

## CHARACTERISTICS

### GENERAL DATA

Focusing Method.....Electrostatic  
 Deflecting Method.....Magnetic  
 Deflecting Angle-Diagonal (Approx.) .....90 Degree  
     Horizontal .....85 Degree  
     Vertical.....68 Degree

Phosphor.....P4 Aluminized  
 Fluorescence .....White  
 Persistence .....Medium  
 Faceplate .....Gray Filter Glass  
 Light Transmission (approx.).....74 Percent

THE 21CKP4 IS A DIRECT-VIEW PICTURE TUBE FOR USE IN TELEVISION RECEIVERS AND INCLUDES SUCH FEATURES AS:

- A short straight electron gun not requiring an ion trap.

- A short neck length.
- 6.3V - .45A. heater

- A gray tinted face affording approximately 74% light transmission.

- Rectangular Glass Type

- Spherical Face

- Electrostatic Focus

- Metal Backed Screen

### ELECTRICAL DATA

Heater Voltage..... 6.3 Volts  
 Heater Current......45 Amperes  $\pm$  10 %  
 Direct Interelectrode Capacitances (approx.)  
     Cathode to All Other Electrodes .....5 uuf  
     Grid No. 1 to All Other Electrodes .....6 uuf  
 Ion Trap Magnet .....None

### MECHANICAL DATA

Minimum Useful Screen Dimensions .....19 1/16 x 15 1/16 Inches  
 Minimum Useful Screen Area (approx.) .....262 Sq. In.  
 Bulb Contact (Recessed Small Cavity Cap).....J1-21  
 Base (Small Shell Dodecal 6 Pin).....JETEC B6-63  
 Basing .....L2L  
     J1-21 Contact Aligns with Pin Position No. 6  $\pm$  30 Degree

### NOTES:

1. Grid No. 5, Grid No. 3, and the collector are connected together within the tube, 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 focus with anode current of 100 ua and 19 1/16 x 15 1/16 raster.

4. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

### RATINGS

#### MAXIMUM RATINGS (Design Center Values).

Anode Voltage (Note 1). .....20,000 Volts dc  
 Grid No. 4 Voltage (focusing electrode)-500 to  $\sqrt$ 1000 Volts dc  
 Grid No. 2 Voltage .....500 Volts dc  
 Grid No. 1 Voltage  
     Negative Bias Value.....140 Volts  
     Positive Bias Value .....0 Volts dc  
     Positive Peak Value .....2 Volts  
 Peak Heater-Cathode Voltage (Note 2)  
     Heater Negative with Respect to Cathode  
         During Warm-up Period Not to exceed 15sec. 410 Volts dc  
         After Equipment Warm-up Period.....180 Volts dc  
     Heater Positive with Respect to Cathode.....180 Volts dc

### RECOMMENDED OPERATING CONDITIONS

Anode Voltage .....16,000 Volts dc  
 Grid No. 4 Voltage (Note 3)..... -50 to  $\sqrt$  350 Volts dc  
 Grid No. 2 Voltage .....300 Volts dc  
 Grid No. 1 Voltage (Note 4)..... -28 to -72 Volts dc

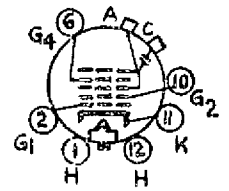
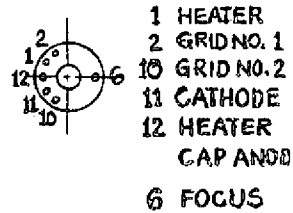
### CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....1.5 Max. Megohm  
 External Conductive Coating to Anode  
     Capacitance- .....2500 uuf. Max.  
                   .....2000 uuf. Min.

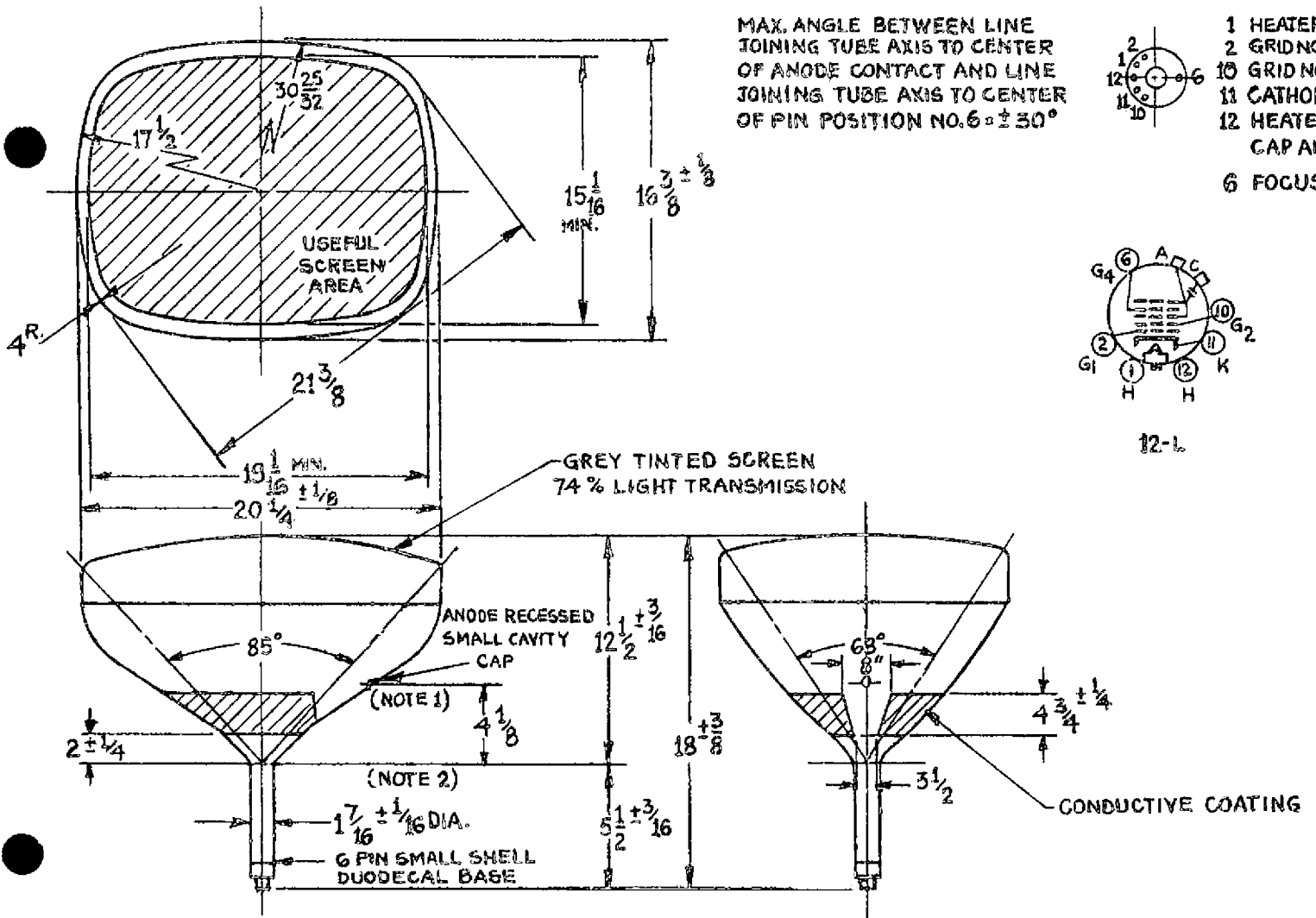
THOMAS ELECTRONICS, INC.  
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TERMINAL CONNECTIONS

MAX. ANGLE BETWEEN LINE JOINING TUBE AXIS TO CENTER OF ANODE CONTACT AND LINE JOINING TUBE AXIS TO CENTER OF PIN POSITION NO. 6  $\pm 30^\circ$



12-L



**DIAGRAM NOTES:**

1. The plane through the tube axis and pin position No. 6 may vary from the plane through the tube axis and anode terminal by an angular tolerance (measured about the tube axis) of  $30^\circ$ . Anode terminal is on same side as pin position No. 6.
2. Reference line is determined by position where upper edge of hinged gauge RTMA #116 will rest on Bulb Cone.

**WARNING:**

X-Ray Warning. If this tube is operated in excess of 16,000 Volts, X-Ray shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range. Such protection may be provided by the protective face viewing window of apparatus using tubes of this type. Protection is sufficient if the radiation measured in contact with the window is less than 6.25 MR/hr.

Additional data will be furnished by our engineering department upon request.