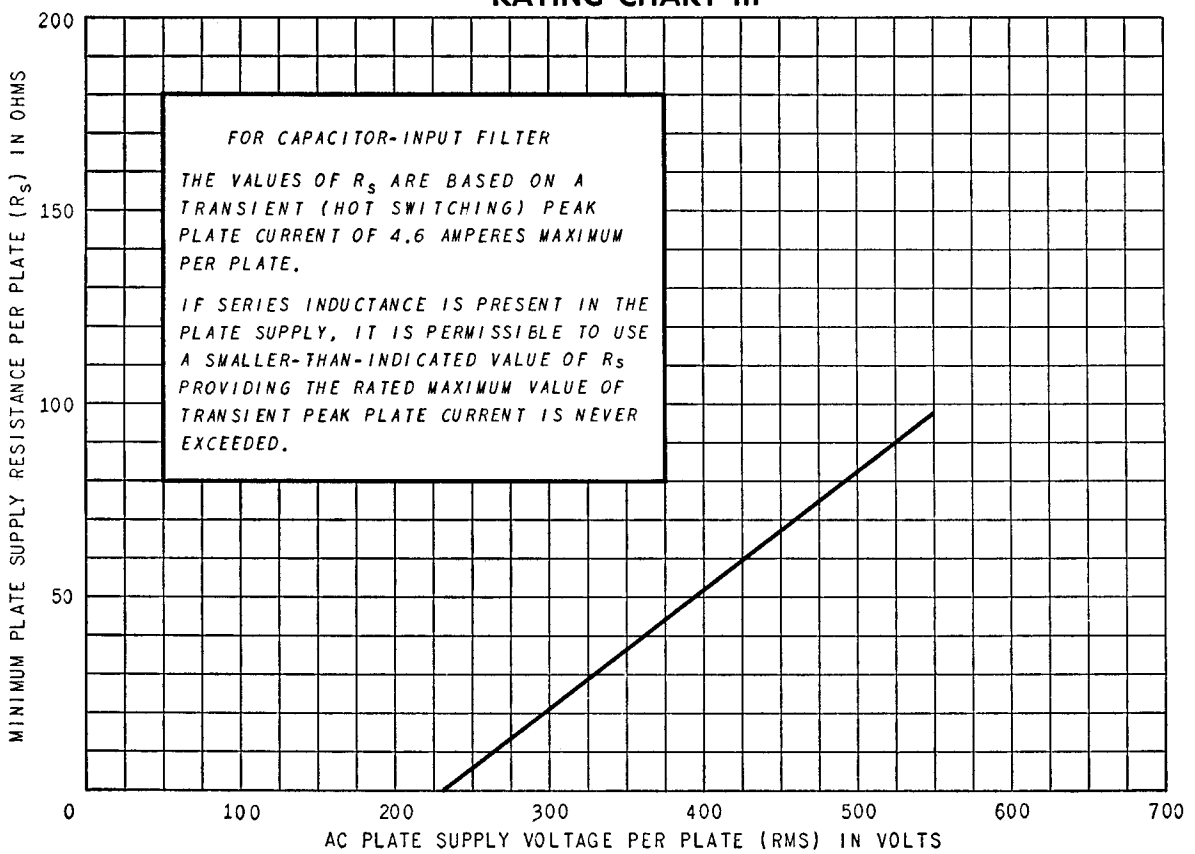
RATING CHART I



RATING CHART II

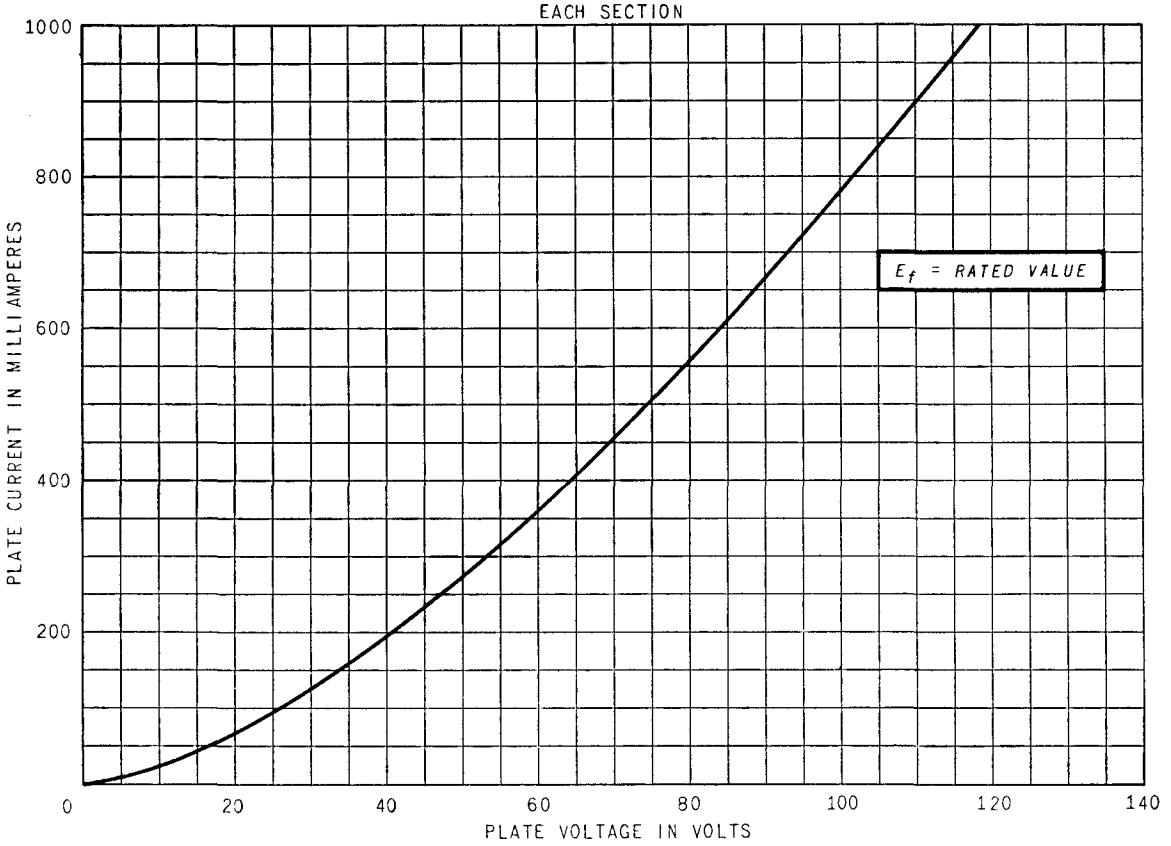


RATING CHART III



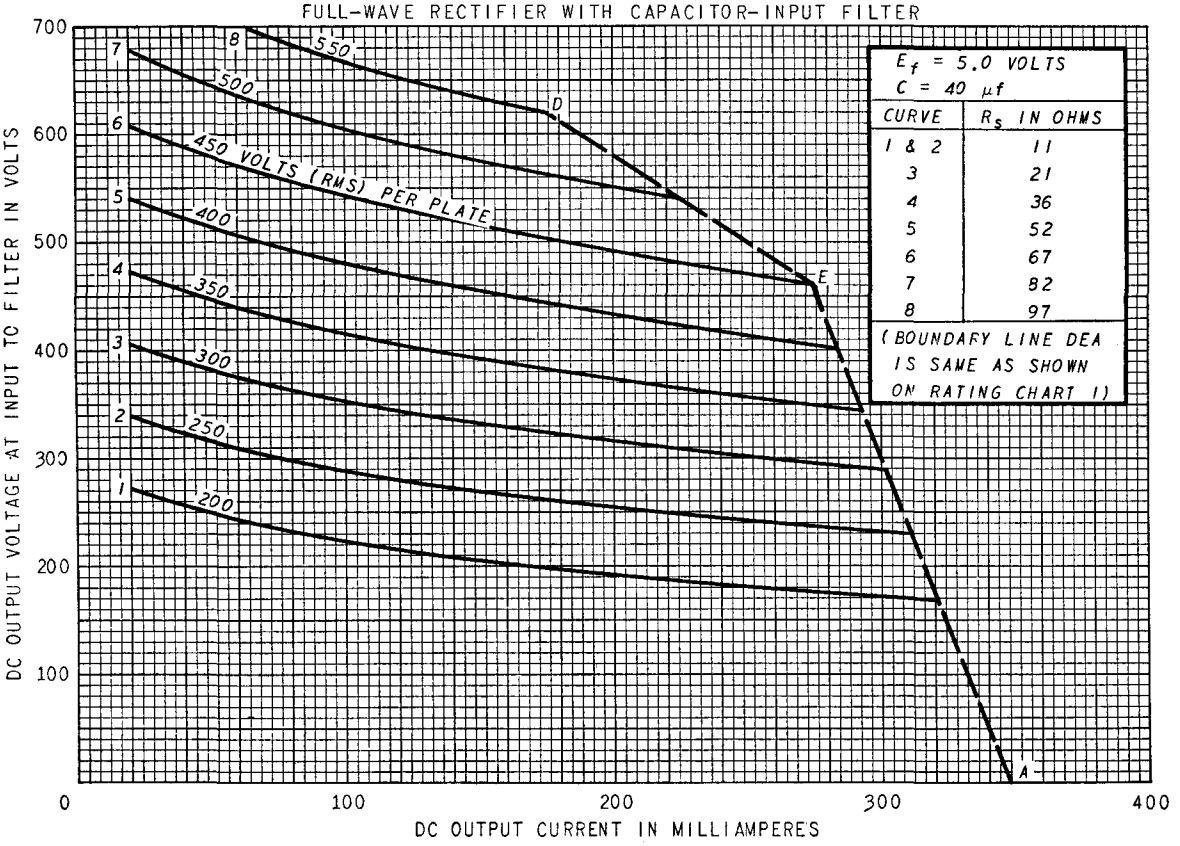
AVERAGE PLATE CHARACTERISTICS

EACH SECTION



OPERATION CHARACTERISTICS

FULL-WAVE RECTIFIER WITH CAPACITOR-INPUT FILTER



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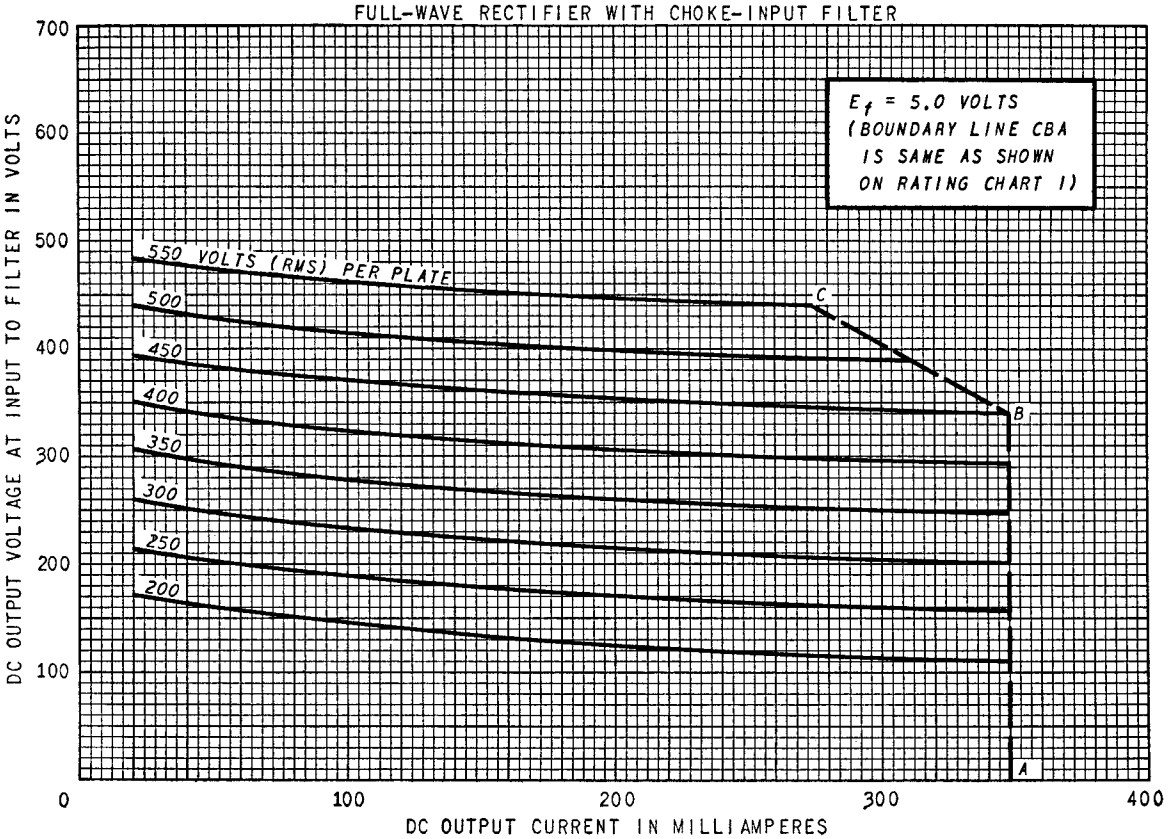
FULL-WAVE RECTIFIER WITH CHOKE-INPUT FILTER