

# National Video Corporation

4300 W. 47TH STREET CHICAGO 32, ILLINOIS  
CLIFFSIDE 4-5600

The 23GP4 is a 5 1/8" neck length, electrostatic focus, magnetic deflection picture tube. The tube has a metal back screen and an implosion faceplate sealed to the tube. A straight gun which requires no ion trap and a 600 milliampere, 6.3 volt filament are used.

## ELECTRICAL DATA

|                                                 |                                |
|-------------------------------------------------|--------------------------------|
| Focusing Method                                 | Electrostatic                  |
| Deflecting Method                               | Magnetic                       |
| Deflection Angle, Approximate                   |                                |
| Horizontal                                      | 99 Degrees                     |
| Vertical                                        | 82 Degrees                     |
| Diagonal                                        | 110 Degrees                    |
| Direct Interelectrode Capacitances, Approximate |                                |
| Cathode to all other electrodes                 | 5 uuf                          |
| Grid #1 to all other electrodes                 | 6 uuf                          |
| External Conductive Coating to Anode            | 2500 Max. uuf<br>2000 Min. uuf |

## ELECTRICAL CHARACTERISTICS

|                                               |                      |
|-----------------------------------------------|----------------------|
| Heater current at 6.3 volts                   | 600 $\pm$ 30 ma      |
| Grid #1 voltage (Note 1) (Grid Drive Service) |                      |
| at 300 volts G <sub>2</sub> to cathode        | -28 to -72 Volts DC  |
| Grid #4 voltage (Focusing Electrode) (Note 2) | -100 to 500 Volts DC |

## OPTICAL DATA

|                                           |            |
|-------------------------------------------|------------|
| Phosphor Number                           | P4         |
| Bulb and Faceplate                        |            |
| Light Transmission at Center, Approximate | 37 Percent |

## MECHANICAL DATA

|                                  |                    |               |
|----------------------------------|--------------------|---------------|
| Overall Length                   | 15 3/16 $\pm$ 1/4  | Inches        |
| Greatest Dimensions of Panel     |                    |               |
| Diagonal                         | 24 45/64 $\pm$ 1/8 | Inches        |
| Width                            | 21 5/16 $\pm$ 1/8  | Inches        |
| Height                           | 17 5/16 $\pm$ 1/8  | Inches        |
| Minimum Useful Screen Dimensions |                    |               |
| Diagonal                         | 22 5/16            | Inches        |
| Horizontal axis                  | 19 5/16            | Inches        |
| Vertical axis                    | 15 1/4             | Inches        |
| Area                             | 282                | Square Inches |

|                        |                                           |              |
|------------------------|-------------------------------------------|--------------|
| Neck Length            | 5 1/8 ± 1/8                               | Inches       |
| Bulb No.               | J-187A1                                   |              |
| Faceplate No.          | FP-198A1                                  |              |
| Bulb Contact           | J1-21                                     |              |
| Base                   | B7-208                                    |              |
| Basing                 | 8HR                                       |              |
| Bulb Contact Alignment | J1-21 contact aligns with pin position #4 | ± 30 Degrees |

RATINGS (Absolute Maximum Values)

Grid Drive Service - Unless otherwise specified voltage values are positive with respect to cathode.

|                                                |        |          |
|------------------------------------------------|--------|----------|
| Maximum Heater Voltage                         | 7.0    | Volts    |
| Minimum Heater Voltage                         | 5.6    | Volts    |
| Maximum Anode Voltage                          | 20,000 | Volts    |
| Maximum Grid #4 Voltage                        | 2,000  | Volts DC |
| Minimum Grid #4 Voltage                        | -500   | Volts DC |
| Maximum Grid #2 Voltage                        | 550    | Volts DC |
| Grid #1 Voltage                                |        |          |
| Maximum Negative Value                         | 0      | Volts DC |
| Maximum Negative Peak Value                    | 2      | Volts DC |
| Maximum Positive Value                         | 155    | Volts DC |
| Maximum Positive Peak Value                    | 220    | Volts    |
| Maximum 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

|                                               |            |          |
|-----------------------------------------------|------------|----------|
| Anode Voltage                                 | 16,000     | Volts DC |
| Grid #4 Voltage (Focusing Electrode) (Note 2) | 0 to 400   | Volts DC |
| Grid #2 Voltage                               | 300        | Volts DC |
| Grid #1 Voltage (Note 1)                      | -20 to -72 | Volts DC |

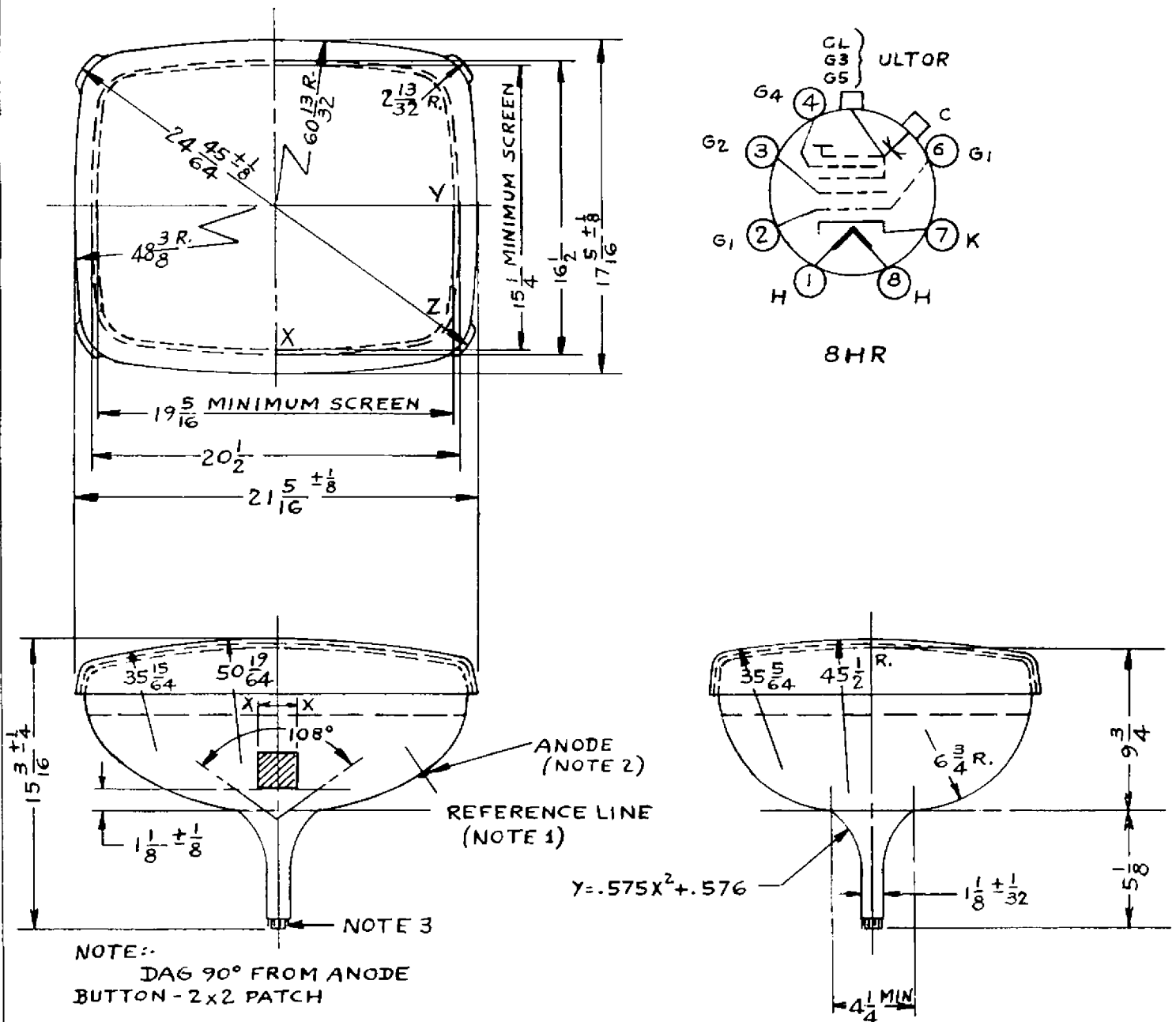
MAXIMUM CIRCUIT VALUES

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

CATHODE RAY TUBE CHARACTERISTICSNOTES

1. Visual extinction of focused raster.
2. With the combined grid #1 bias voltage and video-signal voltage adjusted to give an anode current of 100 microamperes on a 19 5/16 x 15 1/4 inch picture size.

# 23GP4



NATIONAL VIDEO CORP.  
CHICAGO 32, ILL.

|             |         |             |              |
|-------------|---------|-------------|--------------|
| SUPERSEDES  |         | DRAWING NO. | 23GP4        |
| DRAWN BY    | SCALE   | EFFECTIVE   | DISTRIBUTION |
| F. HLUBOCKY | 1" = 8" | 6-10-59     |              |

MECHANICAL NOTES

1. The reference line is determined by reference line gauge JEDEC #126.
2. The area around the button is covered with an insulating coating.
3. Socket for this base should not be rigidly mounted; it should have flexible leads and be allowed to move freely.
4. Undisturbed area between the mold match line and the panel side of the seal bulge will be a minimum of  $3/4$ ".
5. From the mechanical center of the faceplate, the X, Y, Z dimensions are:

X -  $7 \frac{7}{8}$  at 00  
Y -  $9 \frac{7}{8}$  at .436  
Z -  $11 \frac{1}{2}$  at .970

WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at anode voltages higher than 16,000 volts.