



# 5FP7-B

## CATHODE-RAY TUBE

5-INCH ROUND, GLASS  
FOCUS—MAGNETIC  
DEFLECTION—MAGNETIC

53-DEGREE DEFLECTION ANGLE  
FACEPLATE—SPHERICAL, CLEAR  
HIGH-RESOLUTION GUN  
PERSISTENCE—LONG

### DESCRIPTION AND RATING

The 5FP7-B is a 5-inch magnetic-focus and -deflection cathode-ray tube for radar and oscillographic applications that require a long persistence. A particular feature of this tube is the high-resolution electron gun which provides a small spot size, an improved spot shape, high resolution, and considerable depth of focus.

#### GENERAL

##### ELECTRICAL

Heater Voltage . . . . .	6.3	Volts
Heater Current . . . . .	0.6 ± 10%	Amperes
Focusing Method—Magnetic		
Deflecting Method—Magnetic		
Deflection Angle, approximate . . . . .	53	Degrees
Direct Interelectrode Capacitances, approximate		
Cathode to All Other Electrodes . . . . .	5	μμf
Grid-No. 1 to All Other Electrodes . . . . .	8	μμf

##### OPTICAL

Phosphor Number—P7  
Fluorescent Color—Blue-White  
Phosphorescent Color—Yellow  
Persistence—Long

Faceplate—Clear

##### MECHANICAL

Over-all Length . . . . .	11 1/8 ± 3/8	Inches
Greatest Bulb Diameter . . . . .	4 1/8 ± 3/32	Inches
Minimum Useful Screen Diameter . . . . .	4 1/4	Inches

Bulb Number, ASA Designation—J39 1/2 L  
Bulb Contact—Recessed Small-ball Cap, JETEC No. J1-22  
Base—Long Medium-shell Octal 8-Pin, JETEC No. B8-65  
Basing, JETEC Designation—5AN  
Bulb Contact Alignment  
    Anode Contact Aligns with Pin No. 5 ± 10 Degrees  
Mounting Position—Any



## MAXIMUM RATINGS\*

### DESIGN-CENTER VALUES†

Anode Voltage‡	12,000 Max	Volts DC
Grid-No. 2 Voltage	700 Max	Volts DC
Grid-No. 1 Voltage		
Negative-Bias Value	180 Max	Volts DC
Positive-Bias Value	0 Max	Volts DC
Positive-Peak Value	2 Max	Volts
Peak Grid-No. 1 Drive from Cutoff	65 Max	Volts
Peak Heater-Cathode Voltage		
Heater Negative with Respect to Cathode	180 Max	Volts
Heater Positive with Respect to Cathode	180 Max	Volts

### TYPICAL OPERATING CONDITIONS\*

Anode Voltage §	7000	Volts DC
Grid-No. 2 Voltage	250	Volts DC
Grid-No. 1 Voltage ¶	-25 to -70	Volts DC
Focusing-Coil Current $\phi$ , approximate	115	Milliamperes DC
Line Width A ♦	0.23	Millimeters
Spot Position ▲	9	Millimeters

### MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance	1.5	Max Megohms
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\*All voltages are measured with respect to cathode.

†The maximum ratings provide a ten percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than ten percent.

‡Anode and grid-No. 3 which are connected together within the tube are referred to herein as anode.

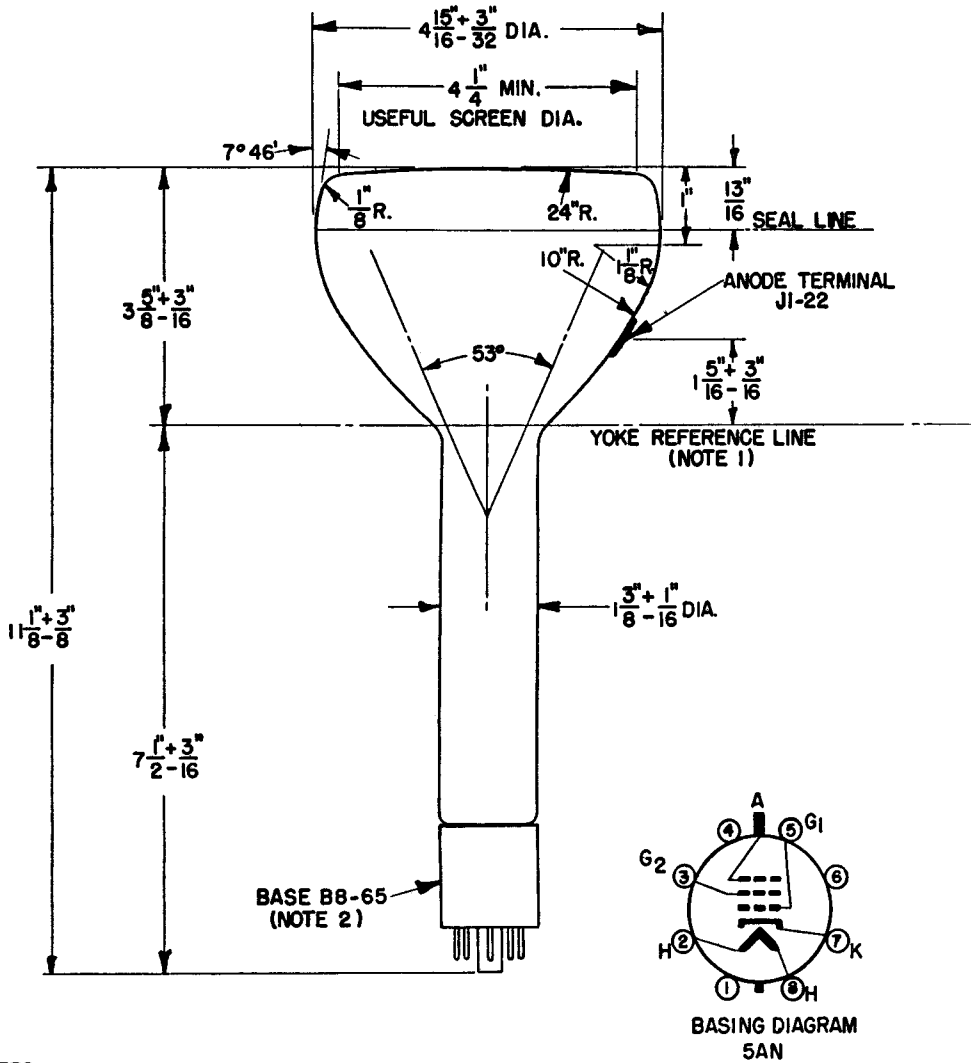
§Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 4000 volts.

¶For visual extinction of undeflected focused spot.

$\phi$ For RETMA focusing coil No. 106 with distance from the yoke reference line to center of air gap equal to 2¾ inches.

♦Measured in accordance with specification MIL-E-1C paragraph 4.12.6.2 at an anode current of 200 microamperes.

▲The center of the undeflected, unfocused spot will fall within a circle of 9 millimeters radius concentric with the tube face.



**NOTES:**

1. REFERENCE LINE IS DETERMINED BY THE POINT WHERE A GAGE 1.430 ± 0.003 INCHES INSIDE DIAMETER AND 2 INCHES IN LENGTH STOPS AGAINST THE CONE.
2. ANODE TERMINAL ALIGNS WITH PIN-NO. 5 ± 10 DEGREES.