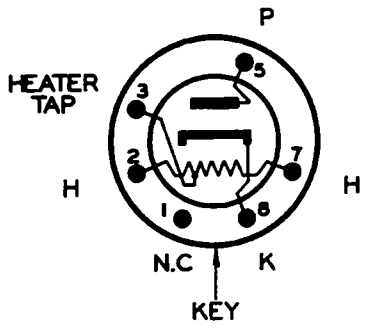
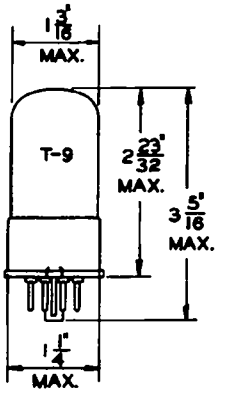
GENERAL DESCRIPTION

Application: The Ken-Rad 35Z5GT is a cathode type half-wave rectifier designed for service in AC-DC receivers. It features a 35 volt 150 milliampere heater having a tap brought out from the heater so that with proper external connections a single pilot lamp can be lighted to nominal brilliancy. It is recommended that the plate current of the rectifier be passed through the pilot lamp and the tapped section of the heater. This is accomplished by connecting the plate of the rectifier to the tap on the heater. The Ken-Rad 35Z5GT is a glass tube equipped with an octal base.

Physical Characteristics:



Bottom View



RATING AND CHARACTERISTICS

Heater:

Voltage	35.0	Volts AC or DC
Current	.150	Ampere

Note: With 35 volts RMS between pins 2 and 7, the open circuit voltage between pins 2 and 3 is 7.5 volts RMS.

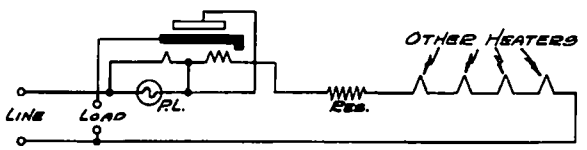
* MAXIMUM CONDITIONS

AC Plate Voltage (RMS)	125	Volts	Max.
DC Load Current with No. 40 or No. 40A Pilot Lamp	50	Milliamperes	Max.
DC Load Current with No. 50 or No. 51 Pilot Lamp	60	Milliamperes	Max.
DC Load Current without Tap Connected	100	Milliamperes	Max.
Average Tube Voltage Drop	16	Volts at 200 Milliamperes	

* The ratings marked maximum are design centers for a line voltage of 117 volts.

Note: No. 40 and No. 40A lamps are .15 Amp. at 6.3 Volts.
No. 50 and No. 51 lamps are .20 Amp. at 7.5 Volts.

TYPICAL CONDITIONS-TAP CONNECTION



Note: Drop across resistance and all heaters should total 117 volts at .150 Amp.

RECOMMENDATIONS

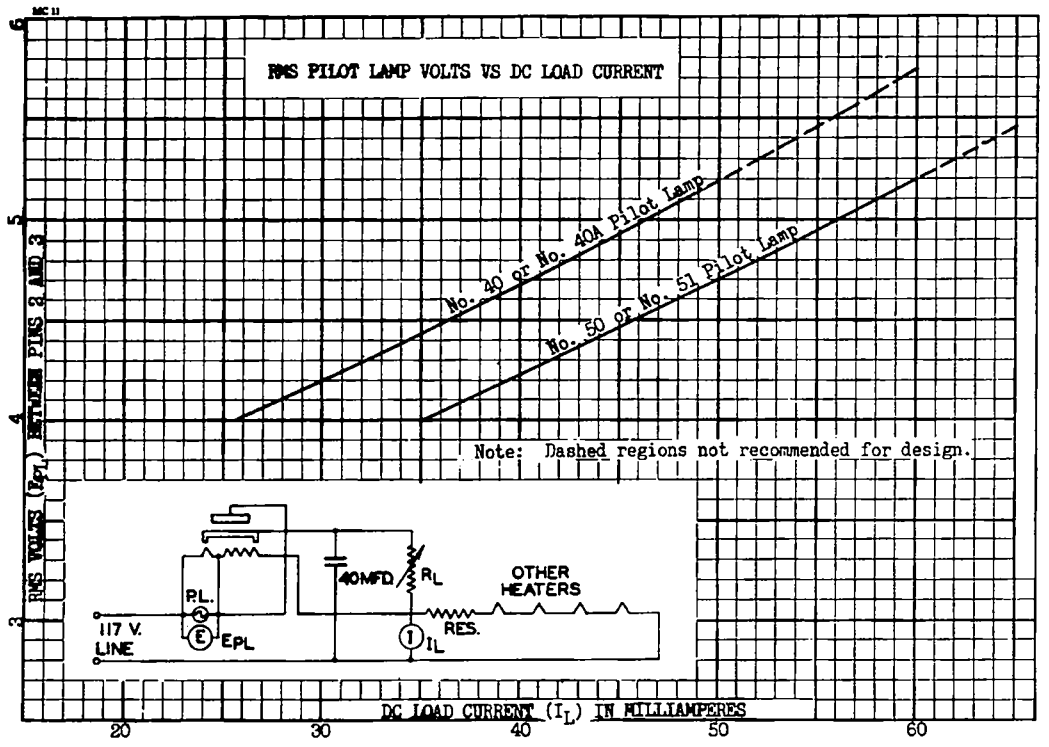
1. It is recommended that the pilot lamp and DC load current should be such that the potential between base pins 2 and 3 does not exceed 5.2 volts RMS at 117 volts line. This voltage should be measured with a thermal meter or a meter that will read RMS voltages. Rectifier type voltmeters, although calibrated in RMS volts, measure average volts and should not be used for this measurement.

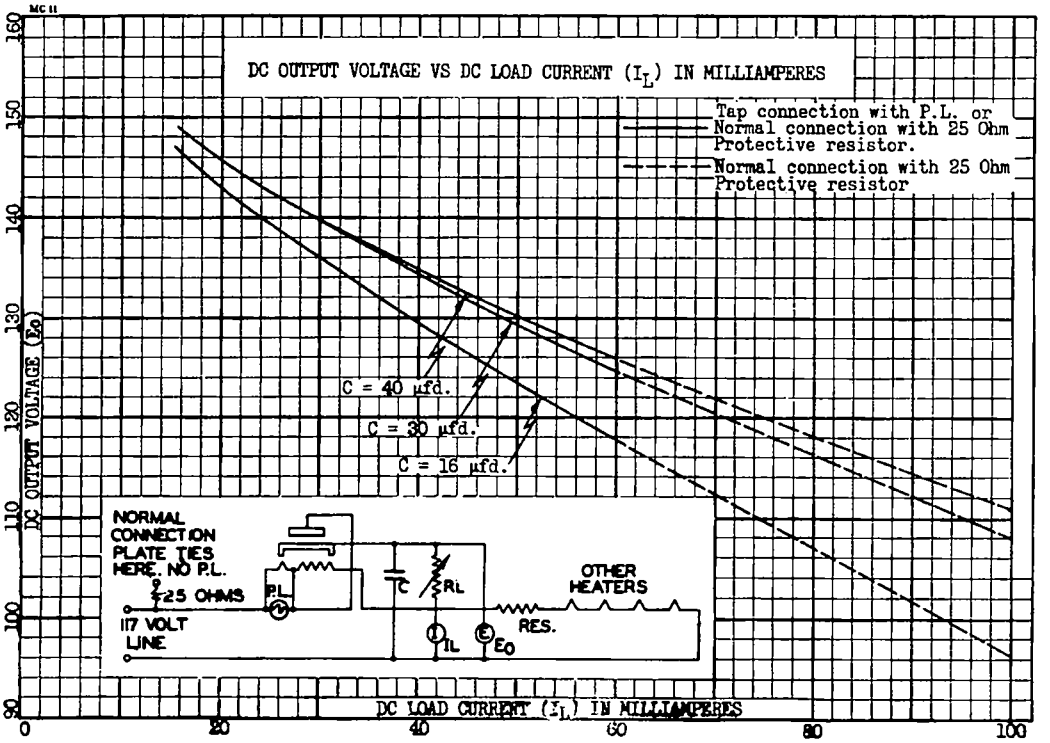
2. It is recommended that the input filter condenser be limited to 40 microfarads.

3. Although it is possible to use DC load currents above 60 milliamperes in combination with high current pilot lamps such as the No. 44 and No. 46, this operation is not recommended because with pilot lamp failure excessive voltage appears between pins 2 and 3 causing heater burn out.

4. If the 35Z5GT is used without the tap connection it is recommended that a 25 ohm protective resistor be used in series with the plate.

5. Voltages should not be applied to the socket when installing or removing tubes.


MC 11
RMS PILOT LAMP VOLTS VS DC LOAD CURRENT
RMS VOLTS (E_{PL}) BETWEEN PINS 2 AND 3
No. 40 or No. 40A Pilot Lamp
No. 50 or No. 51 Pilot Lamp
Note: Dashed regions not recommended for design.
40MFD.
R_L
OTHER HEATERS
P.L.
117 V. LINE
E_{PL}
RES.
I_L
DC LOAD CURRENT (I_L) IN MILLIAMPERES
3
4
5
6
20
30
40
50
60


MC 11
DC OUTPUT VOLTAGE VS DC LOAD CURRENT (I_L) IN MILLIAMPERES
Tap connection with P.L. or Normal connection with 25 Ohm Protective resistor.
Normal connection with 25 Ohm Protective resistor
DC OUTPUT VOLTAGE (E_o)
C = 40 µfd.
C = 30 µfd.
C = 16 µfd.
NORMAL CONNECTION PLATE TIES HERE. NO P.L.
25 OHMS
117 VOLT LINE
P.L.
C
R_L
OTHER HEATERS
RES.
I_L
E_o
DC LOAD CURRENT (I_L) IN MILLIAMPERES
90
100
110
120
130
140
150
160
0
20
40
60
80
100

MC1A

JETEC DATA
JOINT ELECTRON TUBE ENGINEERING COUNCIL
COMMITTEE ON RECEIVING TUBES

JETEC TYPE 35Z5GT

DIODE

MECHANICAL DATA

Coated unipotential cathode

Outline drawing	9-11 or 9-41
Bulb	T-9
Base	B6-8 intermediate shell octal 6-pin or B6-60 short intermediate shell octal 6-pin
Maximum diameter	1-9/32"
Maximum overall length	3-5/16"
Maximum seated height	2-3/4"
Pin connections	Basing 6AD

Pin 1 - No connection
Pin 2 - Heater
*Pin 3 - Heater tap
Pin 5 - Plate
Pin 7 - Heater
Pin 8 - Cathode

*Panel lamp heater section is between pins 2 and 3.

Mounting position . . . . . any

ELECTRICAL DATA

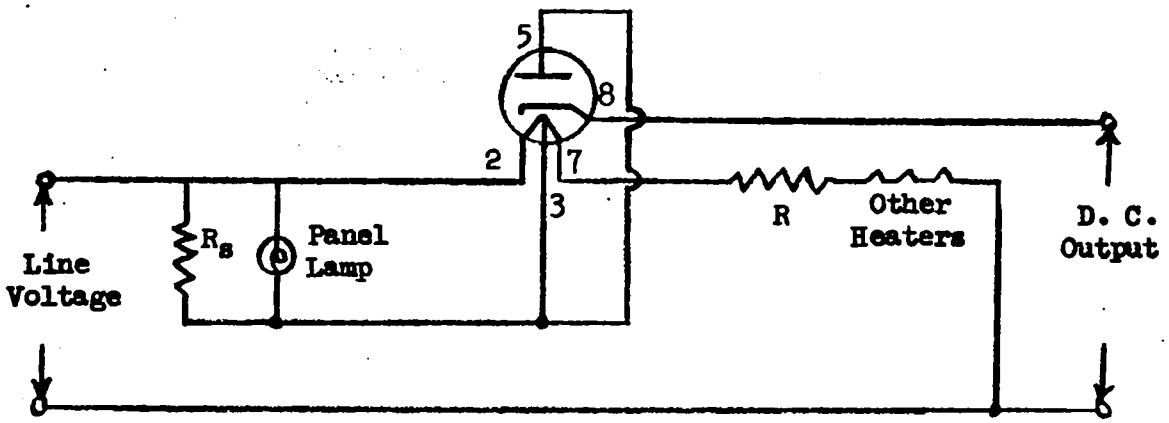
Ratings	Without Panel Lamp	With No. 40 or No. 47 Panel Lamp	
Heater voltage (ac or dc)			
Entire heater (pins 2 and 7)	35	35	volts
Panel lamp section (pins 2 and 3)	7.5	5.5	volts
Heater current			
Between pins 2 and 7	150	-	ma
Between pins 3 and 7	-	150	ma
Maximum AC plate voltage (r.m.s.)	235		volts
Maximum peak inverse voltage	700		volts
Maximum steady state peak plate current	600		ma
Maximum DC heater-cathode voltage	350		volts
Maximum panel lamp section r.m.s.voltage when panel lamp fails	15		volts
Maximum steady-state DC output current:			
With panel lamp and no shunting resistor	60		ma
With panel lamp and shunting resistor	90		ma
Without panel lamp	100		ma
Maximum value of panel lamp shunting resistor:			
For DC output current of 70 ma	800		ohms
For DC output current of 80 ma	400		ohms
For DC output current of 90 ma	250		ohms
Tube voltage drop with tube conducting 200 ma DC plate current	18		volts

Continued on Page 2

ELECTRICAL DATA (Continued)

Typical Operation with No. 40 or No. 47 Panel Lamp In Circuit Below with Capacitor Input to Filter

A.C. Plate supply voltage (RMS)	117	117	117	117	235	volts
Filter input capacitor	40	40	40	40	40	µf
Minimum total effective plate supply impedance	15	15	15	15	100	ohms
Panel lamp shunting resistor	-	300	150	100	-	ohms
D.C. output current	60	70	80	90	60	ma



Drop across R and all heaters (with panel lamp) should equal the line voltage at 0.15 ampere.
Rs = shunting resistor required when DC output current exceeds 60 milliamperes.

Typical Operation Without Panel Lamp in Conventional Half-wave Circuit With Capacitor Input to Filter: (plate current must not flow through tap section)

A.C. plate supply voltage (RMS)	117	235	volts
Filter input capacitor	40	40	µf
Minimum total effective plate supply impedance	15	100	ohms
D.C. output voltage at input to filter (approx.):			
At 50 ma (half load)	140	280	volts
At 100 ma (full load)	129	235	volts
Difference (voltage regulation)	20	45	volts
Percentage regulation	14	16	%
D.C. output current	100	100	ma

Refer to "Interpretation of Receiving Tube Ratings"