RAYTHEON

TECHNICAL INFORMATION

CATHODE RAY TUBE

Excellence in Electronics

TYPE 10AKP7

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. B5–57 or
Small–shell Duodecal 7–Pin JEDEC No. B7–51

BASING: JEDEC Designation – 12D

ANODE CONTACT: Recessed Small–cavity Cap. JEDEC No. J1–21

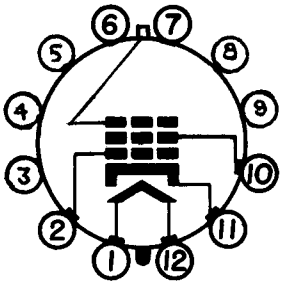
BULB NO.: ASA Designation–J84C

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



BOTTOM VIEW

12D

GENERAL DATA

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

ELECTRICAL DATA

DIRECT INTERELECTRODE CAPACITANCE: (approx.) (μμfds.)

Cathode to all	5
Grid #1 to all	8

DESIGN CENTER MAXIMUM RATINGS: (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.
Peat 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.

Tentative Data

inted in U.S.A.

ELECTRICAL DATA (Cont'd.)

Note 1: A 10% safety factor is encorporated 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.

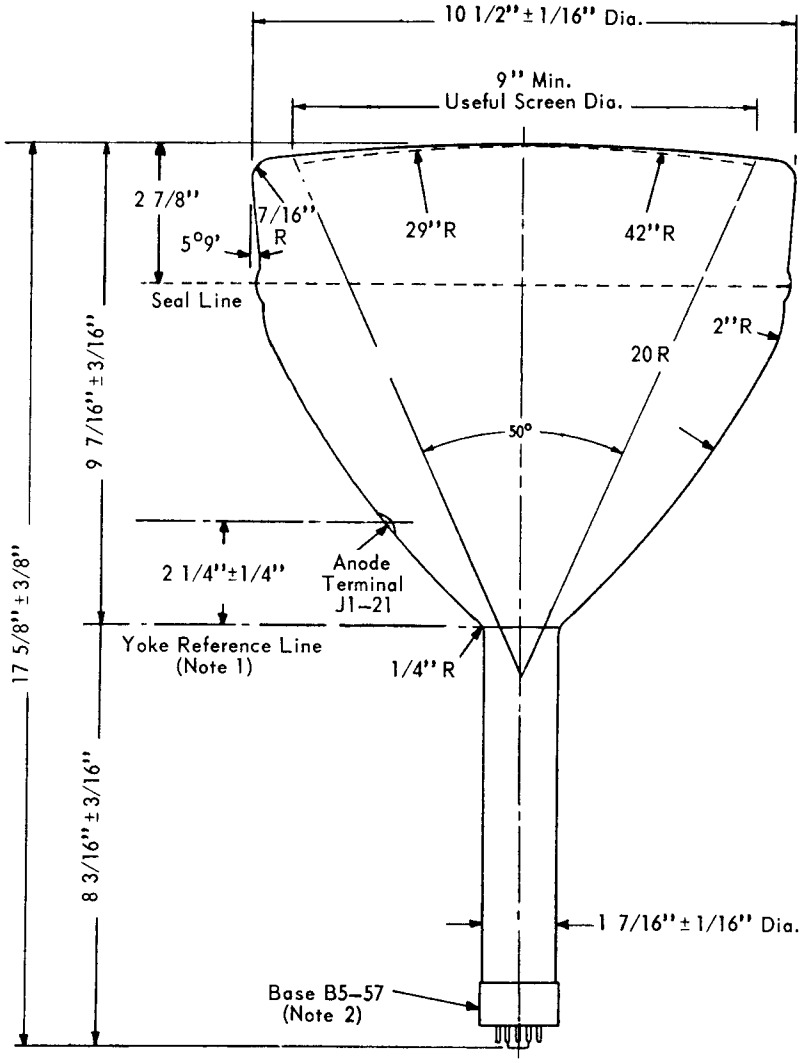
Note 3: Anode voltage, in general, should not be less than 5000 volts. With decreasing anode voltage, brightness and focus quality decrease.

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.