Electronic TUBES

5FP14-A

CATHODE-RAY TUBE

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

53-DEGREE DEFLECTION ANGLE
HIGH-RESOLUTION GUN
PERSISTENCE—MEDIUM LONG

DESCRIPTION AND RATING

The 5FP14-A is a magnetic-focus and -deflection cathode-ray tube for radar applications. It employs a high-resolution electron gun which affords an exceptionally narrow trace on the fluorescent screen.

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	5.0	μμf
Grid-No. 1 to All Other Electrodes	8.0	μμf

OPTICAL

Phosphor Number—P14
Fluorescent Color—Purple
Phosphorescent Color—Orange
Persistence—Medium Long

Faceplate—Clear

MECHANICAL

Over-all Length	11⅛ ± ⅜	Inches
Greatest Bulb Diameter	$4\frac{15}{16} \pm \frac{3}{32}$	Inches
Minimum Useful Screen Diameter	4¼	Inches

Bulb Number, ASA Designation—J39-½L
Bulb Contact—Recessed Small-ball Cap, JETEC No. J1–22
Base—Medium-shell Octal 8-Pin, JETEC No. B8–11 or
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†	8000 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	5000	Volts DC
Grid-No. 2 Voltage	250	Volts DC
Grid-No. 1 Voltage§	−25 to −70	Volts DC
Focusing-Coil Currentπ, approximate	97	Milliamperes DC
Line Width Aϕ	0.23	Max Millimeters
Spot Position▲	9	Millimeters

MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance	1.5 Max	Megohms

* 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.

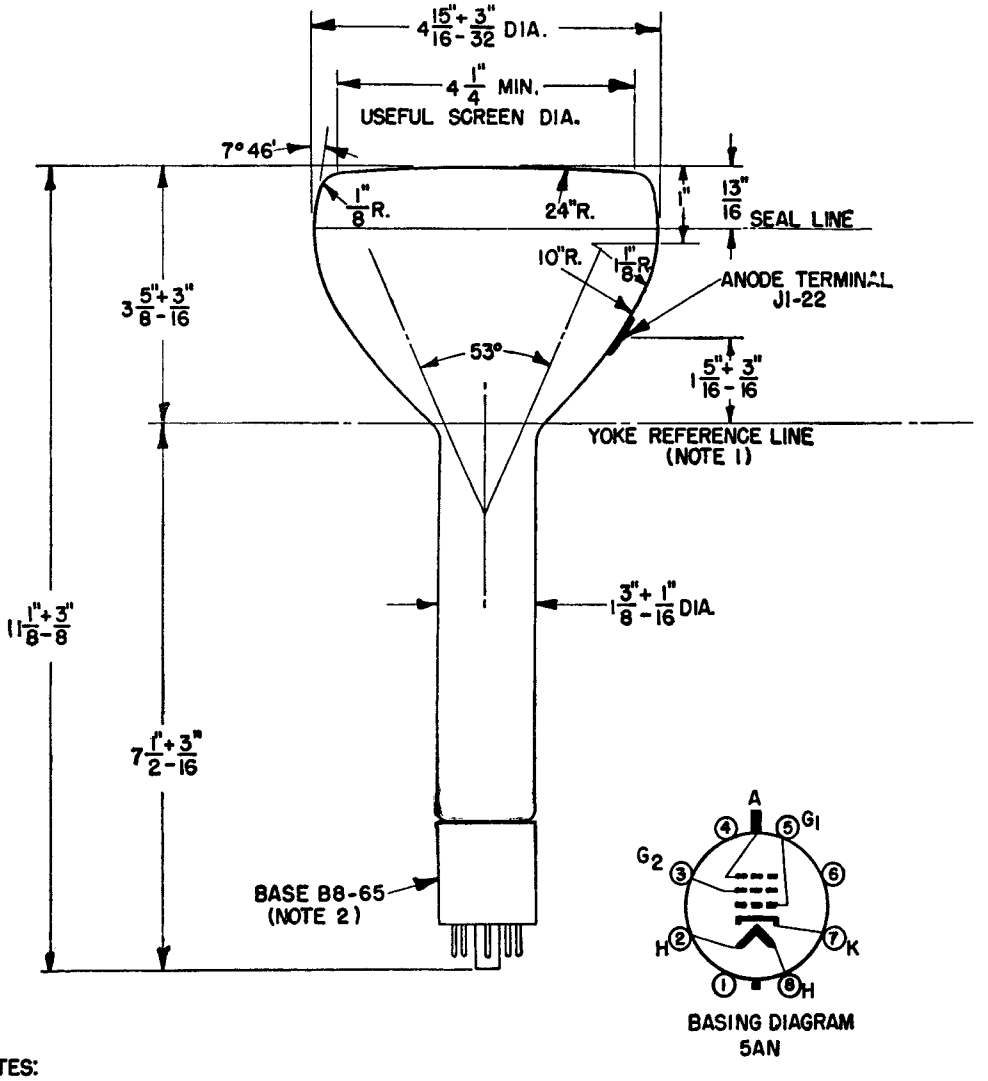
‡ Cathode should be returned to one side or to the midtap of the heater transformer winding.

§ For visual extinction of focused undeflected spot.

π For JETEC focusing coil No. 106 with distance from the yoke-reference-line to center-of-air-gap equal to 2¾ inches.

ϕ Measured in accordance with specification MIL-E-1B, 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 ±.003 INCHES INSIDE DIAMETER AND 2 INCHES IN LENGTH STOPS AGAINST THE CONE.
2. ANODE TERMINAL ALIGNS WITH PIN-NO. 5 ± 10 DEGREES.