CATHODE-RAY TUBE

12KP4

Description and Rating

TELEVISION PICTURE TUBE

The 12KP4 is a magnetic focus and deflection direct-view picture tube for television applications. It provides a 7½ x 10-inch picture. Other features of this tube are a reflective metal-backed screen which prevents ion-spot blemishes and gives improved brightness, picture contrast, and detail, and an outside conductive coating which, when grounded, serves as a filter capacitor.

GENERAL CHARACTERISTICS

ELECTRICAL:

Heater Voltage ........................................ 6.3 ± 10% Volts
Heater Current ........................................ 0.6 ± 10% Ampere
Focusing Method ....................................... Magnetic
Deflecting Method ..................................... Magnetic
Deflecting Angle, Approximate ...................... 54 Degrees
Phosphor - P4
  Fluorescence ....................................... White
  Persistence ......................................... Medium
Direct Inter-electrode Capacitances, Approximate
  Cathode to All Other Electrodes .................. 5 µf
  Grid No.1 to All Other Electrodes ............... 6.5 µf
External Conductive Coating to Anode Capacitance
  2500 Max ........................................... µf
  500 Min .............................................. µf

MECHANICAL:

Overall Length ........................................ 17 5/8 ± 3/8 Inches
Greatest Diameter of bulb ............................ 12 7/16 ± 1/8 Inches
Minimum Useful Screen Diameter .................... 11 Inches
Bulb Contact .......................................... J1-21 Recessed Small-Cavity Cap
Base ................................................................ Small-Shell Duodecal 7-Pin
Basing .................................................. 110
Bulb Contact Alignment ............................... Anode Contact Aligns with Pin No.3 ± 10 Degrees

MAXIMUM RATINGS

DESIGN CENTER VALUES:

Anode Voltage ......................................... 12000 Max Volts D-C
Grid No.2 Voltage ...................................... 410 Max Volts D-C
Grid No.1 Voltage
  Negative-Bias Value ................................. 125 Max Volts D-C
  Positive-Bias Value ................................. 0 Max Volts D-C
  Positive-Peak Value ................................. 2 Max Volts
Peak Heater-Cathode Voltage *
  Heater Negative with Respect to Cathode ....... 140 Max Volts D-C
  Heater Positive with Respect to Cathode ...... 140 Max Volts D-C

* Cathode should be returned to one side or to the mid-top of the heater transformer winding.

TYPICAL OPERATING CONDITIONS

Anode Voltage ......................................... 10000 Volts D-C
Grid No.2 Voltage ...................................... 250 Volts D-C
Grid No.1 Voltage ** .................................. -27 to -63 Volts D-C
Focusing Coil Current # ................................ 135 Approx. Milliamperes D-C
Spot Position (Undelected) ......................... 20 Max Millimeters

** Visual extinction of undelected focused spot.
# For standard focus coil or equivalent, with the combined grid No.1-bias voltage and video-signal voltage adjusted to produce a high-light brightness of 20 foot-lamberts on a 7½ x 10-inch picture area. Distance (D), reference line to center of air-gap, shall be 3 1/4 inches.

MAXIMUM CIRCUIT VALUES

Grid No.1 Circuit Resistance ....................... 1.5 Max Megohms
OUTLINE
12KP4

Electronics Department

GENERAL ELECTRIC

Schenectady, N. Y.