FULL WAVE HIGH VACUUM RECTIFIER

UNIPOTENTIAL CATHODE

FOR
RECTIFIER SERVICE IN
BATTERY OPERATED OR
AC RECEIVERS

GLASS BULB
INTERMEDIATE SHELL
6 PIN OCTAL BASE E6-8
OUTLINE DRAWING
JEDEC 9-11

THE 6X5GT IS DESIGNED FOR SERVICE IN STORAGE BATTERY OR AC OPERATED RECEIVERS.

HEATER CHARACTERISTICS AND RATINGS
DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS
6.3 VOLTS
600 MA.

HEATER SUPPLY LIMITS:
VOLTAGE OPERATION
6.3 ± 0.6 VOLTS

MAXIMUM HEATER-CATHODE VOLTAGE:
HEATER NEGATIVE WITH RESPECT TO CATHODE
DC
450 VOLTS
TOTAL DC AND PEAK
450 VOLTS

HEATER POSITIVE WITH RESPECT TO CATHODE
DC
100 VOLTS
TOTAL DC AND PEAK
200 VOLTS

MAXIMUM RATINGS
DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

PEAK INVERSE PLATE VOLTAGE
1250 VOLTS

STEADY-STATE PEAK PLATE CURRENT
(see rating chart 2)
245 MA.

TRANSIENT PEAK PLATE CURRENT PER PLATE
(see rating chart 3)
1.1 AMP.

DC OUTPUT CURRENT PER PLATE
(see rating chart 1)

AC PLATE VOLTAGE PER PLATE (RMS):
CAPACITOR INPUT
(see rating chart 1)

CHOKE INPUT
(see rating chart 1)

VIBRATOR OPERATION (MIN. DUTY CYCLE OF 75%):
DC OUTPUT VOLTAGE AT FILTER INPUT
350 VOLTS

DC OUTPUT CURRENT PER PLATE
45 MA.
CONTINUED FROM PRECEDING PAGE

--- TYPICAL OPERATING CHARACTERISTICS
FULL-WAVE RECTIFIER

<table>
<thead>
<tr>
<th></th>
<th>SINE-WAVE OPERATION</th>
<th>VIBRATOR OPERATION</th>
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</thead>
<tbody>
<tr>
<td>CAPACITOR INPUT TO FILTER:</td>
<td></td>
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<tr>
<td>AC PLATE VOLTAGE PER PLATE (RMS, NO LOAD)</td>
<td>325</td>
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<tr>
<td>INPUT CAPACITOR</td>
<td>10</td>
<td>10</td>
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<tr>
<td>TOTAL EFFECTIVE PLATE SUPPLY IMPEDANCE PER PLATE</td>
<td>525</td>
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<tr>
<td>DC OUTPUT CURRENT</td>
<td>70</td>
<td>70</td>
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<tr>
<td>DC OUTPUT VOLTAGE AT FILTER INPUT (APPROX.)</td>
<td>310</td>
<td>240</td>
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| CHOKE INPUT TO FILTER: |                     |                    |
| AC PLATE VOLTAGE PER PLATE (RMS, NO LOAD) | 400 | --- | VOLTS |
| INPUT CHOKE             | 10                  | --- | HENRYs |
| DC OUTPUT CURRENT       | 70                  | --- | MA.   |
| DC OUTPUT VOLTAGE AT FILTER INPUT (APPROX.) | 340 | --- | VOLTS |
| TUBE VOLTAGE DROP AT 70 MA. PER PLATE | 22 | --- | VOLTS |

WHEN THE HEATER IS OPERATED IN AUTOMOTIVE SERVICE FROM A 6-VOLT BATTERY SOURCE, THE PERMISSIBLE RANGE IN HEATER VOLTAGE IS FROM 5.0 TO 8.0 VOLTS.

--- INDICATES A CHANGE.
6X5GT
HEATER: RATED

STEADY-STATE PEAK PLATE CURRENT PER PLATE = 245 MILLIAMPERES

RECTIFICATION EFFICIENCY = \( \frac{E}{\sqrt{2E_S}} \)

WHERE \( E \) = DC OUTPUT VOLTS AT INPUT TO FILTER
\( E_S \) = AC PLATE SUPPLY VOLTS (RMS) PER PLATE

RATING CHART 2

AREA OF PERMISSIBLE OPERATION

6X5GT
HEATER: RATED

TRANSIENT PEAK PLATE CURRENT PER PLATE = 1.1 AMPERES

PLATE-SUPPLY RESISTANCE PER PLATE = \( R_{SEC} \cdot N^2 \cdot R_{PRI} + R_A \)

WHERE \( R_{SEC} \) = DC RESISTANCE OF TRANSFORMER SECONDARY PER SECTION
\( R_{PRI} \) = DC RESISTANCE OF TRANSFORMER PRIMARY
\( R_A \) = DC RESISTANCE OF ADDED SERIES RESISTANCE PER PLATE
\( N \) = TRANSFORMER VOLTAGE STEP-UP RATIO PER SECTION

RATING CHART 3

MINIMUM PLATE-SUPPLY RESISTANCE PER PLATE - OHMS

AC PLATE SUPPLY VOLTS (RMS) PER PLATE NO LOAD

500

400

300

200

100

0

500

400

300

200

100

0