DESCRIPTION

The 6028* is miniature type pentode having an indirectly heated cathode. It is designed for use in amplifier circuits at high and ultra high frequencies.

MECHANICAL DATA

Cathode .................................. Coated Unipotential
Outline .................................. 5-1
Bulb ...................................... T 5-1/2
Base ....................................... E7-1 miniature button 7-pin
Mounting positions ....................... Any
Maximum bulb diameter ................... 3/4 inch
Maximum overall length ................... 1-3/4 inch
Maximum seated height ................. 1-1/2 inch
Pin connections ......................... Basing No. 7BD
Pin #1 Grid #1
Pin #2 Cathode, grid #3 &
   internal shield
Pins #3 & #4 Heater
Pin #5 Plate
Pin #6 Grid #2
Pin #7 Cathode, Grid #3
   & internal shield

ELECTRICAL DATA

Heater voltage .......................... 20 volts
Heater current .......................... 50 milliamperes
Direct interelectrode capacitances      without with
   external external
   shield  shield #316(a)
Grid to plate (g1 to p) maximum .03 .02 uuf
Input: g1 to (h+k+g2+g3+i.s.) 4.0 4.0 uuf
Output: p to (h+k+g2+g3+i.s.) 2.1 2.8 uuf
   (a) External shield #316 connected to pins #2 and #7

MAXIMUM RATING, DESIGN CENTER VALUES

Plate voltage .......................... 180 volts
Grid #2 voltage ........................ See J5-CL
Grid #2 supply voltage ................. 180 volts
Positive d-c grid #1 voltage ............ 0 volts
Heater cathode voltage .................. 75 volts
Cathode current ........................ 18 milliamperes
Plate dissipation ....................... 1.7 watts
Grid #2 dissipation .................... 0.5 watts

*6028/408A

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from RTMA releases #990, June 28, 1951 & 990A, Aug. 30, 1951
**Typical Operating Conditions and Characteristics, Class A1 Amplifier**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate voltage</td>
<td>120 volts</td>
</tr>
<tr>
<td>Grid #2 voltage</td>
<td>120 volts</td>
</tr>
<tr>
<td>Grid bias resistor</td>
<td>180 ohms</td>
</tr>
<tr>
<td>Plate resistance (approx.)</td>
<td>0.30 megohm</td>
</tr>
<tr>
<td>Transconductance</td>
<td>5000 umhos</td>
</tr>
<tr>
<td>Plate current</td>
<td>7.5 milliamperes</td>
</tr>
<tr>
<td>Grid #2 current</td>
<td>2.5 milliamperes</td>
</tr>
<tr>
<td>Grid #1 voltage for I_b = 10 ua</td>
<td>-8.5 volts</td>
</tr>
</tbody>
</table>

*6028/408A*

May 21, 1951
MECHANICAL DATA

Coated unipotential cathode

Outline drawing: ...5-1...Bulb: ...T-5-1/2
Base: ...E7-1 miniature button 7-pin
Maximum diameter: ...3/4"
Maximum overall length: ...1-3/4"
Maximum seated height: ...1-1/2"
Pin connections: ...Basing 7BD

Pin 1 - Grid #1
Pin 2 - Cathode, grid #3, internal shield
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Plate
Pin 6 - Grid #2
Pin 7 - Cathode, grid #3, internal shield

Mounting position: any

ELECTRICAL DATA

Direct Interelectrode Capacitances

<table>
<thead>
<tr>
<th></th>
<th>Without Shield</th>
<th>With Shield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to plate: (g1 to p) max.</td>
<td>0.03 μf</td>
<td>0.02 μf</td>
</tr>
<tr>
<td>Input: g1 to (h+kg2+g3+i.s.)</td>
<td>4.0 μf</td>
<td>4.0 μf</td>
</tr>
<tr>
<td>Output: p to (h+kg2+g3+i.s.)</td>
<td>2.1 μf</td>
<td>2.8 μf</td>
</tr>
</tbody>
</table>

*External shield #316 connected to pins 2 and 7.

Ratings

Heater voltage...20 volts
Maximum heater-cathode voltage...75 volts
Maximum plate voltage...180 volts
Maximum grid #2 voltage...See J5-C4
Maximum grid #2 supply voltage...180 volts
Maximum plate dissipation...1.7 watts
Maximum positive dc grid #1 voltage...0 volts
Maximum cathode current...18 ma
Maximum Grid #2 dissipation...0.5 watts

Typical Operating Conditions and Characteristics, Class A1 Amplifier

Heater voltage...20 volts
Heater current...50 ma
Plate voltage...120 volts
Grid #2 voltage...120 volts
Cathode resistor...180 ohms
Plate resistance (approx.)...0.3 megohms
Transconductance...5000 μmhos
Plate current...7.5 ma
Grid #2 current...2.5 ma
Grid #1 voltage (approx.) for Id = 10 μa...-8.5 volts

Refer to "Interpretation of Receiving Tube Ratings"