



6AX5-GT

# FULL-WAVE VACUUM RECTIFIER

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## GENERAL DATA

### Electrical:

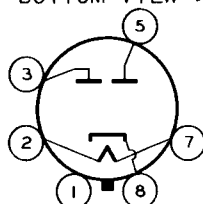
Heater, for Unipotential Cathode:

|                  |     |          |
|------------------|-----|----------|
| Voltage. . . . . | 6.3 | ac volts |
| Current. . . . . | 1.2 | amp      |

### Mechanical:

|                                             |                                      |
|---------------------------------------------|--------------------------------------|
| Mounting Position. . . . .                  | Any                                  |
| Maximum Overall Length. . . . .             | 3-5/16"                              |
| Maximum Seated Length. . . . .              | 2-3/4"                               |
| Maximum Diameter. . . . .                   | 1-9/32"                              |
| Bulb. . . . .                               | T-9                                  |
| Base. . . . .                               | Short-Intermediate-Shell Octal 6-Pin |
| Basing Designation for BOTTOM VIEW. . . . . | G-6S                                 |

- Pin 1—No Connection
- Pin 2—Heater
- Pin 3—Plate of Diode No.2



- Pin 5—Plate of Diode No.1
- Pin 7—Heater
- Pin 8—Cathode

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### Maximum Ratings, Design-Center Values:

|                                                  |                  |       |
|--------------------------------------------------|------------------|-------|
| PEAK INVERSE PLATE VOLTAGE. . . . .              | 1250 max.        | volts |
| PEAK PLATE CURRENT PER PLATE. . . . .            | 375 max.         | ma    |
| HOT-SWITCHING TRANSIENT PLATE CURRENT            |                  |       |
| For duration of 0.2 second maximum. . . . .      | 2.6 max.         | amp   |
| AC PLATE SUPPLY VOLTAGE (RMS) PER PLATE. . . . . | See Rating Chart |       |
| DC OUTPUT CURRENT PER PLATE. . . . .             | See Rating Chart |       |
| PEAK HEATER-CATHODE VOLTAGE:                     |                  |       |
| Heater negative with respect to cathode. . . . . | 450 max.         | volts |
| Heater positive with respect to cathode. . . . . | 450 max.         | volts |

### Typical Operation with Capacitor-Input Filter:

|                                               |     |     |       |
|-----------------------------------------------|-----|-----|-------|
| AC Plate-to-Plate Supply                      |     |     |       |
| Voltage (RMS). . . . .                        | 700 | 900 | volts |
| Filter-Input Capacitor <sup>▲</sup> . . . . . | 10  | 10  | μf    |
| Effective Plate-Supply Impedance              |     |     |       |
| Per Plate. . . . .                            | 50  | 105 | ohms  |
| DC Output Voltage at Input to                 |     |     |       |
| Filter (Approx.):                             |     |     |       |
| At half-load cur. of { 62.5 ma. . . . .       | 395 | —   | volts |
| 40 ma. . . . .                                | —   | 540 | volts |
| At full-load cur. of { 125 ma. . . . .        | 350 | —   | volts |
| 80 ma. . . . .                                | —   | 490 | volts |
| Voltage Regulation (Approx.):                 |     |     |       |
| Half-load to full-load current. . . . .       | 45  | 50  | volts |

<sup>▲</sup> Higher values of capacitance than indicated may be used but the effective plate supply impedance may have to be increased to prevent exceeding the maximum rating for hot-switching transient plate current.

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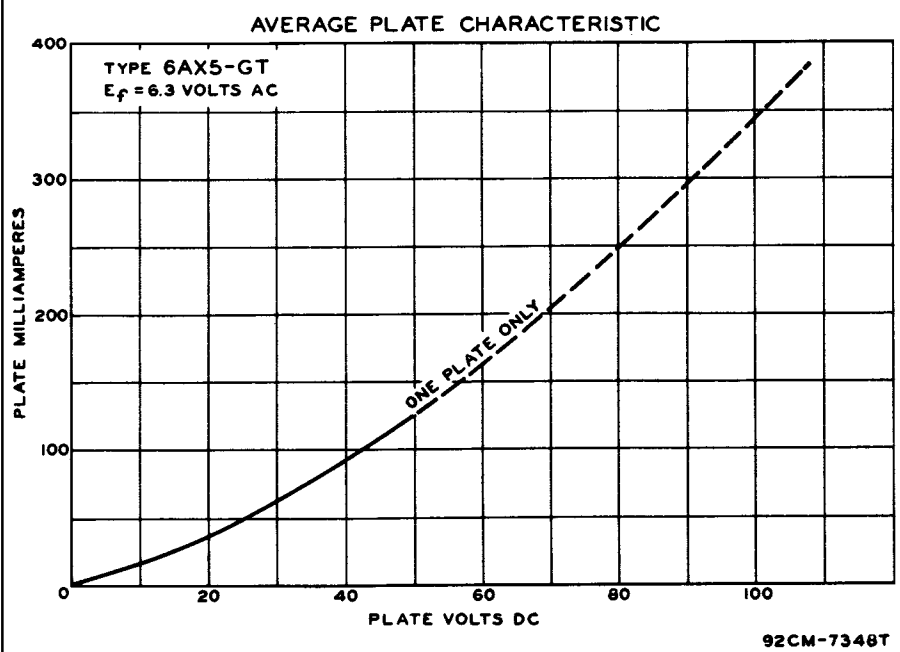


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## FULL-WAVE VACUUM RECTIFIER

### Typical Operation with Choke-Input Filter:

|                                                 |          |     |           |
|-------------------------------------------------|----------|-----|-----------|
| AC Plate-to-Plate Supply                        |          |     |           |
| Voltage (RMS)                                   | 700      | 900 | volts     |
| Filter-Input Choke                              | 10       | 10  | henries   |
| DC Output Voltage at Input to Filter (Approx.): |          |     |           |
| At half-load cur. of                            | 75 ma.   | 270 | volts     |
|                                                 | 62.5 ma. | -   | 365 volts |
| At full-load cur. of                            | 150 ma.  | 250 | volts     |
|                                                 | 125 ma.  | -   | 350 volts |
| Voltage Regulation (Approx.):                   |          |     |           |
| Half-load to full-load Current                  | 20       | 15  | volts     |



### RATING CHART and OPERATION CHARACTERISTICS

The *Rating Chart* presents graphically the relationships between maximum ac voltage input and maximum dc output current derived from the fundamental ratings for conditions of capacitor-input and choke-input filters. This graphical presentation gives the equipment designer considerable latitude in choice of operating conditions.

The *Operation Characteristics for Full-Wave Circuit with Capacitor-Input Filter* show not only the typical operating curves for such a circuit, but also show by means of boundary lines "ADK" the limiting current and voltage relationships presented on the Rating Chart.



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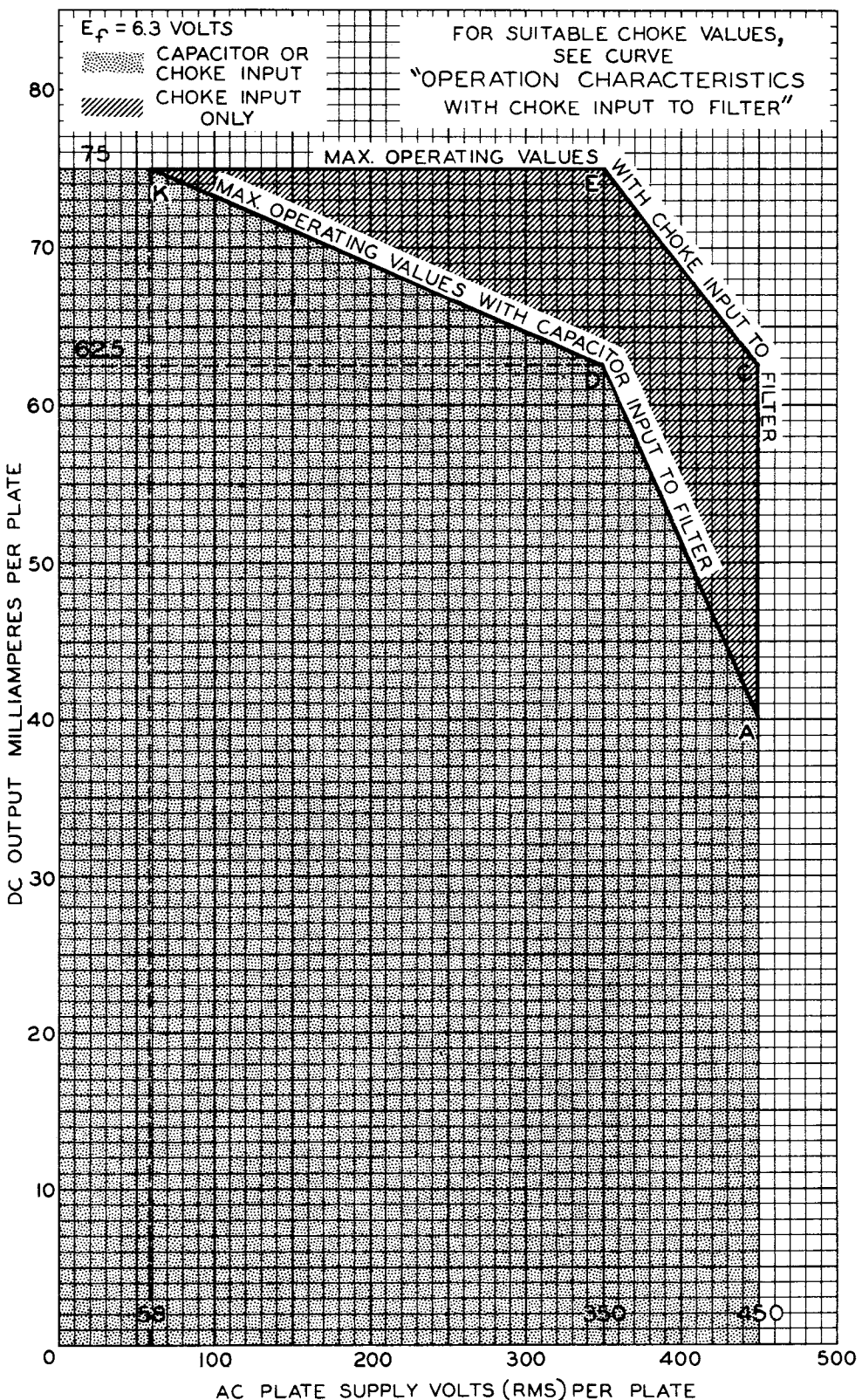
The *Operation Characteristics for Full-Wave Circuit with Choke-Input Filter* show the typical operating curves for such a circuit. They not only show by means of boundary line "CEK" the limiting current and voltage relationships presented on the *Rating Chart*, but also give information as to the effect on regulation of various sizes of chokes. The solid-line curves show the dc voltage outputs which would be obtained if the filter chokes had infinite inductance. The long-dash lines radiating from the zero position are boundary lines for various sizes of chokes as indicated. The intersection of one of these lines with a solid-line curve indicates the point on the curve at which the choke no longer behaves as though it has infinite inductance. To the left of the choke boundary line, the regulation curves depart from the solid-line curves as shown by the representative short-dash regulation curves.

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# RATING CHART

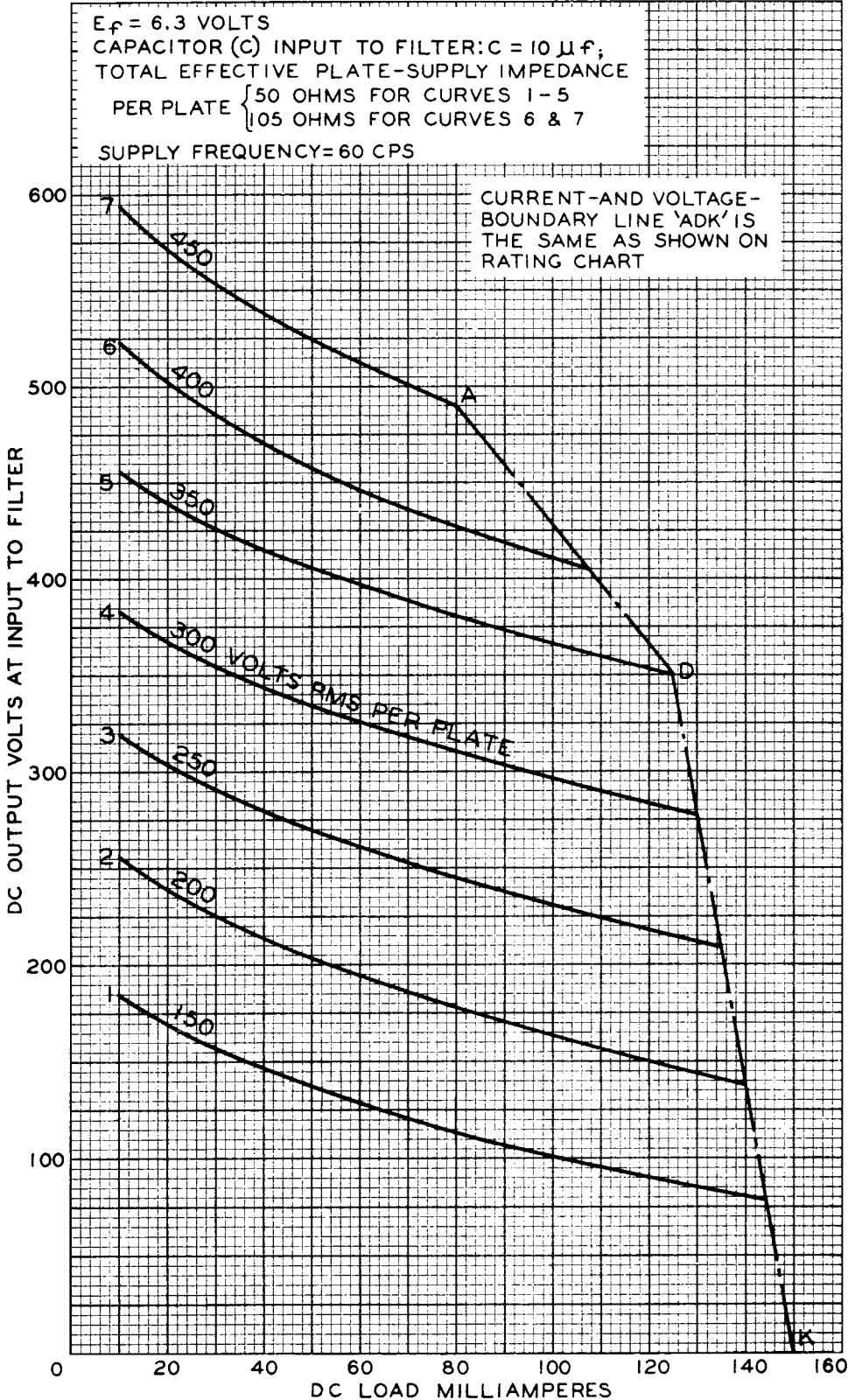




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### OPERATION CHARACTERISTICS FULL-WAVE CIRCUIT, CAPACITOR INPUT TO FILTER



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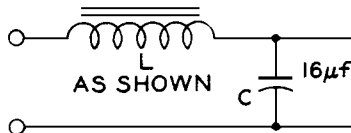


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## OPERATION CHARACTERISTICS

FULL-WAVE CIRCUIT, CHOKE INPUT TO FILTER

$E_f = 6.3$  VOLTS      SUPPLY FREQUENCY = 60 CPS  
 SOLID-LINE CURVES = CHOKES OF INFINITE INDUCTANCE  
 LONG-DASH LINES = BOUNDARY LINES FOR CHOKE SIZES AS SHOWN  
 SMALL-DASH CURVES = REGULATION CURVES FOR REPRESENTATIVE CHOKE SIZES  
 CURRENT-AND-VOLTAGE BOUNDARY LINE 'CEK' IS THE SAME AS SHOWN ON RATING CHART



DC OUTPUT VOLTS AT INPUT TO FILTER

