

# DESCRIPTION AND RATING

## TWIN DIODE GL-6202

### FIVE-STAR TUBE



The GL-6202 is a miniature full-wave high-vacuum rectifier intended for use in power supplies in which the d-c current requirements do not exceed 50 milliamperes. Within the limitations of its maximum ratings, the GL-6202 is a replacement for the 6X4.

The GL-6202 is specially designed to assure dependable life and reliable service under the exacting conditions encountered in mobile and aircraft applications. Features include a high degree of mechanical strength and a heater-cathode construction designed to withstand many-thousand cycles of intermittent operation. This tube may be used in applications which are subjected to altitudes as high as 60,000 feet.

## TECHNICAL INFORMATION

### GENERAL

#### Electrical

Cathode - Coated Unipotential

Heater Voltage (A-c or D-c)

6.3 Volts

Heater Current

0.6 Ampere

#### Mechanical

Mounting Position - Any

Envelope - T-5 1/2, Glass

Base - Miniature Button 7-pin, E7-1

### MAXIMUM RATINGS

Electrical\*, Design-center Values

Rectifier Service - Sinusoidal Supply Voltages, Frequency Range  
25 to 1000 Cycles per Second

Peak Inverse Plate Voltage

Altitudes up to 40,000 Feet†

1250 Volts

Altitudes from 40,000 to 60,000 Feet†

850 Volts

A-c Plate-supply Voltage, per Plate, RMS - See Rating Chart I‡

Steady-state Peak Plate Current per Plate

200 Milliamperes

Transient Peak Plate Current per Plate,

Maximum Duration 0.2 Second

1.45 Amperes

D-c Output Current - See Rating Chart I‡

Heater-cathode Voltage

Heater Positive with Respect to Cathode

100 Volts

Heater Negative with Respect to Cathode

450 Volts

#### Mechanical

Peak Impact Acceleration§

700 G

Bulb Temperature at Hottest Point (Absolute Maximum)

+165 C

### CHARACTERISTICS AND TYPICAL OPERATION

Full-wave Rectifier, Altitudes up to 40,000 Feet

|                                         | Capacitor<br>Input Filter | Choke<br>Input Filter |             |
|-----------------------------------------|---------------------------|-----------------------|-------------|
| A-c Plate-supply Voltage per plate, RMS | 325                       | 450                   | Volts       |
| Filter Input Capacitor                  | 4                         | ---                   | Microfarads |
| Filter Input Choke                      | ---                       | 8                     | Henrys      |
| Total Plate-supply Resistance per plate | 175                       | ---                   | Ohms        |

# CHARACTERISTICS AND TYPICAL OPERATION (CONT'D)

Full-wave Rectifier, Altitudes up to 40,000 Feet

|                                                        | Capacitor<br>Input Filter | Choke<br>Input Filter |              |
|--------------------------------------------------------|---------------------------|-----------------------|--------------|
| D-c Output Current                                     | 50                        | 50                    | Milliamperes |
| D-c Output Voltage at Filter Input                     | 365                       | 375                   | Volts        |
| Tube Voltage Drop                                      |                           |                       |              |
| Measured with Applied D-c at 50 Milliamperes per Plate |                           | 22                    | Volts        |

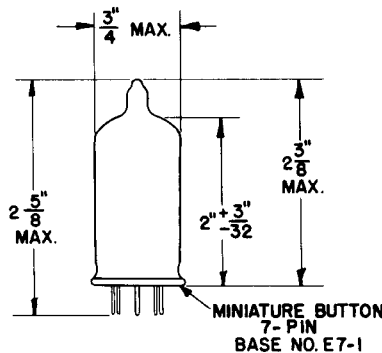
\* To simplify the application of the maximum ratings to circuit design, the electrical design-center maximum ratings are also presented in chart form as Rating Charts I, II, and III. Rating Chart I presents the maximum ratings for a-c plate-supply voltage and d-c output current. Rating Chart II provides 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 in order to obtain performance within all of the appropriate electrical maximum ratings. With a choke-input filter, operation within the indicated boundary of Rating Chart I will assure performance within all of the appropriate electrical maximum ratings.

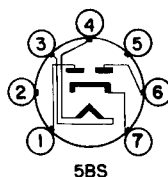
† The altitude ratings as presented refer to the limitations of the tube itself. Because the socket employed can become the limiting factor in high-altitude operation, consideration must be given to the voltage-breakdown capabilities of the tube and socket combination employed.

‡ The maximum ratings for a-c plate supply voltage and d-c output current are inter-related and are also dependent on whether a choke or capacitor-input filter is employed. This relationship is shown in Rating Chart I. With a capacitor-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.

§ Forces in any direction as applied by the Navy-type, High Impact (flyweight) Shock Machine for Electronic Devices or its equivalent.

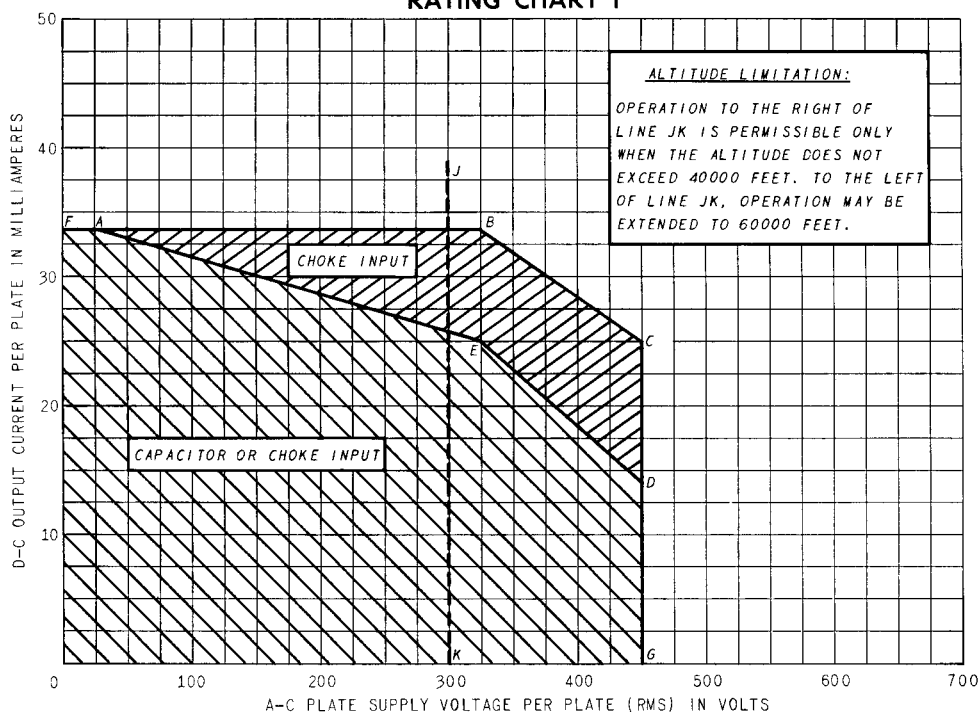


BASING DIAGRAM



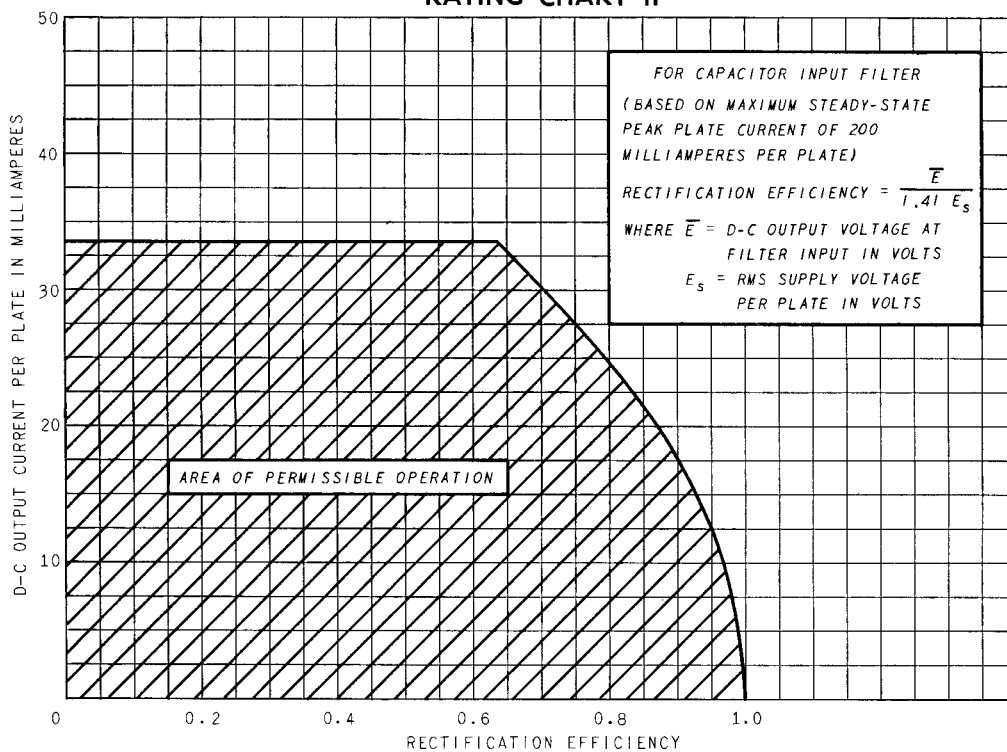
PIN 1: PLATE NUMBER 2  
 PIN 2: NO CONNECTION  
 PIN 3: HEATER  
 PIN 4: HEATER  
 PIN 5: NO CONNECTION  
 PIN 6: PLATE NUMBER 1  
 PIN 7: CATHODE

# RATING CHART I

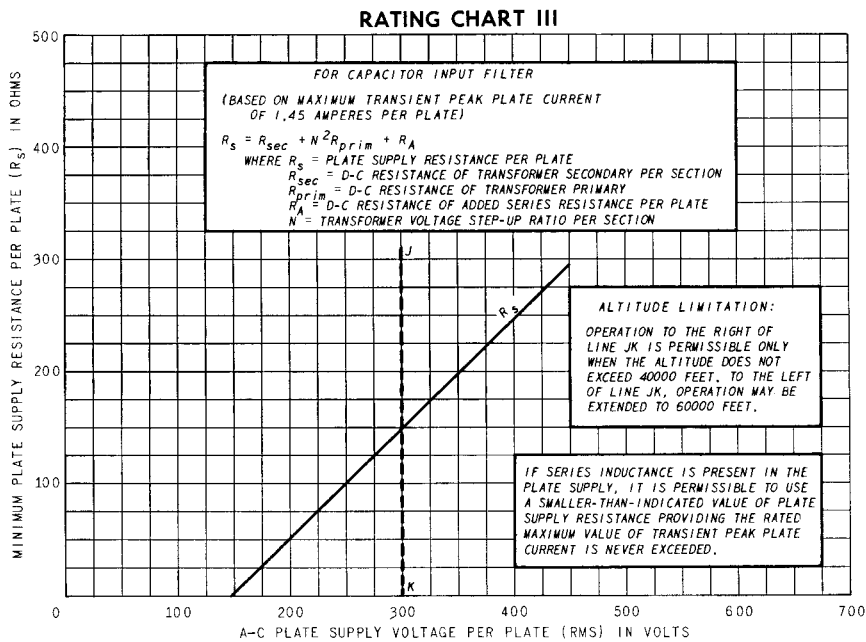


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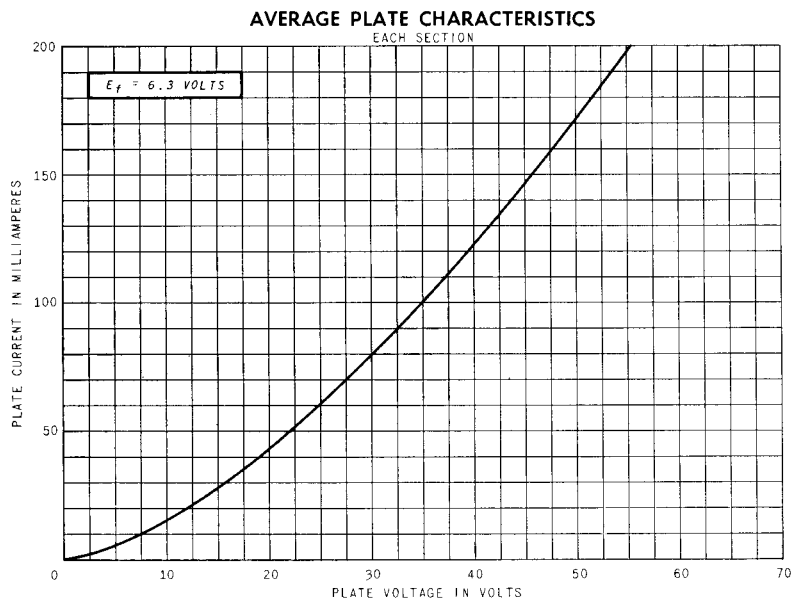
# RATING CHART II



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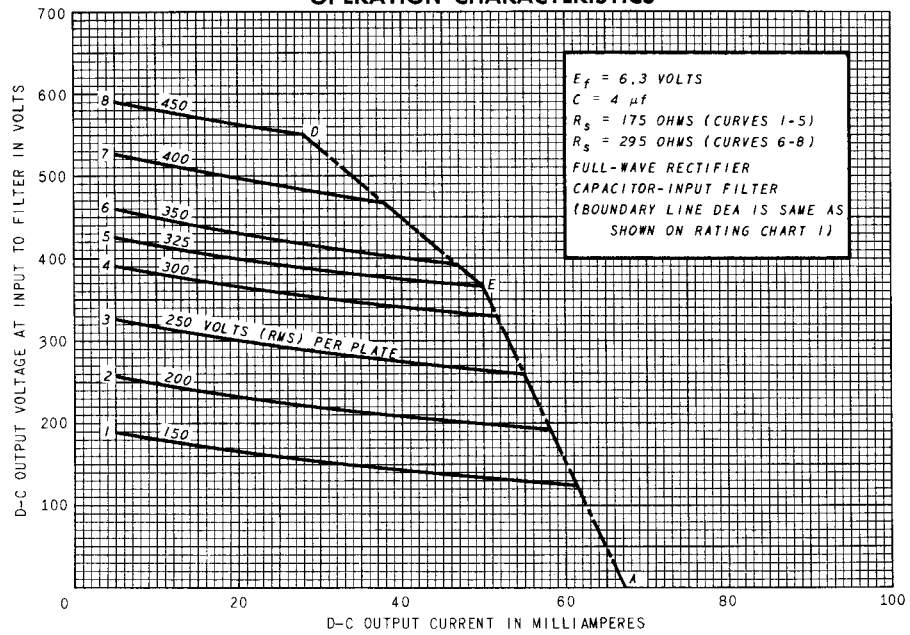


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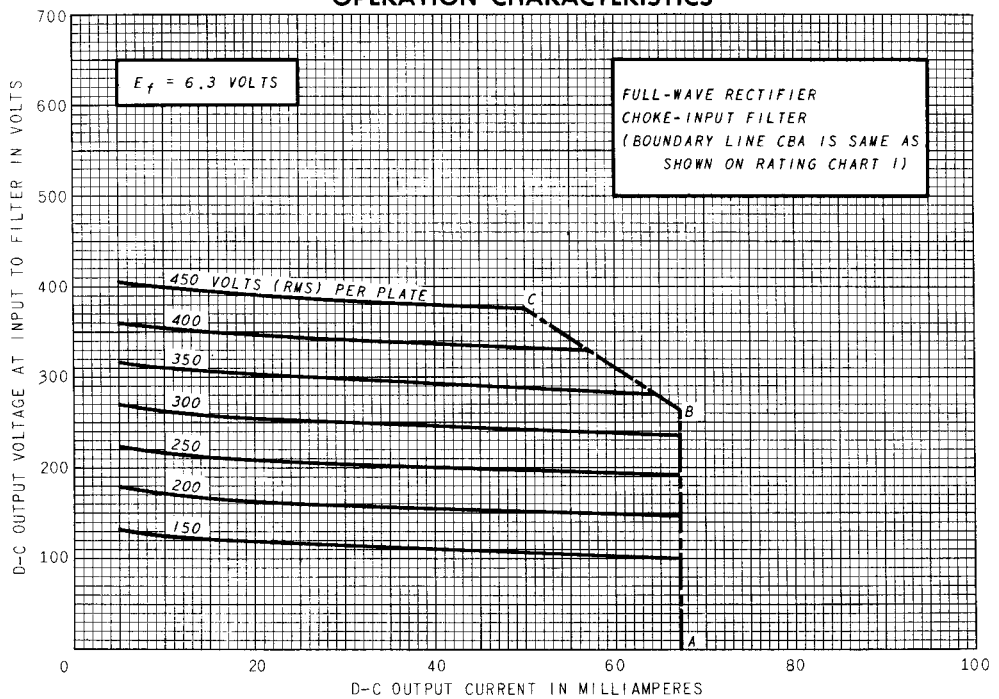
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# OPERATION CHARACTERISTICS



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