DESCRIPTION AND RATING

TWIN DIODE GL-6203

FIVE-STAR TUBE

★ ★ ★ ★ ★

The GL-6203 is a miniature full-wave high-vacuum rectifier intended for use in power supplies of a-c and storage-battery-operated equipment. The tube 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	0.9	Ampere

Mechanical

Mounting Position - Any
Envelope - T-6 1/2, Glass
Base - Small Button 9-pin, E9-1

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 60,000 Feet†	1250	Volts
A-c Plate-supply Voltage per Plate, RMS - See Rating Chart I‡		
Steady-state Peak Plate Current per Plate	270	Milliamperes
Transient Peak Plate Current per Plate, Maximum Duration 0.2 Second	1.8	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)	+200	C

CHARACTERISTICS AND TYPICAL OPERATION

Full-wave Rectifier

	Capacitor Input Filter	Choke 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	150	---	Ohms
D-c Output Current	70	70	Milliamperes
D-c Output Voltage at Filter Input	355	375	Volts
Tube Voltage Drop			
Measured with Applied D-c at 70 Milliamperes per Plate	22		Volts

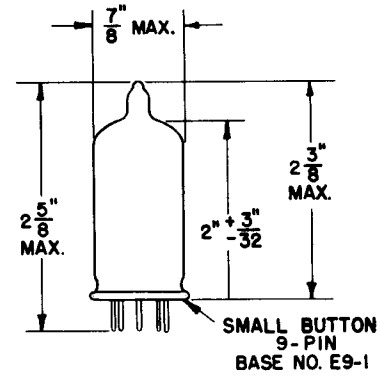
* To simplify the application of the maximum ratings to circuit design, the electrical design-center maximum ratings are also presented in chart form as Rating Charts I, II, and III. Rating Chart I presents the maximum ratings for a-c plate-supply voltage and d-c output current. Rating Chart II provides 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.

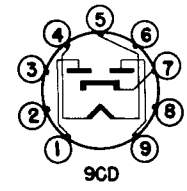
† The altitude ratings as presented refer to the limitations of the tube itself. Because the socket employed can become the limiting factor in high-altitude operation, consideration must be given to the voltage-breakdown capabilities of the tube and socket combination employed.

‡ The maximum ratings for a-c plate supply voltage and d-c output current are interrelated 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, Hign Impact (flyweight) Shock Machine for Electronic Devices or its equivalent.



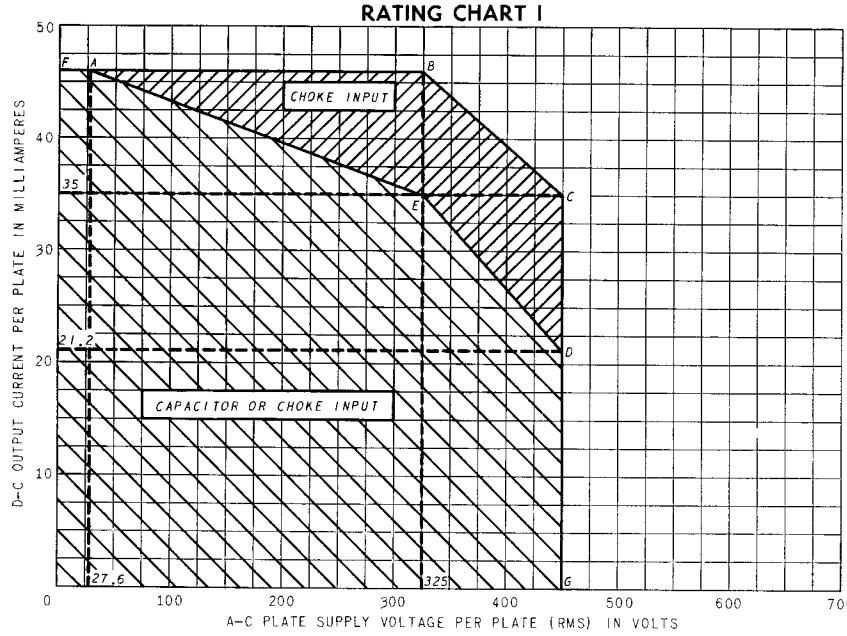
BASING DIAGRAM



9CD

PIN 1: PLATE NUMBER 2
PIN 2: NO CONNECTION
PIN 3: NO CONNECTION
PIN 4: HEATER
PIN 5: HEATER
PIN 6: NO CONNECTION
PIN 7: CATHODE
PIN 8: NO CONNECTION
PIN 9: PLATE NUMBER 1

RATING CHART I



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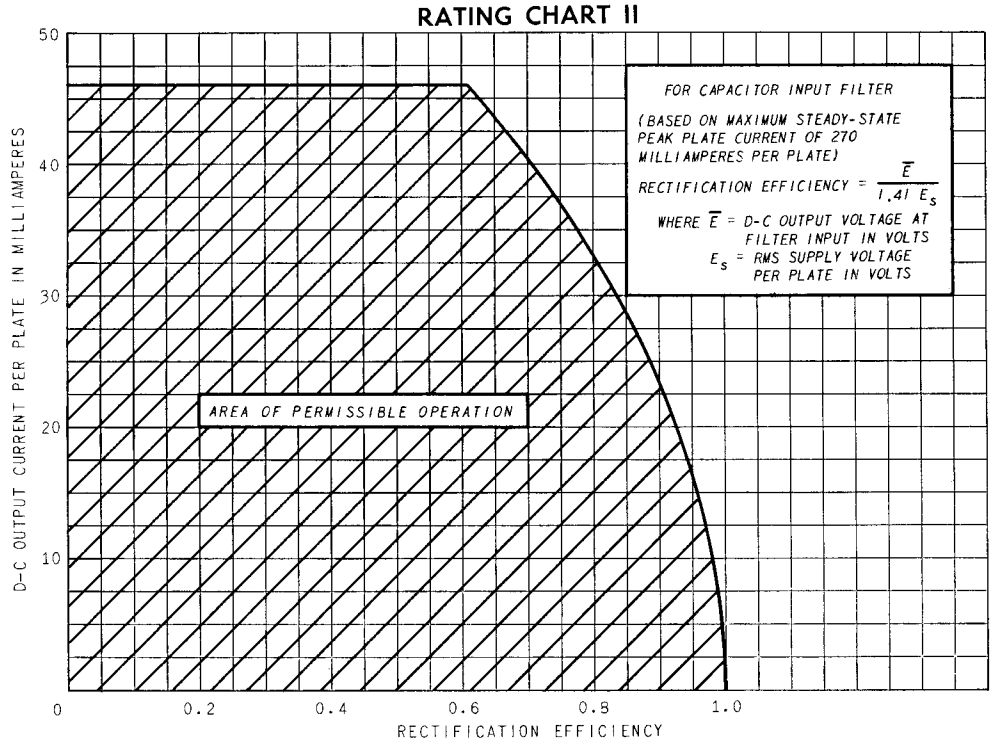
RATING CHART II



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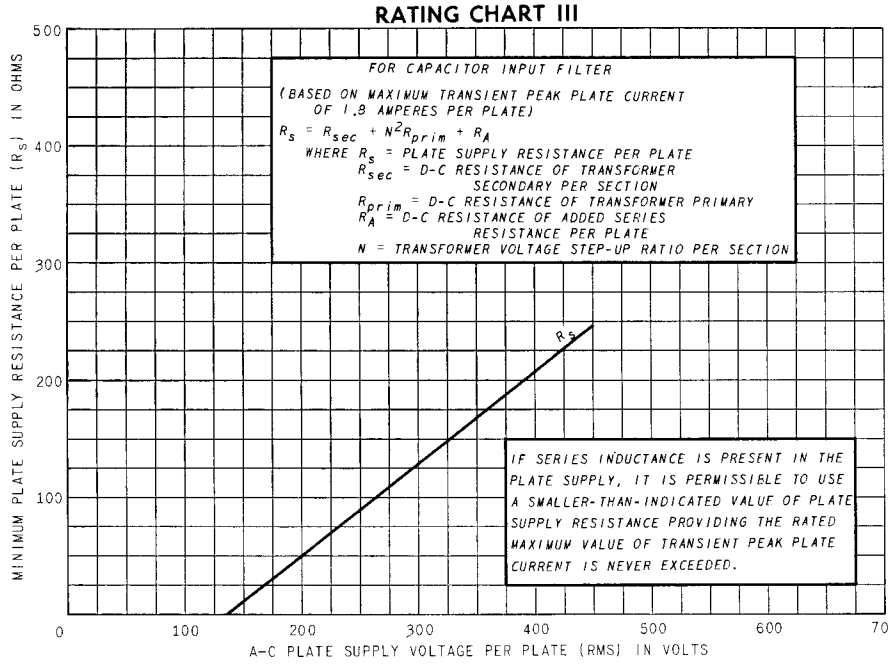
RATING CHART III



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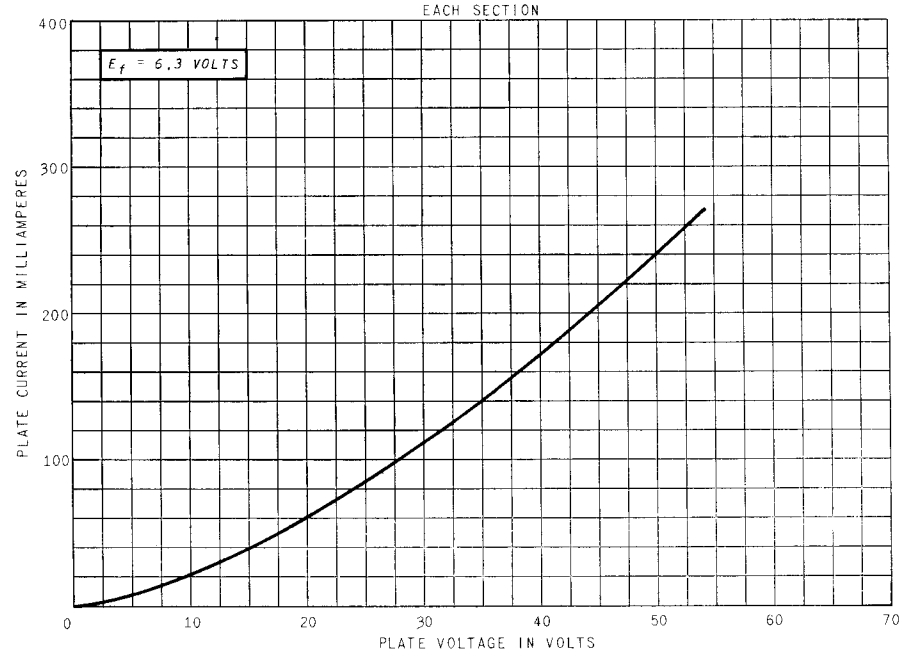
AVERAGE PLATE CHARACTERISTICS

EACH SECTION



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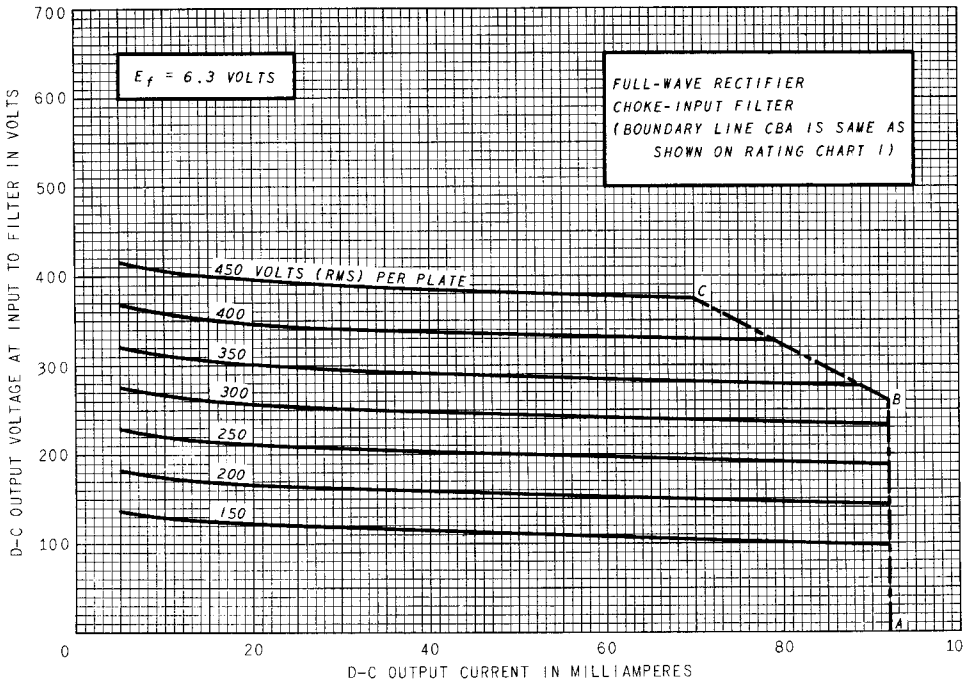
OPERATION CHARACTERISTICS



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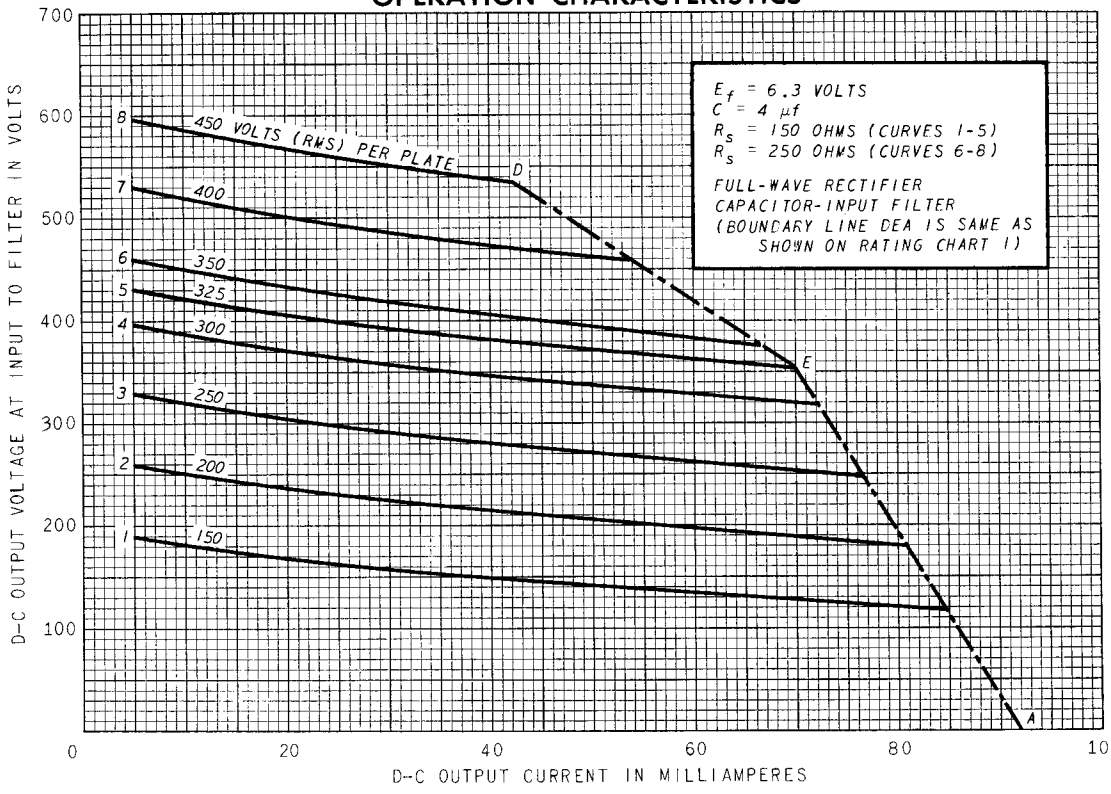

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TUBE DEPARTMENT
GENERAL ELECTRIC
Schenectady 5, N. Y.

4-53 (5M)