

# PHILCO CATHODE RAY TUBE DATA SHEET

TENTATIVE

## DESCRIPTION

The 5AKP tubes are magnetic focus and deflection cathode ray tubes intended primarily for use in flying spot scanner applications. These tubes particularly feature extremely small spot size. Other features include a metal backed screen for high brightness, an external conductive coating on the neck which should be grounded to prevent corona between the yoke and the neck, and an external insulating coating on the bulb cone to reduce arcing over the bulb.

## ELECTRICAL DATA

|                                                |                                                        |
|------------------------------------------------|--------------------------------------------------------|
| Focusing Method                                | Magnetic                                               |
| Deflecting Method                              | Magnetic                                               |
| Deflection Angle, approximate                  | 50 Degrees                                             |
| Direct Interelectrode Capacitance, approximate |                                                        |
| Cathode to all                                 | 3.5 $\mu\mu\text{f}$                                   |
| Grid #1 to all                                 | 4.0 $\mu\mu\text{f}$                                   |
| External Coating Capacitance                   | 100 min. $\mu\mu\text{f}$<br>500 max. $\mu\mu\text{f}$ |

## OPTICAL DATA

| Phosphor Number   | P15        | P24             |
|-------------------|------------|-----------------|
| Fluorescent Color | Blue-Green | Light Green     |
| Persistence       | Very Short | Extremely Short |

## MECHANICAL DATA

|                                                              |                                              |
|--------------------------------------------------------------|----------------------------------------------|
| Overall Length                                               | 12 $\frac{9}{16}$ $\pm$ $\frac{1}{4}$ Inches |
| Greatest Diameter of Bulb                                    | 5 $\pm$ $\frac{1}{8}$ Inches                 |
| Minimum Useful Screen Diameter<br>(maximum assured diameter) | 4 $\frac{1}{4}$ Inches                       |
| Base                                                         | B5-57                                        |
| Basing                                                       | 12 G                                         |
| Anode Contact                                                | J1-21                                        |
| Anode Contact Aligns with Vacant Pin #3                      | $\pm 10^\circ$                               |

## MAXIMUM RATINGS (Design Center Values)

|                                            |                       |
|--------------------------------------------|-----------------------|
| Heater Voltage                             | 6.3 Volts             |
| Heater Current at 6.3 Volts                | .60 $\pm$ 10% Amperes |
| Anode Voltage (Note #1)                    | 40,000 Max. Volts DC  |
| Grid #1 Voltage                            |                       |
| Negative Bias Value                        | 350 Max. Volts DC     |
| Positive Peak Value                        | 2 Max Volts           |
| Positive Bias Value                        | 0 Max. Volts DC       |
| Peak Heater-Cathode Voltage (Note #2)      |                       |
| Heater Negative with Respect to Cathode    |                       |
| During Warmup Period not to exceed 15 Sec. | 410 Max. Volts        |
| After Equipment Warmup Period              | 180 Max. Volts        |
| Heater Positive with Respect to Cathode    | 180 Max. Volts        |

## TYPICAL OPERATING CONDITIONS

|                                              |                   |
|----------------------------------------------|-------------------|
| Anode Voltage                                | 30,000 Volts      |
| Grid #1 Voltage (Note #3)                    | -80 to -140 volts |
| Focusing Coil Current, approximate (Note #4) | 250 Ma.           |

## MAXIMUM CIRCUIT VALUES

|                            |                |
|----------------------------|----------------|
| Grid #1 Circuit Resistance | 1.5 Max. Megs. |
|----------------------------|----------------|

## NOTES

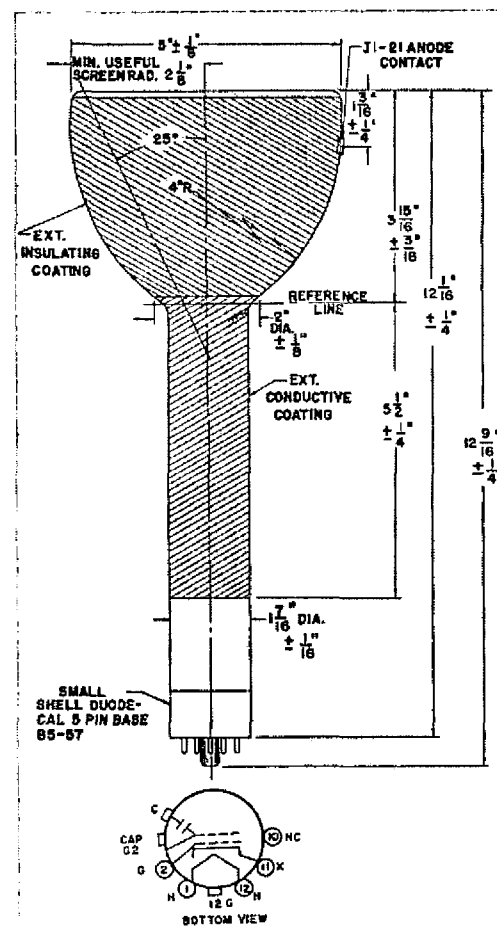
1. Anode and Grid #2 are connected together within the tube and are referred to herein as anode.
2. Cathode should be returned to one side or to the mid-tap of the heater transformer winding.
3. For visual extinction of the undeflected focused spot.
4. For standard focus coil JETEC #106 or equivalent, with the combined Grid #1 bias voltage and video signal voltage adjusted for 200 microamperes of anode current.

from JETEC release #2038, Nov. 4, 1957

# 5AKP15 5AKP24 FLYING SPOT SCANNER TUBES

## GENERAL DESCRIPTION

5" cathode ray tubes intended as flying spot light sources. The 5AKP24 is particularly adapted for use in color film scanners.

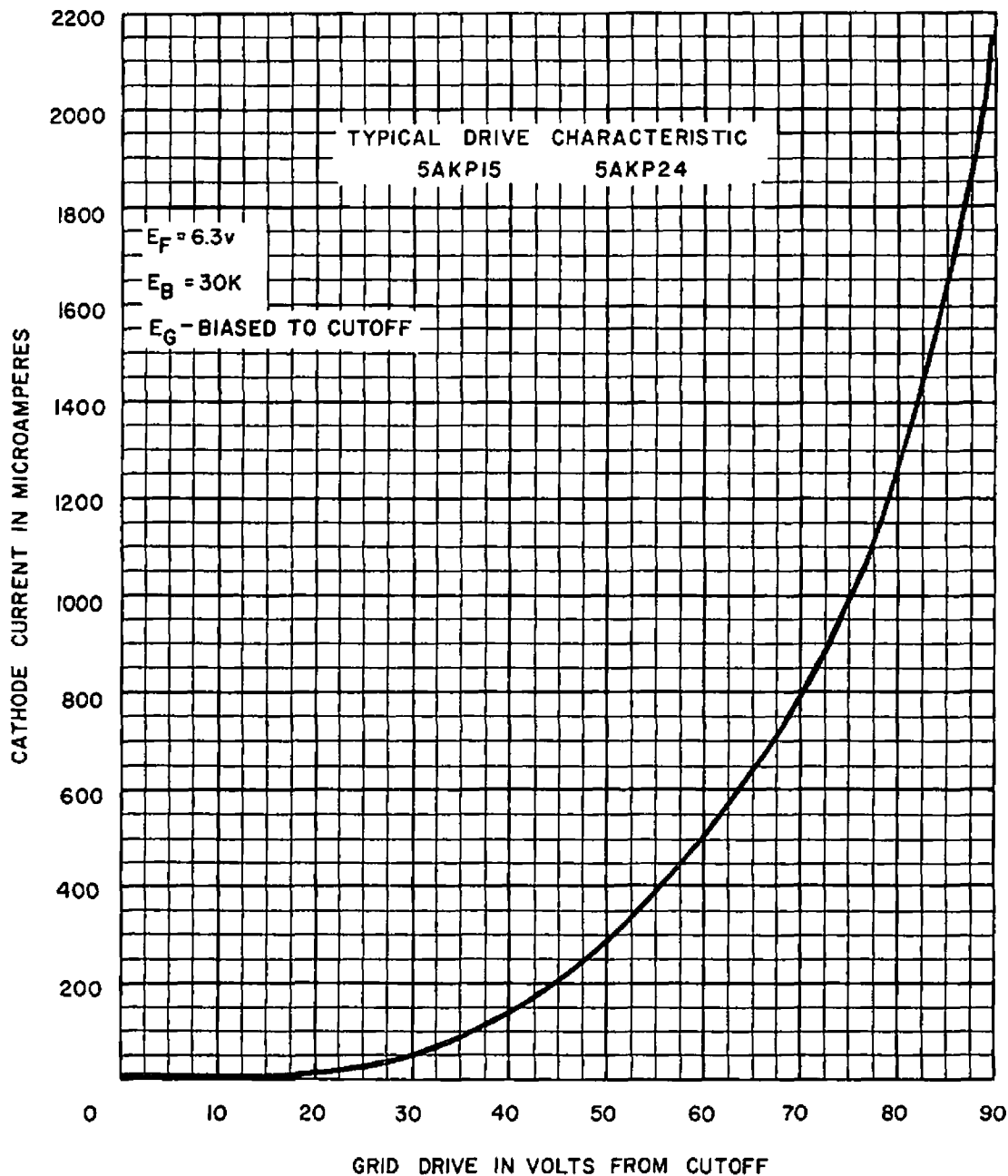


## MECHANICAL NOTES

1. The reference line is determined by the position where reference line gauge JETEC #112 rests against the funnel.
2. The anode contact aligns with vacant pin position #3  $\pm 10^\circ$ .
3. External conductive coating must be grounded.
4. Center line of bulb will not deviate more than  $2^\circ$  in any direction from the perpendicular erected at the center of the bottom of the base.

# APPLICATION NOTE

At or near maximum anode potential suitable precautions should be taken to prevent arcing between the anode button and the deflection yoke during high humidity conditions. A corona shield such as Lansdale #007-9174 affixed to the bulb around the button will prevent any arcing along the outside of the bulb.



## WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range when this tube is operated at recommended anode voltages.