



TELEVISION PICTURE TUBE

DESCRIPTION

The 17BP4-B is a magnetic-focus and -deflection, direct-view picture tube for television applications. It provides a $10\frac{3}{4}$ by $14\frac{1}{4}$ -inch picture. Features of this tube include a high-quality, neutral-density faceplate which increases picture contrast and detail under high ambient light conditions, and a

reflective, metal-backed screen which improves brightness. Other features are an electron gun designed to be used with an external ion-trap magnet and a space-saving rectangular face shape. An external conductive coating serves as a filter capacitor when grounded.

TECHNICAL INFORMATION

GENERAL

Electrical

Heater voltage.....	6.3 volts
Heater current.....	$0.6 \pm 10\%$ ampere
Focusing method—magnetic	
Deflecting method—magnetic	
Deflecting angle, approximate	
Horizontal.....	65 degrees
Diagonal.....	70 degrees
Phosphor—P4	
Fluorescence—white	
Persistence—medium	


Electronic
TUBE

GENERAL  ELECTRIC

TECHNICAL INFORMATION (CONT'D)

Electrical (Cont.)

Faceplate—neutral density	
Light transmission, approximate	66 per cent
Direct interelectrode capacitances, approximate	
Cathode to all other electrodes	5 uuf
Grid—No. 1 to all other electrodes	6 uuf
External conductive coating to anode capacitance, approximate	2000 uuf

Mechanical

Over-all length	$19\frac{1}{4} \pm \frac{3}{8}$ inches
Greatest bulb dimensions	
Diagonal	$16\frac{5}{8} \pm \frac{1}{8}$ inches
Width	$15\frac{3}{8} \pm \frac{1}{8}$ inches
Height	$12\frac{1}{4} \pm \frac{1}{8}$ inches
Picture dimensions (3 by 4 aspect ratio)	
Width	$14\frac{1}{4}$ inches
Height	$10\frac{3}{4}$ inches
Anode contact—recessed small-cavity cap, J1-21	
Base—small-shell duodecal 5-pin, B5-57	
Basing—12D	
Anode contact alignment	
Anode contact aligns with vacant pin position No. 6 $\pm$ 30 degrees	

MAXIMUM RATINGS Design Center Values

Anode voltage*	16000 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		
During warm-up period not to exceed 15 seconds	410 max	volts d-c
After equipment warm-up period	150 max	volts d-c
Heater positive with respect to cathode	150 max	volts d-c

JETEC COMPARATIVE CONDITIONS

Anode voltage	12000	volts
Grid—No. 2 voltage	300	volts
Grid—No. 1 voltage***	—33 to —77	volts
Focusing—coil current†	$.92 \pm 20\%$	milliamperes
Ion-trap current‡	$.75 \pm 50\%$	milliamperes

RECOMMENDED OPERATING CONDITIONS

Anode voltage (average brightness = 20 foot-lamberts)	14000	volts
Grid—No. 2 voltage	300	volts
Grid—No. 1 voltage***	—33 to —77	volts
Focusing—coil current (RTMA coil No. 109 at $3\frac{3}{4}$ inches), approximate	115	milliamperes
Ion-trap field intensity #, approximate	35	gausses

MAXIMUM CIRCUIT VALUES

Grid—No. 1 circuit resistance	1.5 max	megohms
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* Anode and grid—No. 3 which are connected together within the tube, are referred to herein as anode.

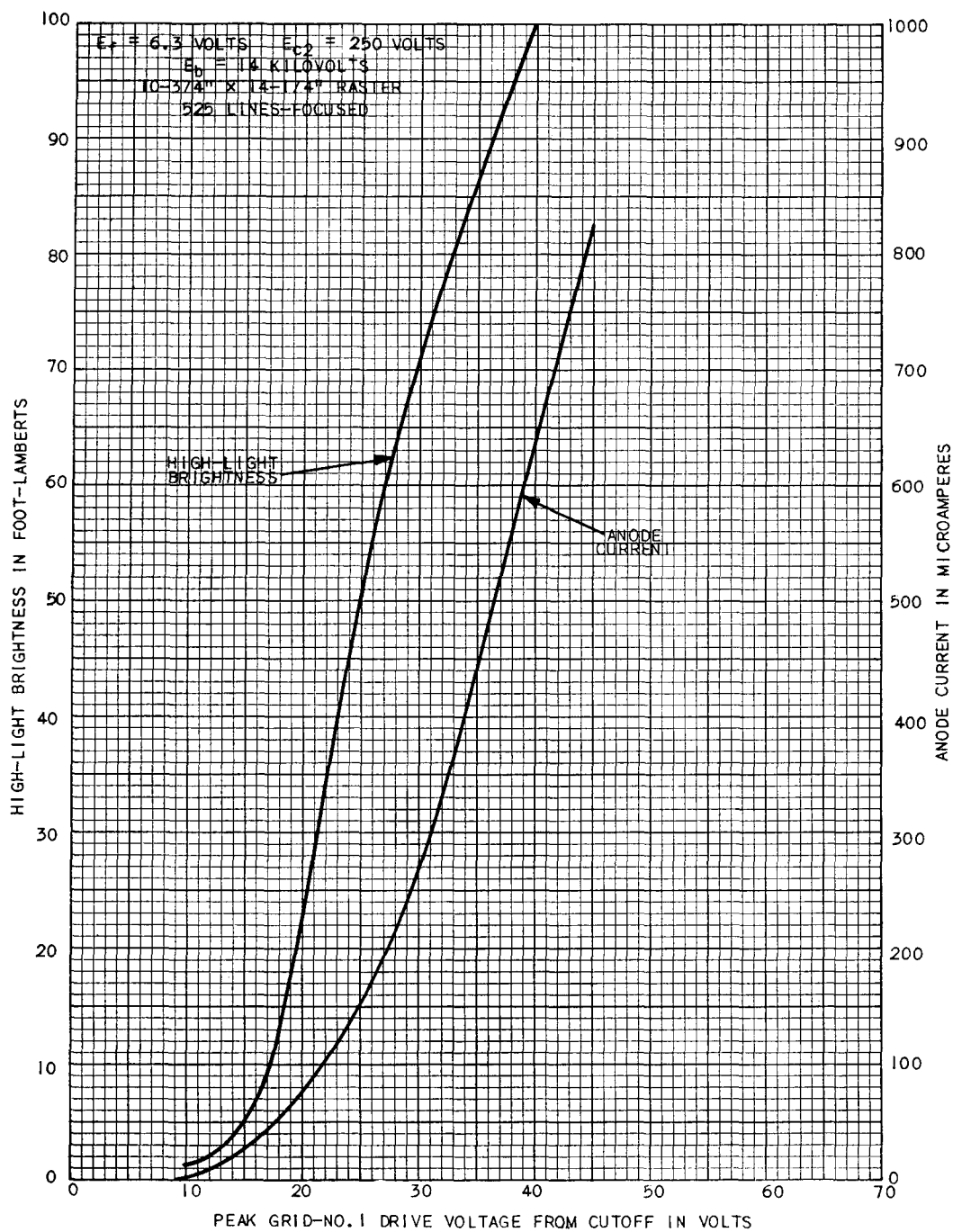
** Cathode should be returned to one side or to the midtap of the heater transformer winding.

*** For visual extinction of undeflected focused spot.

† For RTMA focus coil No. 109 or equivalent with the combined grid—No. 1 bias voltage and video-signal voltage adjusted to produce a highlight brightness of 35 foot-lamberts on a $10\frac{3}{4}$ by $14\frac{1}{4}$ -inch picture area and with the yoke reference line to center of air gap distance equal to 3 inches.

‡ For single-field ion-trap magnet, RTMA No. 111 or equivalent positioned $5\frac{1}{2}$ inches from the yoke reference line.

Single-field ion-trap magnet adjusted to optimum position.

17BP4-B
AVERAGE CHARACTERISTICS

17BP4-B

ETR-131

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OUTLINE
17BP4-B

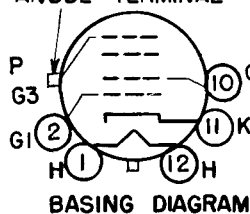
SCREEN DIMENSIONS

DIAGONAL $15\frac{1}{2}$ "

WIDTH $14\frac{1}{4}$ "

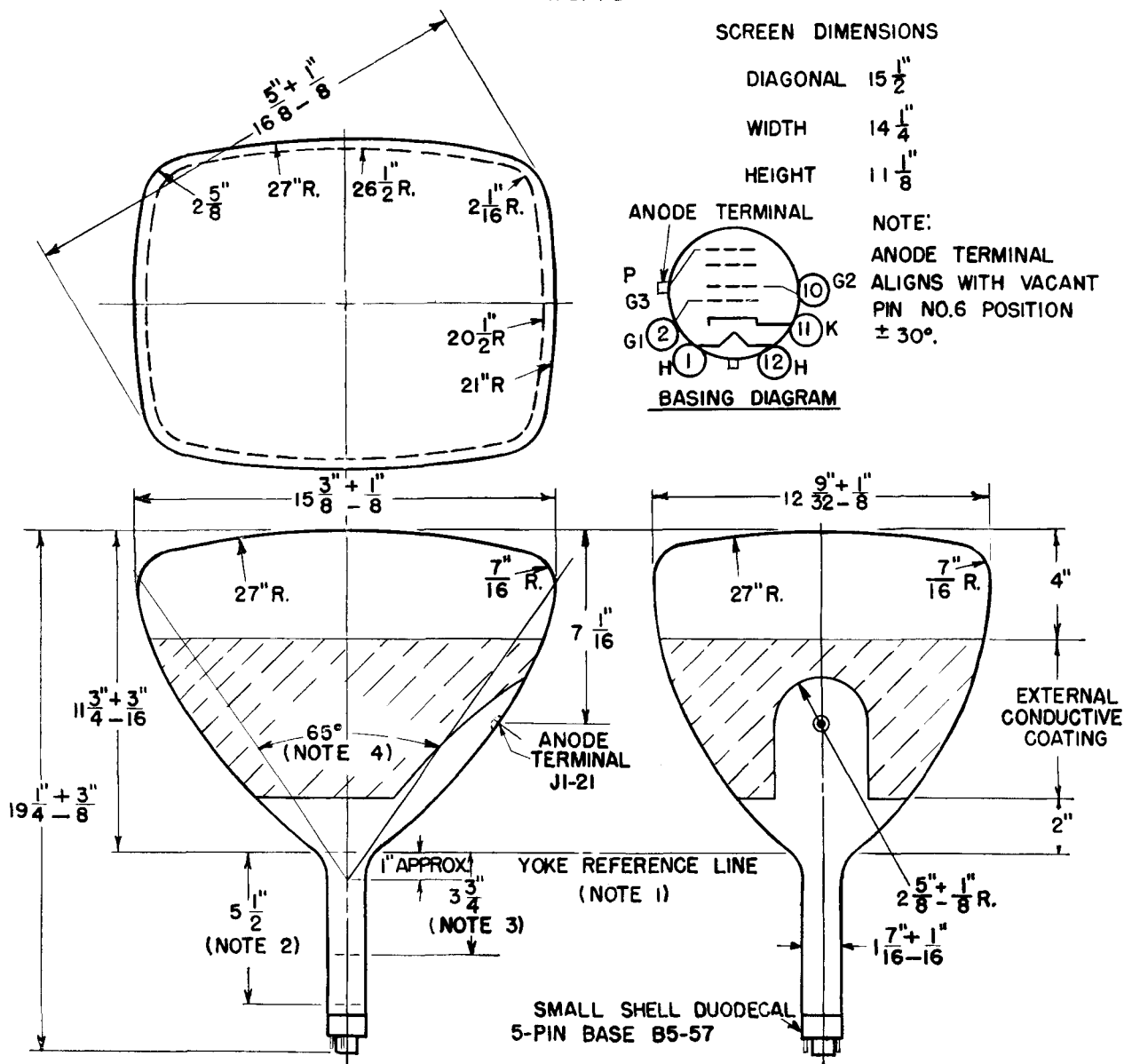
HEIGHT $11\frac{1}{8}$ "

ANODE TERMINAL



NOTE:

ANODE TERMINAL
ALIGNS WITH VACANT
PIN NO.6 POSITION
 $\pm 30^\circ$.



NOTES:

1. REFERENCE LINE IS DETERMINED BY THE PLANE OF THE UPPER EDGE OF THE REFERENCE-LINE GAGE (RTMA NO. 110) WHEN THE GAGE IS RESTING ON THE CONE.
2. NOMINAL POSITION OF ION-TRAP MAGNET.
3. RECOMMENDED POSITION FOR CENTER OF FOCUSING FIELD.
4. DEFLECTION ANGLE ON DIAGONAL IS 70 DEGREES.

N-15180AZ

Tube Divisions, Electronics Department

GENERAL ELECTRIC

Schenectady, N. Y.

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