

JOINT ELECTRON TUBE ENGINEERING



Announcement
of
Electron Device Type Reregistration

Release No. 1393A (Tentative) *

May 16, 1955

The Joint Electron Tube Engineering Council announced the registration of the following JETEC tube type designation

5AS4

on January 3, 1955, in Release No. 1393, under the sponsorship of Canadian Westinghouse Company Limited, P. O Box 510, Hamilton, Ontario

Item

GENERAL DATA BASE

Medium Shell
Octal 5 pin base

Medium Shell Octal
5 pin base or
Medium Shell Octal
8 pin base.

Terminal Connections

-

pins 3, 5, and 7-
no connection

* Unless valid objection to this reregistration is lodged with the RETMA Engineering Office prior to June 16, 1955, this reregistration will be made and this information will be considered "FINAL" WITHOUT FURTHER NOTICE!

JOINT ELECTRON TUBE ENGINEERING COUNCIL



Announcement
of
Electron Device Type Registration

Release No. 1393

January 3, 1955

The Joint Electron Tube Engineering Council announces the registration of the following tube type designation

5AS4

according to the ratings and characteristics found on the attached data sheet on the application of

Canadian Westinghouse Company, Ltd.
P. O. Box 510
Hamilton, Ontario

November, 26, 1954

FULL WAVE VACUUM RECTIFIER

The 5AS4 is a full-wave vacuum rectifier of the filamentary cathode type, intended for use in power supplies of television and radio equipment having high dc requirements. This tube is especially designed to permit operation at higher peak and average current ratings.

The 5AS4 has a maximum peak inverse plate voltage of 1550 volts, and a maximum peak plate current per plate of one ampere. When operated as a full-wave rectifier with an ac plate-to-plate supply voltage of 600 volts rms in a circuit with capacitor input to filter, the 5AS4 can deliver a dc output voltage of approximately 290 volts to the filter at a dc current of 300 milliamperes. Similarly, when operated as a full wave rectifier with an ac plate-to-plate supply voltage of 900 volts rms in a circuit with capacitor input to filter, the 5AS4 can deliver a dc output voltage of approximately 460 volts to the filter at a dc current of 275 milliamperes.

GENERAL DATA

Electrical:

Filament, coated:

Voltage..... 5 A.C. or D.C. volts
Current..... 3 amp.

Mechanical:

Mounting position...Vertical, or Horizontal with pins 1 and 4 in Vertical plane

Maximum Overall Length..... $5\frac{5}{16}$ "
Maximum Seated Length..... $4\frac{3}{4}$ "
Maximum Diameter..... $2\frac{1}{16}$ "
Bulb..... ST16
Base..... Medium Shell Octal 5 pin

Typical Operation with Capacitor - Input Filter:

A.C. Plate to Plate supply voltage (RMS)*.....	600	900	volts
Filter Input Capacitor.....	40	40	μf
Total Effect. Plate Supply Impedance per Plate.....	21	67	ohms
D.C. Output Current.....	300	275	mA
D.C. Output Voltage at Filter Input.....	290	460	volts
Tube Voltage Drop.....	54	50	volts

Typical Operation with Choke-Input Filter:

A.C. Plate to Plate Supply Voltage (RMS)*.....	1100	volts
Filter Input Choke.....	10	henries
D.C. Output Current.....	275	mA
D.C. Output Voltage at Filter Input.....	420	volts

* Measured without load.

FULL-WAVE RECTIFIER

Maximum Ratings:

Peak Inverse Plate Voltage..... 1550 max. volts
Steady State Peak Current per Plate..... 1.0 max. amp.
(see rating chart 2)
A.C. Plate Supply Voltage (RMS) per plate..... 550 max. volts
(see rating chart 1)
D.C. Output Current per Plate (see rating chart 1)
Transient Peak Plate Current per Plate..... 4.6 max. amp.
(see rating chart 3)

RATING CHARTS

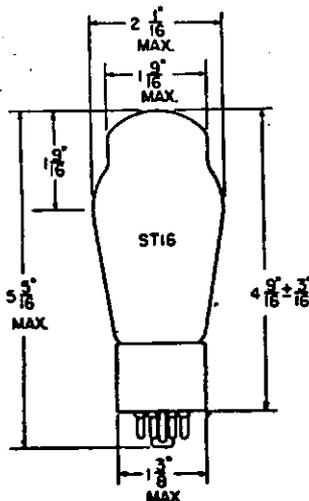
Rating chart 1 presents graphically the relationships between maximum ac voltage input and maximum dc output current derived from the fundamental ratings for conditions of capacitor input and choke input filters.

Rating chart 2 defines the limit of the steady state peak plate current. Operation within the boundary is permitted.

The points of operation should fall within the proper boundaries on all charts for any application.

Plate supply voltages are measured with the rectifier tube non-conducting, i.e. with transformer unloaded. This unloaded voltage is used when calculating rectification efficiency.

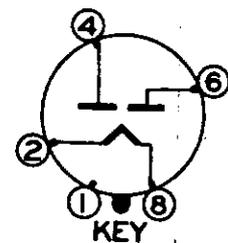
PHYSICAL DIMENSIONS



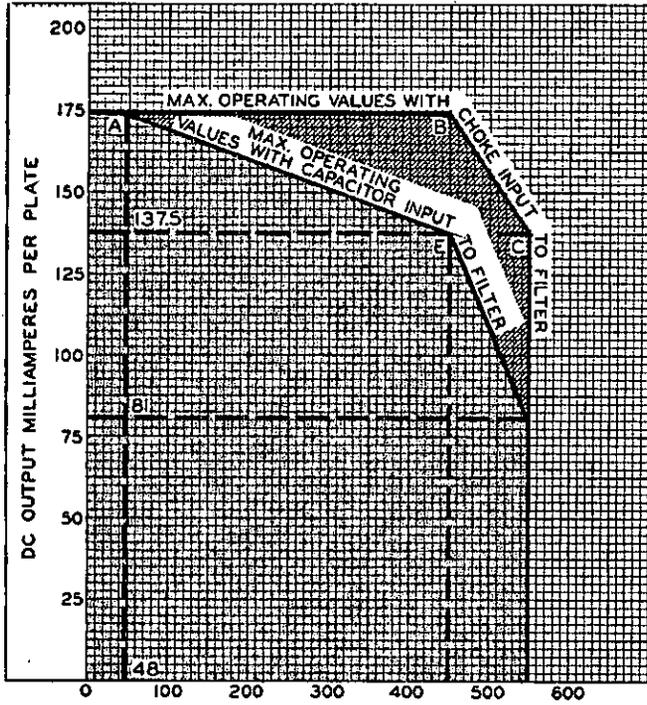
TERMINAL CONNECTIONS

- Pin 1 - No connection
- Pin 2 - Filament
- Pin 4 - Plate No. 2
- Pin 6 - Plate No. 1
- Pin 8 - Filament

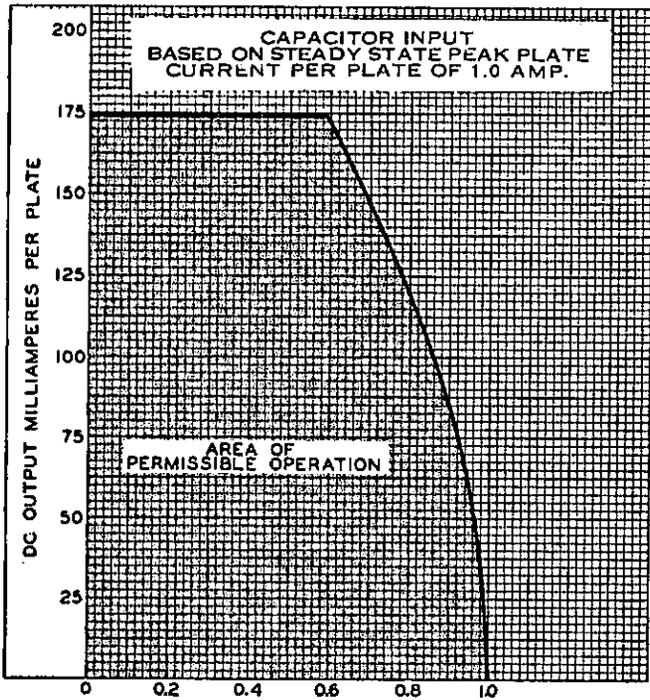
BASING DIAGRAM



Bottom view

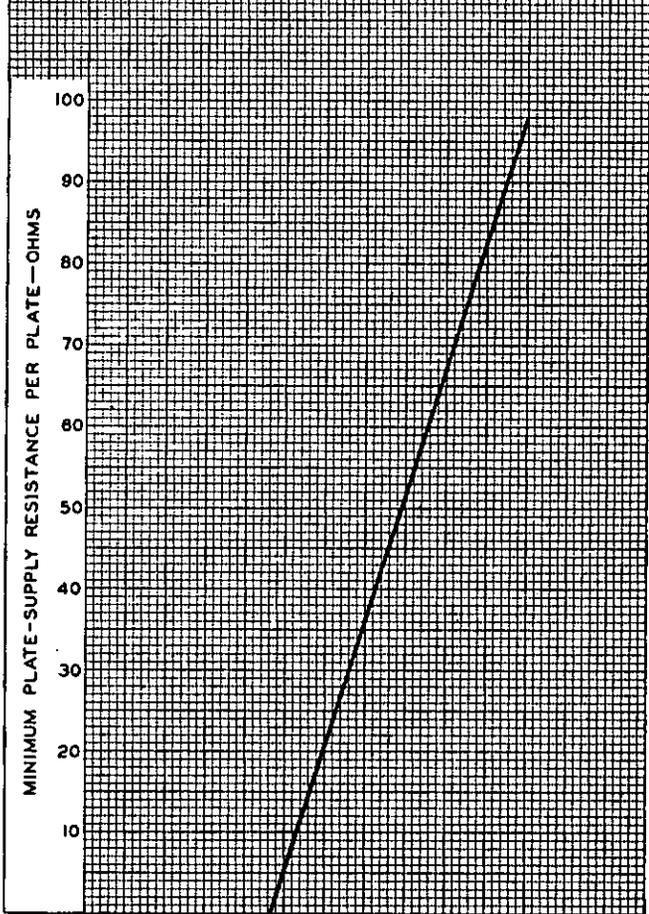


AC plate supply voltage (RMS) per plate (without load)
rating chart 1



rating chart 2

$E_f = 5.0$ VOLTS AC MAX. HOT-SWITCHING CUR. = 4.8 AMP.
 PLATE-SUPPLY RESISTANCE PER PLATE = $R_{SEC} + N^2 R_{PRI} + R_A$
 WHERE R_{SEC} = DC RESISTANCE OF TRANSFORMER SECONDARY PER SECTION
 R_{PRI} = DC RESISTANCE OF TRANSFORMER PRIMARY
 R_A = DC RESISTANCE OF ADDED SERIES RESISTANCE PER PLATE
 N = TRANSFORMER VOLTAGE STEP-UP RATIO PER SECTION



AC plate supply voltage (RMS) per plate (without load)
rating chart 3

← rectification efficiency is defined as

$$\frac{\text{DC output voltage at filter input}}{\text{AC plate supply voltage per plate (without load)}}$$