10KP - Cathode-Ray Tubes

The Type 10KP- Cathode-ray Tubes are magnetically focussed and deflected cathode-ray tubes designed for radar systems and special applications requiring long persistence and large screen size. This tube is typical of the radar-type tubes available from Du Mont.

Radar types similar to the Type 10KP- include the 5-inch 5FP-, the 7-inch 7BP- and the 12-inch 12SP-. Selection of a tube of this type would be determined by the screen size desired and the exact electrical characteristics needed to fit the application.

GENERAL CHARACTERISTICS

Electrical

Heater Voltage ......................................... 6.3 Volts
Heater Current ........................................ 0.6 ± 10% Ampere
Focusing Method ........................................ Magnetic
Deflecting Method ...................................... Magnetic
Deflecting Angle (Approx.) .......................... 50 Degrees
Phosphor ................................................ I-7
Fluorescence .......................................... Blue
Phosphorescence ....................................... Yellow
Persistence ............................................. Long
Direct Interelectrode Capacitances, Approx.
Cathode to all other electrodes ...................... 5 µf.
Grid No. 1 to all other electrodes ................... 6.5 µf.

Mechanical

Overall Length .......................................... 17 5/8 ± 3/8 Inches
Greatest Diameter of Bulb ............................. 10 1/2 ± 1/8 Inches
Minimum Useful Screen Diameter ..................... 9 Inches
Bulb Contact (Recessed small cavity cap) .......... J1-21
Base (Small shell duodecal 7-pin) ................... B7-51
Basing .................................................... 12D
Bulb Contact Alignment J1-21 contact aligns with vacant pin position No. 3 ± 10 Degrees

MAXIMUM RATINGS—(Design Center Values)

Anode Voltage .......................................... 10,000 Max. Volts D-C
Grid No. 2 Voltage .................................... 700 Max. Volts D-C
Grid No. 1 Voltage
  Negative Bias Value ................................. 180 Max. Volts D-C
  Positive Bias Value ................................. 0 Max. Volts D-C
Positive Peak Value .................................. 2 Max. Volts
Peak Grid No. 1 Drive from Cut-off ................. 65 Max. Volts
Peak Heater-Cathode Voltage
  Heater Negative with respect to cathode .......... 150 Max. Volts D-C
  Heater Positive with respect to cathode .......... 150 Max. Volts D-C

TYPICAL OPERATING CONDITIONS

Anode Voltage .......................................... 9,000 Volts D-C
Grid No. 2 Voltage .................................... 250 Volts D-C
Grid No. 1 Voltage ................................. −27 to −63 Volts D-C
Focusing Coil Current ......................... 105 Approx. Ma. D-C
MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance .......................................................... 1.5 Max. Megohms

NOTES

1. At or near this rating, the effective resistance of the anode supply should be adequate to limit the anode input power to 6 watts.
2. Visual extinction of undeflected focused spot.
3. For JETEC standard focus coil No. 106, or equivalent, with the Grid No. 1 voltage adjusted to produce an anode current of 200 microamperes and with distance (D) from reference line to center of air gap equal to 3.25 inches.

10KP-

AVERAGE CHARACTERISTICS

FILAMENT VOLTAGE = 6.3 VOLTS
GRID NO. 1 VOLTAGE BIASED TO OUT-OF
GRID NO. 2 VOLTAGE = 250 VOLTS
ACCELERATOR VOLTAGE = 7000 TO 10,000 VOLTS

ANODE CURRENT, MICROAMPERES

-45 -25 -15 0
GRID NO. 1 VOLTS

145
TYPE 10KP-

REFERENCE LINE 
+0.03 
-0.000 
POINT WHERE 1.500 
DIAMETER RING GAUGE, 
2 INCHES LONG, WILL 
STOP.

ANODE CONTACT 
CAVITY CAP 
(J1-21)

SMALL SHELL 
DUODECAL 7-PIN BASE 
(B7-51)

BOTTOM VIEW OF BASE

PIN NO. ELEMENT
1 — HEATER
2 — GRID NO. 1
10 — GRID NO. 2
11 — CATHODE
12 — HEATER
CAP — ANODE

BOTTOM VIEW OF TUBE

10° MAX.