The 10AKP7 is a magnetic-focus and deflection type cathode-ray tube. This type features electron gun capabilities such as smaller spot size, high resolution and excellent depth of focus. This type is best suited for applications that require a long-persistence characteristic as in radar and oscillographs.

**MECHANICAL DATA**

- **MINIMUM USEFUL SCREEN DIAMETER:** 9 inches
- **BASE:** Small-shell Duodecal 5-Pin JEDEC No. B5—S7 or Small-shell Duodecal 7-Pin JEDEC No. B7—51
- **BASING:** JEDEC Designation—12D
- **ANODE CONTACT:** Recessed Small-cavity Cap. JEDEC No. J1—21
- **BULB NO.:** ASA Designation—J84C
- **TERMINAL CONNECTIONS:**
  - Pin 1: Heater
  - Pin 10: Grid #2
  - Pin 2: Grid #1
  - Pin 11: Cathode
  - Cap: Grid #3, Anode
  - Pin 12: Heater
- **BULB CONTACT ALIGNMENT:** Anode Contact Aligns with Pin No. 3 Position ±10 Degrees
- **MOUNTING POSITION:** Any

**GENERAL DATA**

- Persistence: Long
- Fluorescent Color: Blue-White
- Phosphor number: P7
- Phosphorescent color: Yellow
- Faceplate: Gray
- Light Transmission at Center: 77 percent approximate
- Focusing Method: Magnetic
- Deflection Method: Magnetic
- Deflection Angle, Approx.: 50°

**ELECTRICAL DATA**

**DIRECT INTERELECTRODE CAPACITANCE:** (approx.) (μfd.

- Cathode to all: 5
- Grid #1 to all: 8

**DESIGN CENTER MAXIMUM RATING:** (Note 1)

- **Heater Voltage:** 6.3 volts
- **Heater Current:** 0.6 ± 10% amperes
- **Anode Voltage Grid #3:** 10,000 volts DC max.
- **Grid #2 Voltage:** 1000 volts DC max.
- **Grid #1 Voltage:**
  - Negative Bias Value: 180 volts DC max.
  - Positive Bias Value: 0 volts DC max.
  - Positive Peak Value: 2 volts max.
- **Peak Grid #1 Drive from Cutoff:** 65 volts max.
- **Peak Heater–Cathode Voltages (Note 2):**
  - Heater Negative with Respect to Cathode: 180 volts max.
  - Heater Positive with Respect to Cathode: 180 volts max.

**CHARACTERISTICS AND TYPICAL OPERATION:**

- **Anode Voltage (Note 3):** 8000 volts DC
- **Grid #2 Voltage:** 700 volts DC
- **Grid #1 Voltage (Note 4):** -20 to -80 volts DC
- **Focusing-Coil Current, Approx. (Note 5):** 105 mADC
- **Line Width (Note 6):** 30 mm max.
- **Spot Position (Note 7):** 18 mm

**MAXIMUM CIRCUIT VALUE:**

- **Grid #1 Circuit Resistance:** 1.5 megohms max.

**NOTE:**

- **INDUSTRIAL COMPONENTS DIVISION**

Tentative Data

Raytheon Company

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55 Chapel St., Newton 58, Mass.
ELECTRICAL DATA (Cont’d.)

Note 1: A 10% safety factor is incorporated within the maximum ratings according to the standard cathode ray tube design—center system. If the maximum design—center values are not exceeded by more than ten per cent, the tube will sustain the combined effects of line voltage and component variation.

Note 2: Cathode should be returned to the center tap or one side of the heater transformer winding.

Note 3: Anode voltage, in general, should not be less than 5000 volts. With decreasing anode voltage, brightness and focus quality decrease.

Note 4: For visual extinction of undeflected focused spot.

Note 5: Distance from the yoke reference line to center of air gap is equal to 3 1/4 inches using RETMA focusing coil No. 106.

Note 6: Measured according to MIL-E-1, paragraph 4.12.6.2 at an anode current of 200 µA.

Note 7: The center of the unfocused, undeflected spot will fall within an 18 mm circle concentric with the tube face.

Note 1: Reference line is determined by the plane of the upper edge of the reference—line gage (RETMA No. 112) when the gage is resting on the cone.

Note 2: Anode terminal aligns with Pin No. 3 Position ± 10 degrees.