

National Video Corporation

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

The 23EGP22 is a 23"-92° rectangular bonded picture tube used in color receivers. This tube has a 7 7/32" neck length and is capable of producing either a full color or black and white picture with a projected area of approximately 282 sq. in.

ELECTRICAL DATA

Electron Guns, Three	Red, Blue, Green
Heater Current at 6.3 Volts	1.35 amp
Focusing Method	Electrostatic
Focus Lens	Bipotential
Convergence Method	Magnetic
Deflection Method	Magnetic
Deflection Angles (Approx.)	
Diagonal	92 degrees
Horizontal	80 degrees
Vertical	68 degrees
Direct Interelectrode Capacitance (Approx.)	
Grid No. 1 of any gun to all other electrodes	16 pf
Cathodes of all guns (parallel connected) to all other electrodes	10 pf
Focusing Electrode (Grid No. 3) to all other electrodes	12 pf
External conductive coating to anode	2,500 pf max. 2,000 pf min.

OPTICAL DATA

Screen on Inner Surface of Faceplate:	
Type	Aluminized, Tricolor Phosphor Dot
Phosphor (three separate phosphors, collectively)	P-22 All Sulfide
Spacing between centers of adjacent dot trios (Approx.)	.028 inches

Positive bias value	0 max. volts
Positive peak value	2 max. volts
Heater Voltage (ac or dc)	6.9 max. volts 5.7 min. volts
Peak Heater-Cathode Voltage:	
Heater negative with respect to cathode:	
During equipment warm-up period not exceeding 15 seconds	450 max. volts
After equipment warm-up period	200 max. volts
Heater positive with respect to cathode	200 max. volts

Equipment Design Ranges:

Unless otherwise specified, values are for each gun and voltage values are positive with respect to cathode

For anode voltage between 20,000 and 27,500 volts

Focusing Electrode (Grid-No. 3 Voltage)	16.7% to 21.6% of anode volts								
Control Voltage for Visual Cut-off of Focused Raster	See CUT-OFF DESIGN CHART								
Maximum Ratio of Spot Cut-off Voltages, Highest Gun to Lowest Gun in Any Tube (at E_{c2k} of 200 volts)	1.5								
Focusing Electrode (Grid-No. 3) Current (Total)	-45 to +45 ua								
Grid-No. 2 Current	-25 to +25 ua								
To produce White of 9300°K <u>+27 M.P.C.D.</u> (CIE Coordinates x = 0.281, y = 0.311): Percentage of total anode current supplied by each gun	<table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Red</u></th> <th style="text-align: center;"><u>Blue</u></th> <th style="text-align: center;"><u>Green</u></th> <th></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">39</td> <td style="text-align: center;">32</td> <td style="text-align: center;">29</td> <td style="text-align: right;">per cent</td> </tr> </tbody> </table>	<u>Red</u>	<u>Blue</u>	<u>Green</u>		39	32	29	per cent
<u>Red</u>	<u>Blue</u>	<u>Green</u>							
39	32	29	per cent						

	Red to Green			Red to Blue		
	Min.	Ave.	Max.	Min.	Ave.	Max.
Ratio of cathode currents	.9	1.3	1.8	.8	1.2	1.7
Displacements, Measured at center of screen:						
Raster displacement:						
Horizontal				-7/8 to +7/8 inch		
Vertical				-7/8 to +7/8 inch		
Beam trio displacement in any direction with respect to associated phosphor-dot trio				0 to .005 inch		
Lateral convergence displacement of blue beam with respect to red and green beams				-1/4 to +1/4 inch		
Radial convergence displacement excluding effects of dynamic convergence (each beam)				-5/8 to +5/8 inch		

LIMITING CIRCUIT VALUES:

High Voltage Circuit (Note 1)
Low Voltage Circuit (Note 2)

DRAWINGS:

1. Cut-off design chart.
2. Tube outline with essential dimensions and tolerances

Pin Connections:

Pin 1 Heater
Pin 2 Cathode of Red Gun
Pin 3 Grid No. 1 of Red Gun
Pin 4 Grid No. 2 of Red Gun
Pin 5 Grid No. 2 of Green Gun
Pin 6 Cathode of Green Gun
Pin 7 Grid No. 1 of Green Gun
Pin 9 Grid No. 3
Pin 11 Cathode of Blue Gun
Pin 12 Grid No. 1 of Blue Gun
Pin 13 Grid No. 2 of Blue Gun
Pin 14 Heater
Bulb Contact Ultor (Grid No. 4 and Grid No. 5)

NOTES:

1. High Voltage Circuits:

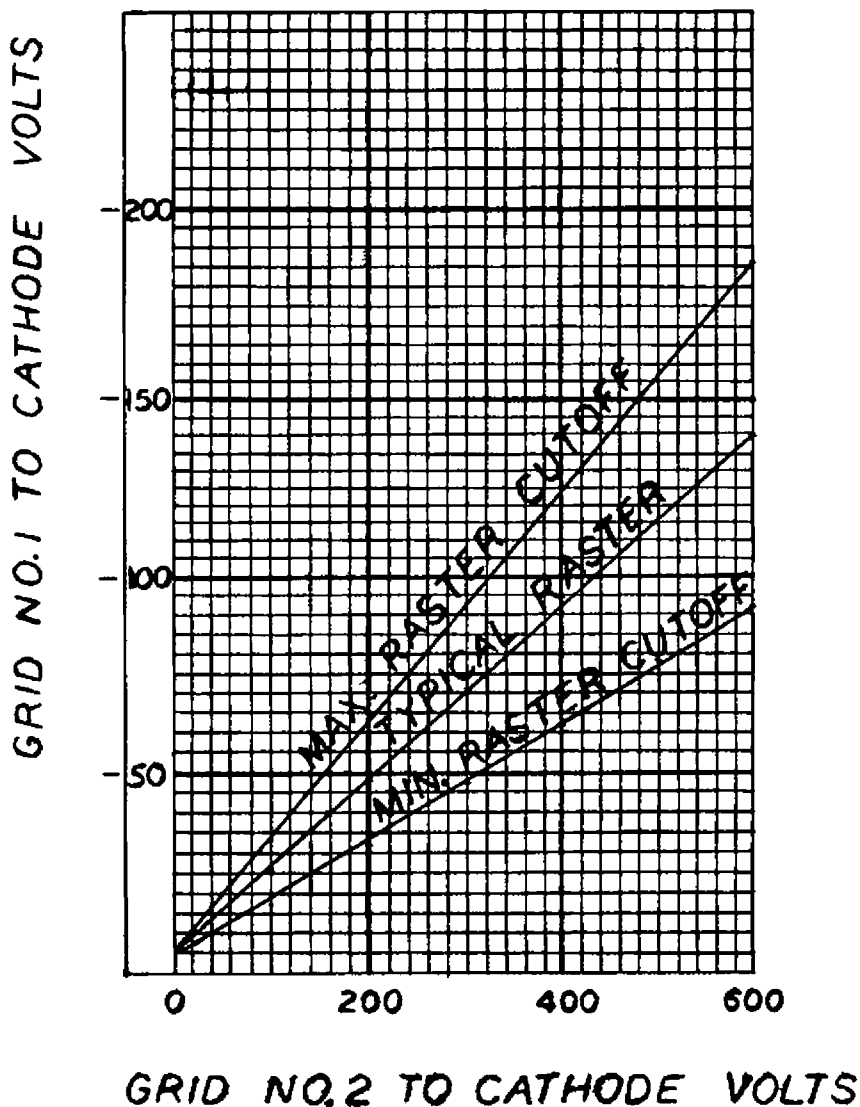
To minimize possibility of damage from internal arc, it is recommended that high voltage and Grid No. 3 power supplies be of limited energy type.

Grid No. 3 Circuit Resistance; (each gun) 7.5 megohms, max.

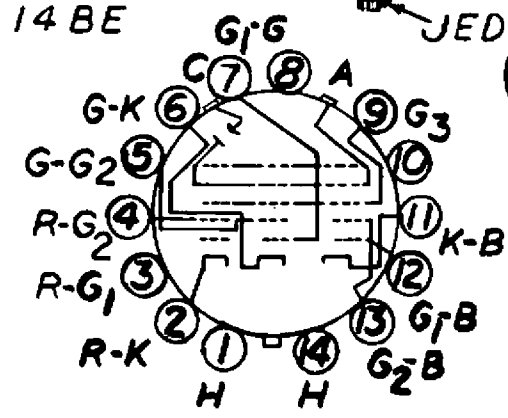
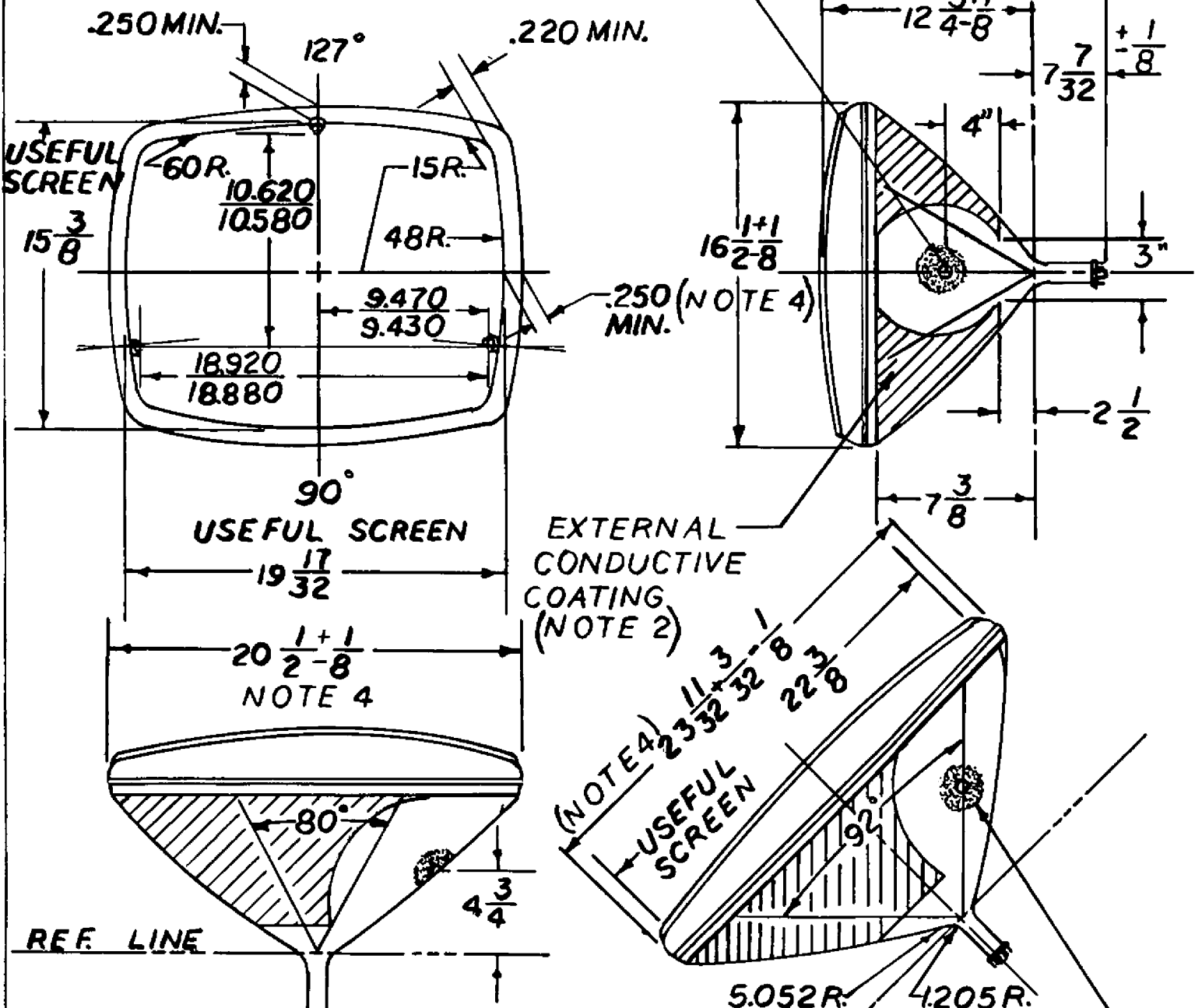
2. Low Voltage Circuits:

Effective Grid No. 1 to Cathode
Circuit Resistance (each gun) --- .75 megohms, max.

The Grid No. 2 to heater circuit, the Grid No. 1 to heater circuit, and the cathode to heater circuit should each have an impedance such that their respective power sources in combination will not supply a continuous short circuit current in excess of 300 milliamperes total. This limitation will prevent heater burn-out in case of internal tube arc.

CUTOFF DESIGN CHART

ULTOR RECESSED SMALL
CAVITY CAP JEDEC J1-21



DRAWN BY	SCALE	EFFECTIVE	DISTRIBUTION	DRAWING NO.
W.C. GRAF	CX	4-16-64		23 EG P22

NOTES FOR DIMENSIONAL OUTLINE

1. Socket for this base should not be rigidly mounted; it should have flexible leads and be allowed to move freely. The design of the socket should be such that the circuit wiring cannot impress lateral strains through the socket contacts on the base pins. Bottom circumference of base wafer will fall within a circle concentric with bulb axis and having a diameter of 1 3/4".
2. External conductive coating must be grounded.
3. To clean this area, wipe only with soft dry lint-less cloth.
4. Measured at the mold-match line.