632-B
MERCURY-VAPOR THYRATRON
NEGATIVE-CONTROL TETRODE TYPE

GENERAL DATA

Electrical:
Heater, for Unipotential Cathode:
Voltage: 5* ac or dc volts
Current: 5 amp

Cathode:
Minimum heating time prior to tube conduction: 5 minutes

Direct Interelectrode Capacitances (Approx.):
Grid No. 1 to anode: 0.04 μf
Grid No. 2 to anode: 3 μf
Ionization Time (Approx.): 10 μsec
Deionization Time (Approx.): 1000 μsec
Maximum Critical Grid-No. 1 Current: 2 μamp
Anode Voltage Drop (Approx.): 12 volts

Mechanical:
Mounting Position: Vertical, base down
Maximum Overall Length: 8-5/16" ± 7-1/2" ± 1/4"
Seat Length: 1-3/4"
Maximum Radius (Including side cap): 9 oz
Weight (Approx.):
Bulb: T-18
Top Cap: Skirted Medium (JETEC No.C1-29)
Saddle Medium
Side Cap: Skirted-Medium Shell Small 4-Pin with Bayonet (JETEC No.A4-71)
Base:

Basing Designation for BOTTOM VIEW: 4CD

Pin 1-Heater
Pin 2-Cathode
Pin 3-Grid No. 2
Pin 4-Heater,
Cathode
Top Cap-Anode
Side Cap-Grid No. 1

Temperature Control:

Heating--When the ambient temperature is so low that the normal rise of condensed-mercury temperature above the ambient temperature will not bring the condensed-mercury temperature up to the minimum value of the operating range specified under Maximum Ratings, some form of heat-conserving enclosure or auxiliary heater will be required.

Cooling--When the operating conditions are such that the maximum value of the operating condensed-mercury temperature is exceeded, provision should be made for forced-air cooling sufficient to prevent exceeding the maximum value.

* Under operating conditions where the average anode current does not exceed 0.5 ampere, the heater voltage may be increased to 5.5 volts.
# Mercury-Vapor Thyatron

## Ignitor-Firing and Grid-Controlled Rectifier Service

### Maximum Ratings, Absolute Values:

For anode-supply frequency of 60 cps

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Condensed-Mercury</td>
<td></td>
</tr>
<tr>
<td>Temperature Range</td>
<td>40° to 80°C</td>
</tr>
<tr>
<td><strong>Peak Anode Voltage:</strong></td>
<td></td>
</tr>
<tr>
<td>Forward</td>
<td>1500 max. volts</td>
</tr>
<tr>
<td>Inverse</td>
<td>1500 max. volts</td>
</tr>
<tr>
<td><strong>Grid-No.2 (Shield-Grid) Voltage:</strong></td>
<td></td>
</tr>
<tr>
<td>Peak, before tube conduction</td>
<td>-300 max. volts</td>
</tr>
<tr>
<td><strong>Grid-No.1 (Control-Grid) Voltage:</strong></td>
<td></td>
</tr>
<tr>
<td>Peak, before tube conduction</td>
<td>-1000 max. volts</td>
</tr>
<tr>
<td><strong>Cathode Current:</strong></td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>30 max. amp</td>
</tr>
<tr>
<td>Average</td>
<td>2.5 max. amp</td>
</tr>
<tr>
<td>Fault, for duration of 0.1 second max.</td>
<td>150 max. amp</td>
</tr>
<tr>
<td><strong>Average Grid-No.2 Current</strong></td>
<td>+0.25 max. amp</td>
</tr>
<tr>
<td><strong>Average Grid-No.1 Current</strong></td>
<td>+0.25 max. amp</td>
</tr>
</tbody>
</table>

*Recommended temperature range of condensed mercury is 45°C to 50°C.*

* Averaged over any interval of 30 seconds maximum.

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### Diagram

- Skirted Medium Cap
- JETEC No. CI-29
- Zone where condensed-mercury temperature should be measured
- 1\(\frac{3}{4}''\) max.
- 7\(\frac{1}{2}''\) ± 1\(\frac{1}{4}''\)
- 8\(\frac{5}{16}''\) max.
- Skirted-Medium-SHELL small 4-pin shell with Bayonet JETEC No. A4-71

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TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
OPERATIONAL RANGES OF CRITICAL GRID-N21 VOLTAGE

E₂ = 5 VOLS
GRID-N2 (SHIELD) VOLTS = 0
RANGE SHOWN TAKES INTO ACCOUNT INITIAL DIFFERENCES BETWEEN INDIVIDUAL TUBES AND SUBSEQUENT DIFFERENCES DURING TUBE LIFE.
GRID RESISTOR = 0 OHMS
CONDENSED-MERCURY TEMPERATURE RANGE = 40° TO 80°C

CRITICAL
CONDUCTING
NON-CONDUCTING

PEAK ANODE VOLTS

DC GRID-N21 SUPPLY VOLTS

E₂ = 5 VOLS
GRID-N2 (SHIELD) VOLTS = 10
RANGE SHOWN TAKES INTO ACCOUNT INITIAL DIFFERENCES BETWEEN INDIVIDUAL TUBES AND SUBSEQUENT DIFFERENCES DURING TUBE LIFE.
GRID RESISTOR = 0 OHMS
CONDENSED-MERCURY TEMPERATURE RANGE = 40° TO 80°C

CRITICAL
CONDUCTING
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PEAK ANODE VOLTS

DC GRID-N21 SUPPLY VOLTS