CATHODE RAY

THE 24VP4 AND 24VP4A ARE DIRECT-VIEW PICTURE TUBES DESIGNED FOR USE IN TELEVISION APPLICATIONS. THEY ARE IDENTICAL EXCEPT THAT THE 24VP4A HAS AN ALUMINIZED SCREEN. THEIR COMMON FEATURES INCLUDE:

- UNIPOTENTIAL CATHODE
- GREY FILTER FACEPLATE
- EXTERNAL CONDUCTIVE COATING
- MAGNETIC FOCUS AND DEFLECTION
- 21 3/8" X 16 1/6" RASTER SIZE
- EXTERNAL SINGLE FIELD ION TRAP

ELECTRICAL DATA

FOCUSING METHOD
DEFLECTING METHOD
DEFLECTION ANGLE (APPROX.):
  HORIZONTAL 87 DEGREES
  VERTICAL 73 DEGREES
  DIAGONAL 90 DEGREES
DIRECT INTERELECTRODE CAPACITANCES (APPROX.):
  CATHODE TO ALL OTHER ELECTRODES 5 \mu F
  GRID \#1 TO ALL OTHER ELECTRODES 6 \mu F
  MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE 1 500 \mu F
  MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE 750 \mu F

OPTICAL DATA

PHOSPHOR NUMBER NO. 4
FLUORESCENT COLOR WHITE
PHOSPHORESCENT COLOR WHITE
PERSISTENCE MEDIUM
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.) 68 PERCENT

MECHANICAL DATA

OVERALL LENGTH 21 1/8 ± 3/8 INCHES
GREATEST DIMENSIONS OF BULB:
  DIAGONAL 24 ± 1/8 INCHES
  WIDTH 22 43/64 ± 1/8 INCHES
  HEIGHT 18 7/16 ± 1/8 INCHES
MINIMUM USEFUL SCREEN DIMENSIONS:
  DIAGONAL 22 13/16 INCHES
  WIDTH 21 3/8 INCHES
  HEIGHT 16 1/16 INCHES
BULB CONTACT RECESSED SMALL CAVITY CAP J4-24
BASE SMALL SHELL DUODECAL 5 PIN B5-57
BASING 12N
BULB CONTACT ALIGNMENT J4-24 CONTACT ALIGNS WITH PIN POSITION #6 ± 30 DEGREES

PIN CONNECTIONS

PIN 1 - HEATER
PIN 2 - GRID NO. 1
PIN 10 - GRID NO. 2
PIN 41 - CATHODE
PIN 42 - HEATER
ANODE CAP

CONTINUED ON FOLLOWING PAGE
RATINGS
DESIGN CENTER VALUES

HEATER VOLTAGE 6.3 VOLTS
HEATER CURRENT 0.6 AMP.
MAXIMUM DC ANODE VOLTAGE 22,000 VOLTS
MAXIMUM DC GRID #2 VOLTAGE 600 VOLTS
MAXIMUM GRID #1 VOLTAGE:
DC NEGATIVE-BIAS VALUE 125 VOLTS
DC POSITIVE-BIAS VALUE 0 VOLTS
POSITIVE-PEAK VALUE 2 VOLTS

MAXIMUM DC PEAK HEATER-CATHODE VOLTAGE:
HEATER NEGATIVE WITH RESPECT TO CATHODE DURING WARM-UP PERIOD NOT TO EXCEED 15 SECONDS 410 VOLTS
AFTER EQUIPMENT WARM-UP PERIOD 180 VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE 180 VOLTS

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

DC ANODE VOLTAGE\textsuperscript{A} 20,000 VOLTS
DC GRID #2 VOLTAGE 300 VOLTS
DC GRID #1 VOLTAGE\textsuperscript{B} -33 TO -77 VOLTS
DC FOCUSING COIL CURRENT\textsuperscript{C} (APPROX.) 125 MA.
DC ION TRAP CURRENT STANDARD COIL #111 (APPROX.) 135 MA.

\textsuperscript{A} WHEN THE TUBE IS OPERATED AT VOLTAGES IN EXCESS OF 20,000 VOLTS PEAK, THE STORED ENERGY IN THE HIGH VOLTAGE CIRCUIT WILL BE OVER THE MAXIMUM PERMITTED BY THE UNDERWRITERS LABORATORY. THIS CONDITION WILL REQUIRE THAT PROVISION BE MADE FOR GROUNDING THE HIGH VOLTAGE SUPPLY WHEN THE BACK OF THE SET IS REMOVED FOR MAINTENANCE PURPOSES.

\textsuperscript{B} FOR VISUAL EXTINCTION OF UNDEFOCUSED SPOT.

\textsuperscript{C} FOR STANDARD FOCUS COIL #109, OR EQUIVALENT, WITH THE COMBINED GRID #2 BIAS VOLTAGE AND VIDEO SIGNAL VOLTAGE ADJUSTED TO PRODUCE A HIGHLIGHT BRIGHTNESS OF 20 FOOT LAMBERTS ON A 22 3/16\textsuperscript{\textdegree} PICTURE SIZE. DISTANCE FROM REFERENCE LINE TO CENTER OF AIR GAP ON FOCUS COIL SHALL BE 3.0 INCHES.

CIRCUIT VALUES

MAXIMUM GRID #1 CIRCUIT RESISTANCE 1.5 MEGOHMS