Type 6ED7

Double Diode-Triode for A.F. Amplification, Detection and A.G.C.

Physical Specifications

Cathode Coated unipotential
Base Small buttonoval 9-pin
Bulb T 6½
Maximum overall length 2-5/8 inches
Maximum seated height 2-3/8 inches
Bulb length excluding tip 2±3/32 inches
Maximum diameter 7/8 inches
Mounting position any
Basing connections - JETEC basing designation 9Z-0-7

Pin 1 - Plate
Pin 2 - Grid
Pin 3 - Cathode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Diode No. 1
Pin 7 - Internal shield
Pin 8 - Diode No. 2
Pin 9 - Internal connection

General Electrical Data

Heater voltage 6.3 volts
Heater current 0.23 amperes

Direct interelectrode capacitances

Triode plate to cathode 1.3 µF
Grid to cathode 2.4 µF
Triode plate to grid 1.3 µF
Grid to heater max. 0.05 µF
Diode No.1 to cathode 0.8 µF
Diode No.2 to cathode 0.75 µF
Diode No.1 to heater max. 0.3 µF
Diode No.2 to heater max. 0.05 µF
Diode No.1 to diode No.2 max. 0.05 µF

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from RMA release #837, March 15, 1950
Direct interelectrode capacitances (continued)

Diode No.1 to grid                        max. 0.01 μμF
Diode No.2 to grid                        max. 0.01 μμF
Diode No.1 to triode plate               max. 0.005 μμF
Diode No.2 to triode plate               max. 0.015 μμF

Maximum Ratings

Triode section

Plate voltage (without current)           550 volts
Plate voltage                            300 volts
Plate dissipation                        0.5 watts
Cathode current                          5 milli-amps
Grid voltage at grid current = +0.3 μa    -1.3 volts
External resistance between grid and cathode 3 megohms¹)
External resistance between heater and cathode 20,000 ohms
Voltage between heater and cathode        100 volts

Diode section

Plate voltage (peak value)                200 volts
Plate current                            0.8 milli-amps
Plate voltage at plate current = +0.3 μa  -1.3 volts
External resistance between heater and cathode 20,000 ohms
Voltage between heater and cathode        100 volts

TYPICAL CHARACTERISTICS OF THE TRIODE SECTION

Plate voltage                            250 volts
Grid voltage                             -3 volts
Plate current                            1.0 milli-amps
Transconductance                         1200 micromhos
Gain factor                              70
Plate resistance                         58,000 ohms

¹) The maximum value of this resistance is 22 megohms when the grid bias is only obtained by the voltage drop across the grid leak.

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Type 6BD7
(Continued)

OPERATING CONDITIONS OF THE TRIODE SECTION

Supply voltage = 250 volts

<table>
<thead>
<tr>
<th>Component</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Value 3</th>
<th>Value 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate resistor</td>
<td>0.22</td>
<td>0.1</td>
<td>0.22</td>
<td>0.1</td>
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<tr>
<td>Cathode resistor</td>
<td>1800</td>
<td>1200</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Grid leak</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>10</td>
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<tr>
<td>Grid leak of the output</td>
<td>0.68</td>
<td>0.33</td>
<td>0.68</td>
<td>0.33</td>
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<tr>
<td>output tube</td>
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<td></td>
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<tr>
<td>Plate current</td>
<td>0.70</td>
<td>1.15</td>
<td>0.76</td>
<td>1.40</td>
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<tr>
<td>Gain</td>
<td>51</td>
<td>43</td>
<td>52</td>
<td>44</td>
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<tr>
<td>Distortion at an output</td>
<td>0.55</td>
<td>0.6</td>
<td>0.5</td>
<td>0.7</td>
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<tr>
<td>voltage of 5 volts rms</td>
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<tr>
<td>Distortion at an output</td>
<td>0.9</td>
<td>1.1</td>
<td>0.75</td>
<td>0.9</td>
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<tr>
<td>voltage of 10 volts rms</td>
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</tbody>
</table>

In circuits with a 5% speaker, this tube may be used without special precautions against microphonic effect, if the input voltage for an output of 50 milliwatts of the output tube exceeds 10 milli-volts.
Plate voltage = 250 volts