12DP-A CATHODE-RAY TUBES

The Type 12DP-A Cathode-ray Tubes are 12-inch magnetically focussed and deflected cathode-ray tubes, primarily designed for radar indicator applications. They feature a large screen area and a long persistence screen (although screens with any persistence characteristic may be ordered).

The Type 12DP-A is recommended only for replacement purposes.

GENERAL CHARACTERISTICS

Electrical

Heater Voltage ........................................ 6.3 Volts
Heater Current ...................................... 0.6 ± 10% Ampere
Focusing Method ..................................... Magnetic
Deflecting Method .................................... Magnetic
Deflecting Angle (Approx.) ......................... 50 Degrees
Phosphor .................................................. No. 7
  Fluorescence ........................................ Blue
  Phosphorescence .................................... Yellow
  Persistence .......................................... Long
Direct Interelectrode Capacitances, Approx.
  Cathode to all other electrodes .............. 6 μf.
  Grid No. 1 to all other electrodes .......... 9 μf.
  Grid No. 2 to all other electrodes ........ 7.5 μf.

Mechanical

Overall Length ........................................... 19⅝ ± ⅛ Inches
Greatest Diameter of Bulb ............................. 12 ± 3/16 Inches
Minimum Useful Screen Diameter .................... 10 Inches
Bulb Contact (Medium Cap) ......................... C1-5
Base (Medium-Shell Octal 8-Pin) .................... B8-65
Basing ......................................................... 5AN
Bulb Contact Alignment C1-5 cap aligns with pin No. 5 ± 10 Degrees

MAXIMUM RATINGS—(Design Center Values)

Anode Voltage ............................................. 10,000 Max. Volts D-C
Grid No. 2 Voltage ..................................... 700 Max. Volts D-C
Grid No. 1 Voltage
  Negative Bias Value .................................. 125 Max. Volts D-C
  Positive Bias Value¹ .................................. 0 Max. Volts D-C
  Positive Peak Value .................................. 2 Max. Volts
Peak Grid No. 1 Drive from Cut-off ..................... 65 Max. Volts
Peak Heater-Cathode Voltage
  Heater Negative with respect to cathode ........ 125 Max. Volts D-C
  Heater Positive with respect to cathode .......... 125 Max. Volts D-C

TYPICAL OPERATING CONDITIONS

<table>
<thead>
<tr>
<th>Anode Voltage</th>
<th>Grid No. 2 Voltage</th>
<th>Grid No. 1 Voltage²</th>
<th>Focusing Coil Current³</th>
<th>Spot Position⁴</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,000</td>
<td>7,000</td>
<td>250</td>
<td>99 to 135</td>
<td>20</td>
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<tr>
<td>7,000</td>
<td></td>
<td>250</td>
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Volts D-C
Volts D-C
Volts D-C
Ma. D-C
mm.
MAXIMUM CIRCUIT VALUES
Grid No. 1 Circuit Resistance ........................................................................... 1.5 Max. Megohms

MINIMUM CIRCUIT VALUES
When the output capacitor of the power supply is capable of storing more than 250 microcoulombs, and when the inherent regulation of the power supply permits the instantaneous short-circuit current to exceed 1 ampere, the effective resistance in the circuit between the indicated electrode and the output capacitor should be as follows:
Grid No. 1 Circuit Resistance ........................................................................... 150 Min. Ohms
Grid No. 2 Circuit Resistance ........................................................................... 820 Min. Ohms
Anode Circuit Resistance ..................................................................................... 11,000 Min. Ohms

NOTES
1. At or near this rating, the effective resistance of the anode supply should be adequate to limit the anode input power to 6 watts.
2. Visual extinction of undeflected focused spot.
3. For JETEC standard focus coil No. 106, or equivalent, with the Grid No. 1 voltage adjusted to produce an anode current of 200 microamperes and with distance (D) from reference line to center of air gap equal to 4.125 inches.
4. The center of the undeflected, unfocused spot will fall within a circle of 20 mm. radius concentric with the center of the tube face.

12DP-A
AVERAGE CHARACTERISTICS
FILAMENT VOLTAGE = 6.3 VOLTS
GRID NO. 1 VOLTAGE BIASED TO CUT-OFF
GRID NO. 2 VOLTAGE = 250 VOLTS
ACCELERATOR VOLTAGE = 7000 TO 10,000 VOLTS

Anode current, microamperes

-45 -35 -25 -15 -5 0
Grid No. 1 Volts

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TYPE 12DP-A

10 MIN USEFUL SCREEN DIA

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10 1/2

8 5/8

50°

950 MAX. EFFECTIVE CENTER OF DEFLECTION

3 3/16 MAX

REFERENCE LINE
POINT WHERE 1430 ± .003 INCH DIAMETER RING GAUGE, 2 INCHES LONG WILL STOP

3 5/16

1 3/8

1 1/4

3/16 MAX

MEDIUM SHELL OCTAL 8-PIN BASE (B8-65)

ANODE CAP (CI-5)

PIN NO ELEMENT
2 - HEATER
3 - GRID NO 2
5 - GRID NO 1
7 - CATHODE
8 - HEATER CAP - ANODE

BOTTOM VIEW OF TUBE

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