BEAM POWER TUBE
7-PIN MINIATURE TYPE

GENERAL DATA

Electrical:
Heater, for Unipotential Cathode:
Voltage (AC or DC) ................. 50 + 10% volts
Current .................................. 0.15 amp
Direct Interelectrode Capacitances
(Approx.)
Grid No.1 to plate............... 0.6 μf
Grid No.1 to cathode & grid No.3, grid No.2, and heater ..... 13 μf
Plate to cathode & grid No.3, grid No.2, and heater ...... 8.5 μf

Mechanical:
Operating Position................... Any
Maximum Overall Length ............ 2-5/8" 
Maximum Seated Length ............. 2-3/8" 
Length, Base Seat to Bulb Top (Excluding tip) . . . . . . . 2" ± 3/32"
Diameter ................................ 0.650" to 0.750"
Dimensional Outline ................. See General Section
Bulb .................................. T5-1/2
Base .................................. Small Button MINIATURE 7-Pin (JEDEC No.E7-1)
Basing Designation for BOTTOM VIEW ............. 7CV

Pin 1 - Cathode
Grid No.3 Pin 4 - Heater
Pin 2 - Grid No.1 Pin 5 - Grid No.1
Pin 3 - Heater Pin 6 - Grid No.2
Pin 7 - Plate

AMPLIFIER - Class A

Maximum Ratings, Design-Maximum Values:
PLATE VOLTAGE. .................. 150 max. volts
GRID-No.2 (SCREEN-GRID) VOLTAGE . . . . . . . . . . . . . . . . . . . . . 130 max. volts
GRID-No.1 (CONTROL-GRID) VOLTAGE .................. 0 max. volts
GRID-No.2 INPUT. ................. 1.4 max. watts
PLATE DISSIPATION. ............... 7 max. watts
PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode .. 200 max. volts
Heater positive with respect to cathode ... 200 max. volts
BULB TEMPERATURE (At hottest point on bulb surface) .................. 220 max. °C
## Typical Operation and Characteristics:

<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-No.2 Voltage</td>
<td>110 volts</td>
</tr>
<tr>
<td>Grid-No.1 Voltage</td>
<td>-8 volts</td>
</tr>
<tr>
<td>Peak AF Grid-No.1 Voltage</td>
<td>8 volts</td>
</tr>
<tr>
<td>Zero-Signal Plate Current</td>
<td>49 ma</td>
</tr>
<tr>
<td>Max.-Signal Plate Current</td>
<td>50 ma</td>
</tr>
<tr>
<td>Zero-Signal Grid-No.2 Current</td>
<td>4 ma</td>
</tr>
<tr>
<td>Max.-Signal Grid-No.2 Current</td>
<td>8.5 ma</td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>10000 ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>7500 µhos</td>
</tr>
<tr>
<td>Load Resistance</td>
<td>2500 ohms</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>10 %</td>
</tr>
<tr>
<td>Max.-Signal Power Output</td>
<td>2.3 watts</td>
</tr>
</tbody>
</table>

## Maximum Circuit Values:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid-No.1-Circuit Resistance:</td>
<td></td>
</tr>
<tr>
<td>For fixed-bias operation</td>
<td>0.1 max. megohm</td>
</tr>
<tr>
<td>For cathode-bias operation</td>
<td>0.5 max. megohm</td>
</tr>
</tbody>
</table>

○ Without external shield.
▲ The dc component must not exceed 100 volts.

**NOTE:** Except for a different basing arrangement, which simplifies the problem of meeting Underwriters' Laboratories requirements in the design of ac/dc receivers, the 50C5 is similar to the miniature type 50B5.
AVERAGE CHARACTERISTICS

$E_p = 50 \text{ VOLTS}$

GRID-N52 VOLTS = 110

GRID-N2 MILLIAMPERES ($Ic_2$)

PLATE MILLIAMPERES ($Ib$)

PLATE VOLTS

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY