

FOR HALF-WAVE POWER-RECTIFIER APPLICATIONS

DESCRIPTION AND RATING

The 35W4 is a miniature half-wave rectifier for use in line-operated equipment having series-connected heaters. The heater is tapped to permit operation of a panel lamp.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC.....	$35 \pm 10\%*$	$32 \pm 10\%†$	Volts
Heater-Tap Voltage.....	7.5*	5.5†	Volts
Heater Current.....	0.15	0.15	Ampere

MECHANICAL

Mounting Position—Any

Envelope—T-5½, Glass

Base—E7-1, Miniature Button 7-Pin

MAXIMUM RATINGS

RECTIFIER SERVICE—DESIGN-MAXIMUM VALUES

Peak Inverse Plate Voltage.....	360	Volts
Steady-State Peak Plate Current.....	660	Milliamperes
DC Output Current		
Without Panel Lamp.....	110	Milliamperes
With Panel Lamp and Shunting Resistor.....	100	Milliamperes
With Panel Lamp and No Shunting Resistor.....	66	Milliamperes
Heater-Tap Voltage When Panel Lamp Fails, RMS.....	17	Volts
Panel Lamp Shunting Resistor		
For DC Output Current of 70 Milliamperes.....	800	Ohms
For DC Output Current of 80 Milliamperes.....	400	Ohms
For D-C Output Current of 90 Milliamperes.....	250	Ohms

Heater-Cathode Voltage

Heater Positive with Respect to Cathode..... 360 Volts

Heater Negative with Respect to Cathode..... 360 Volts

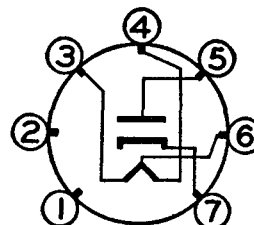
Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

These values are chosen by the tube manufacturer to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, variation in characteristics of all other tubes in the equipment, equipment control adjustment, load variation, signal variation, and environmental conditions.

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

BASING DIAGRAM

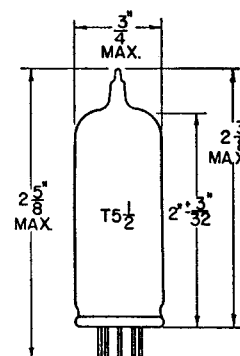


EIA 58Q

TERMINAL CONNECTIONS

- Pin 1—No Connection
- Pin 2—No Connection
- Pin 3—Heater
- Pin 4—Heater
- Pin 5—Plate
- Pin 6—Heater Tap
- Pin 7—Cathode

PHYSICAL DIMENSIONS



EIA 5-3

CHARACTERISTICS AND TYPICAL OPERATION

HALF-WAVE RECTIFIER WITH PANEL LAMP NUMBER 40 OR NUMBER 47

Heater Voltage (Pin 3 to Pin 4)	32	32	32	32	Volts
Heater-Tap Voltage (Pin 4 to Pin 6)	5.5	5.5	5.5	5.5	Volts
Heater Current (Between Pins 3 and 6)	150	150	150	150	Milliamperes
AC Plate-Supply Voltage, RMS	117	117	117	117	Volts
Filter Input Capacitor	40	40	40	40	Microfarads
Total Effective Plate-Supply Impedance	15	15	15	15	Ohms
Panel-Lamp Shunting Resistor	—	300	150	100	Ohms
DC Output Current	60	70	80	90	Milliamperes

HALF-WAVE RECTIFIER WITHOUT PANEL LAMP

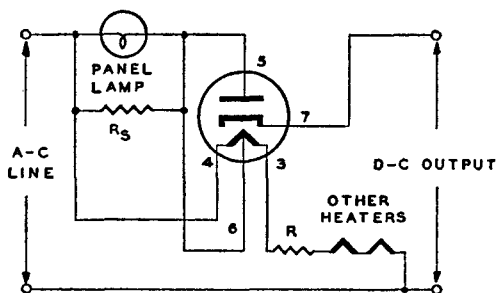
Heater Voltage (Pin 3 to Pin 4)	35	Volts
Heater-Tap Voltage (Pin 4 to Pin 6)	7.5	Volts
Heater Current (Between Pins 3 and 4)	150	Milliamperes
AC Plate-Supply Voltage, RMS	117	Volts
Filter Input Capacitor	40	Microfarads
Total Effective Plate-Supply Impedance	15	Ohms
DC Output Current	100	Milliamperes
DC Output Voltage at Filter Input		
For DC Output Current of 50 Milliamperes	135	Volts
For DC Output Current of 100 Milliamperes	120	Volts

Tube Voltage Drop $I_b = 200$ Milliamperes DC	18	Volts
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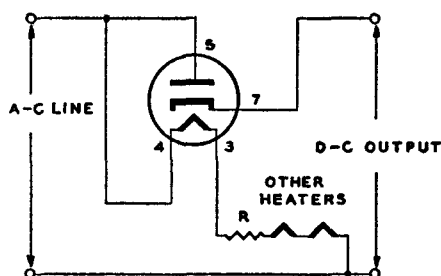
* Operation without a panel lamp.

† Operation with Number 40 or Number 47 panel lamp connected between pins 4 and 6.

TYPICAL CIRCUIT FOR OPERATION
 WITH PANEL LAMP



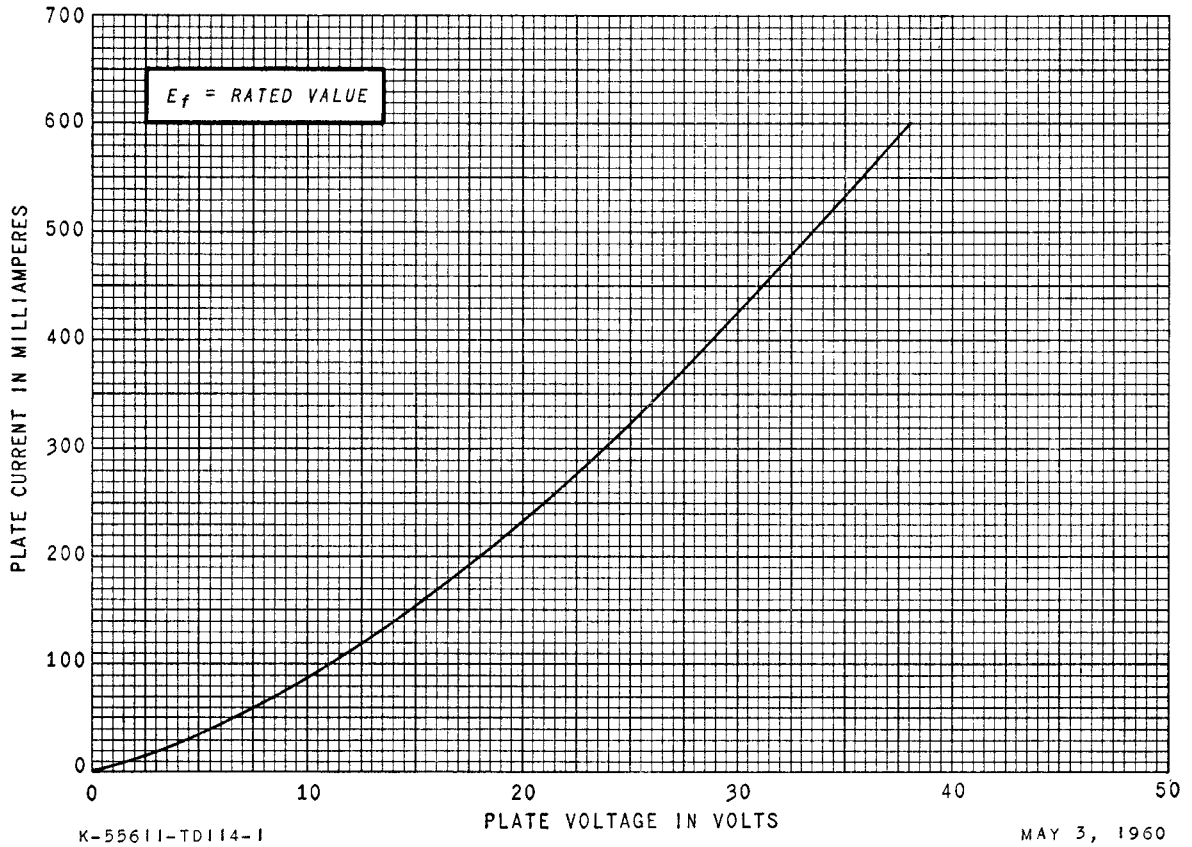
TYPICAL CIRCUIT FOR OPERATION
 WITHOUT PANEL LAMP



R_s = PANEL - LAMP SHUNTING RESISTOR

DROP ACROSS R AT 0.15 AMPERE SHOULD EQUAL
 DIFFERENCE BETWEEN LINE VOLTAGE AND TOTAL
 OF ALL RATED HEATER VOLTAGES

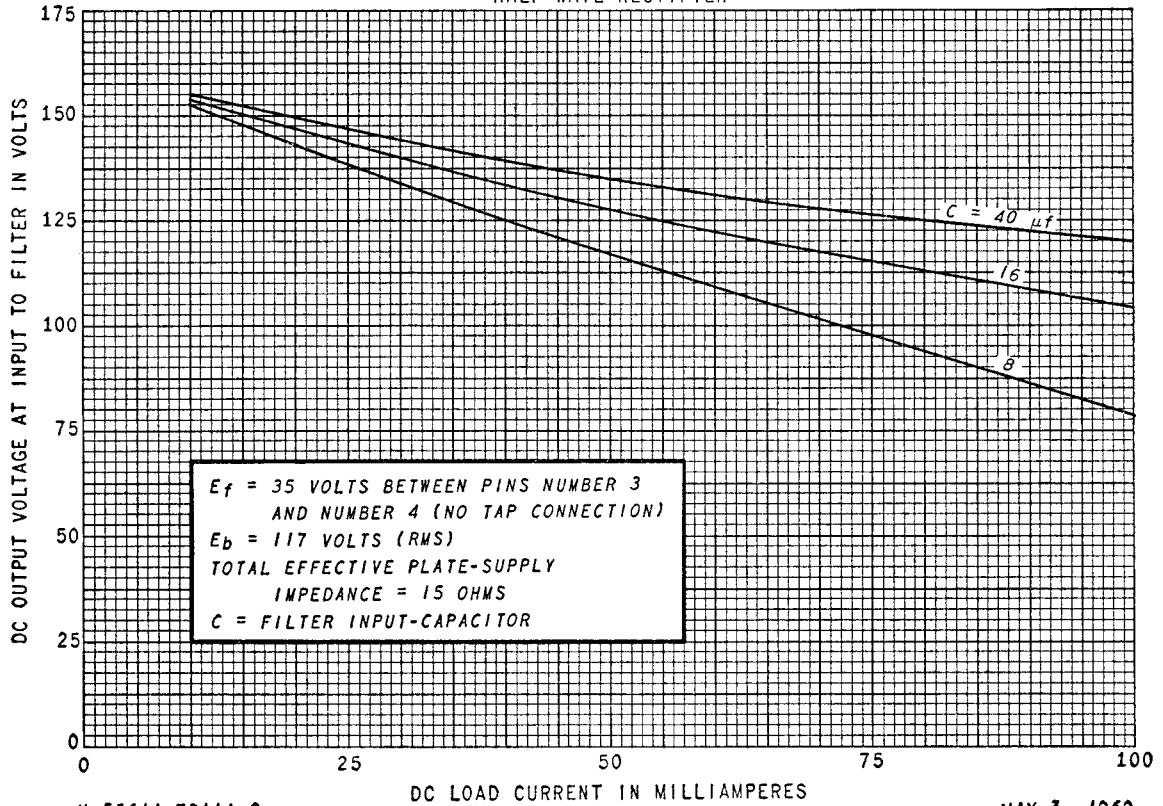
AVERAGE PLATE CHARACTERISTICS



MAY 3, 1960

OPERATION CHARACTERISTICS

HALF-WAVE RECTIFIER



MAY 3, 1960