Electronic TUBES

35W4

DIODE

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 ± 10%*	32 ± 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.

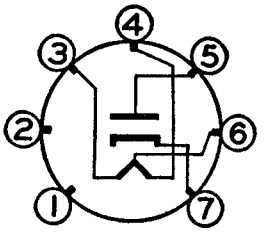
These values are chosen by the tube manufacturer to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

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.

GENERAL ELECTRIC

Supersedes ET-T407B dated 3-50

BASING DIAGRAM

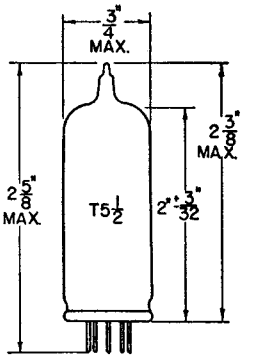


EIA 5BQ

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

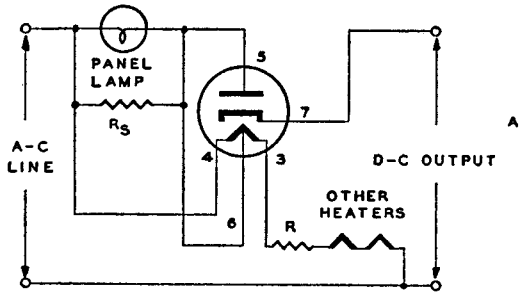
HALF-WAVE RECTIFIER WITHOUT PANEL LAMP

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

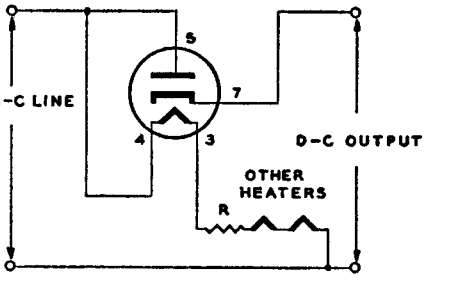
Tube Voltage Drop
Ib = 200 Milliamperes DC ..... 18 Volts

* 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



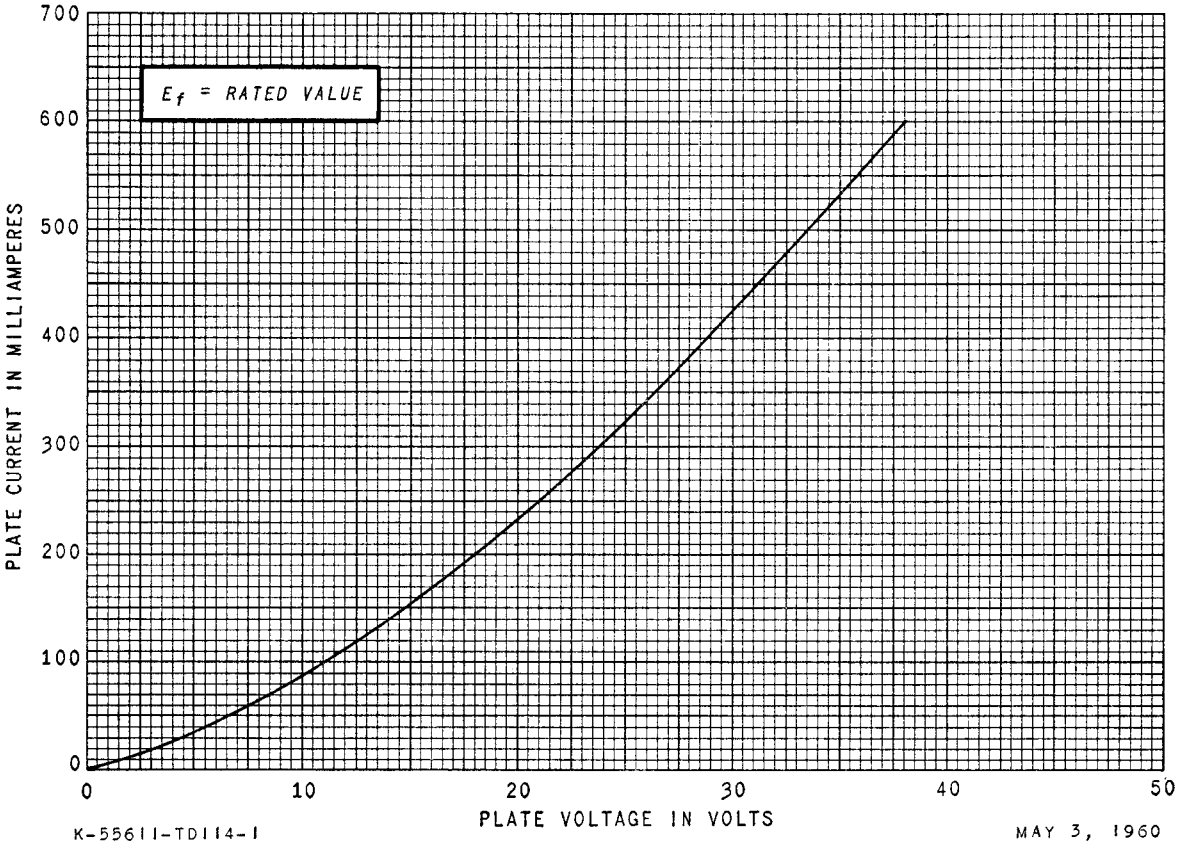
TYPICAL CIRCUIT FOR OPERATION WITHOUT PANEL LAMP



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

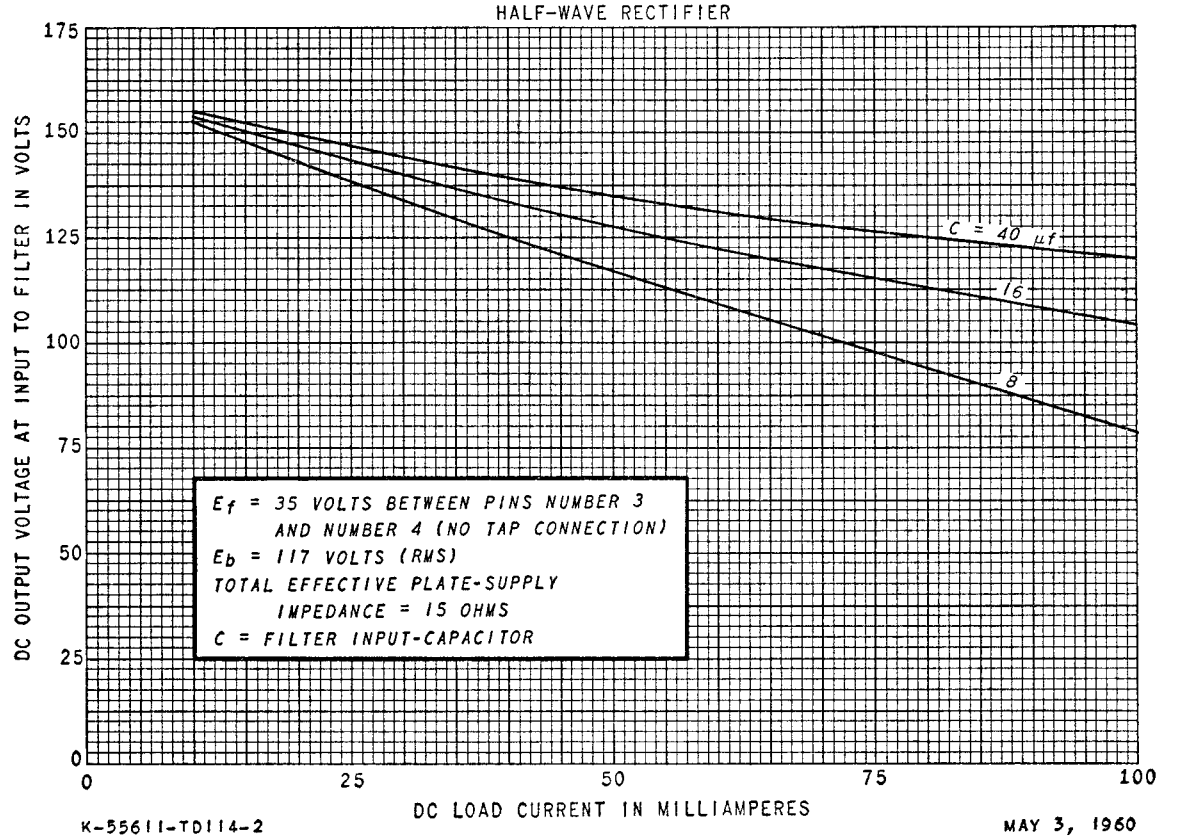


K-55611-TD114-1

MAY 3, 1960

OPERATION CHARACTERISTICS

HALF-WAVE RECTIFIER



K-55611-TD114-2

MAY 3, 1960