
ELECTRON TUBE DATA SHEET
WESTERN ELECTRIC 413B ELECTRON TUBE



DESCRIPTION

The 413B is a two-electrode inert-gas-filled cold cathode tube having a high current rating. In addition to its initial field of use in telephone message register circuits it is especially suitable also for use in control circuits such as in switching or pulse counting apparatus.

CHARACTERISTICS

Forward or Inverse Average Cathode Current	20	200 milliamperes
Average Life, Approximate	10000	10 hours

File: Cold Cathode Section

MAXIMUM RATINGS, Absolute System (Note 1)

Cathode Current (Note 2)		
Peak, Forward or Inverse		200 milliamperes
Average, Forward or Inverse		70 milliamperes
Averaging Time		2 seconds
Ambient Temperature Limits	-55 to +85	centigrade

ELECTRICAL DATA, Throughout Life

	<u>Min.</u>	<u>Bogey</u>	<u>Max.</u>	
Anode Breakdown Voltage				
Forward	180	200	255	volts
Inverse	180	200	-	volts
Anode Voltage Drop, Forward or Inverse	55	62	75	volts
Ionization Time (Note 3)	-	1	-	millisecond
Deionization Time, Approximate	-	2	-	milliseconds

MECHANICAL DATA

Mounting Position Any
 Net Weight, Approximate 1.2 Ounces
 Dimensions and pin connections shown in outline drawing on page 3.

HANDLING

This tube contains a small amount of krypton-85 gas which is a by-product radioactive material. The amount of krypton-85 is less than five microcuries, which is too small an amount to require any special care in use.

Atomic Energy Commission regulations require that the individual tube carton for tubes containing by-product radioactive material be appropriately marked. The marking includes the statement that tube disposal should be in approved manner.

Approved instructions for disposal of tubes containing krypton-85 are as follows;

Tubes to be disposed of should be broken or crushed in a well ventilated place releasing any resulting vapors to the outside atmosphere. The residual broken or crushed tubes should be disposed of in a normal public trash disposal system. Tubes should be disposed of at a rate of not more than 100 each week from any one location. Avoid breathing vapors from broken tubes.

Note 1: In the "Absolute System" the maximum ratings specified are limiting values above which the serviceability of the device may be impaired from the viewpoint of life and satisfactory performance. Maximum ratings, as such, do not constitute a set of operating conditions and all values may not, therefore, be attained simultaneously.

Note 2: Sufficient resistance must be used in series with the tube to assure that the electrode currents do not exceed their maximum rated values.

Note 3: With 15 volts overvoltage (15 volts above anode breakdown voltage) when tube is in total darkness.

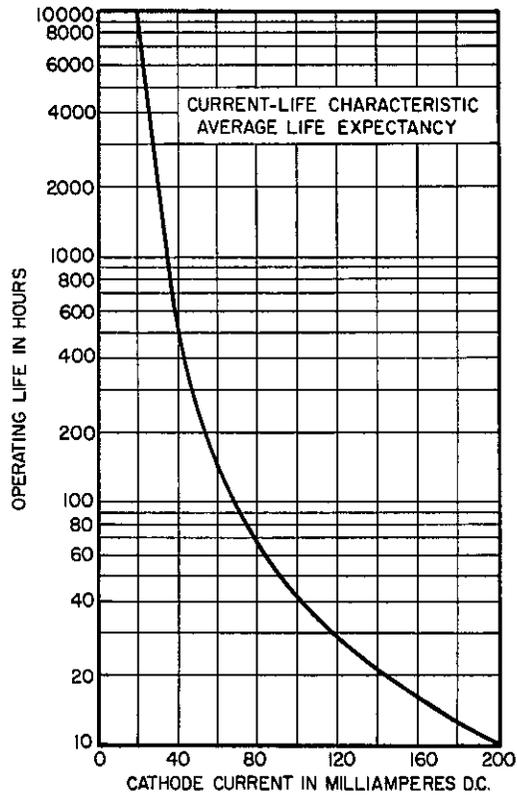


FIG. 1

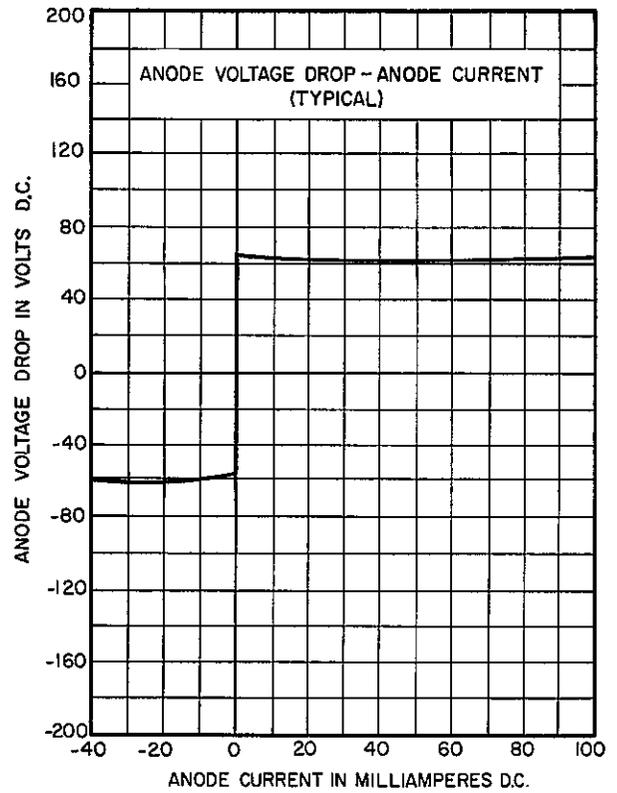
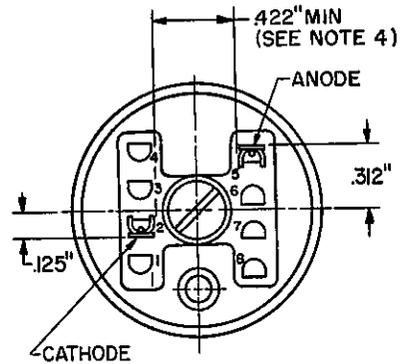
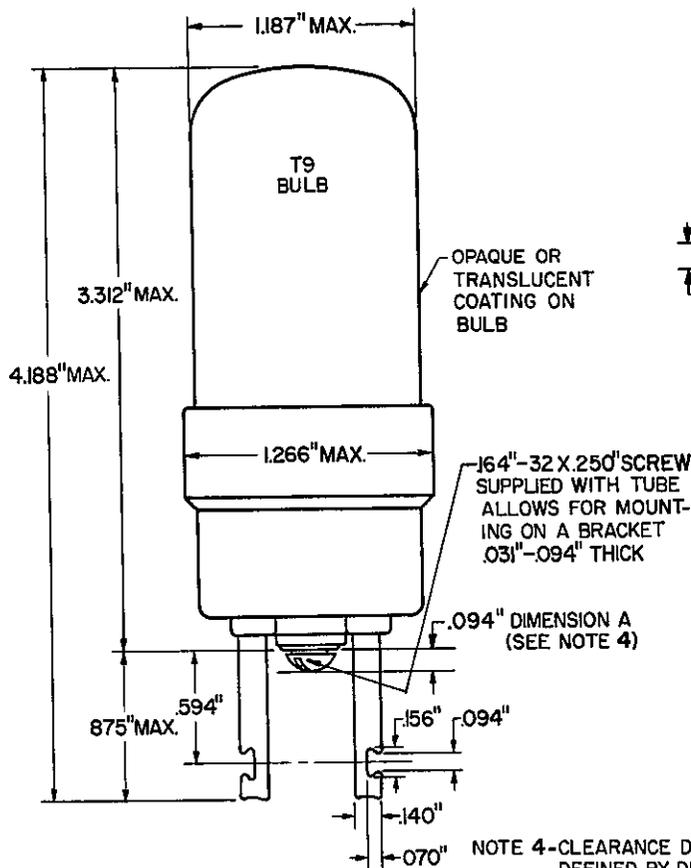
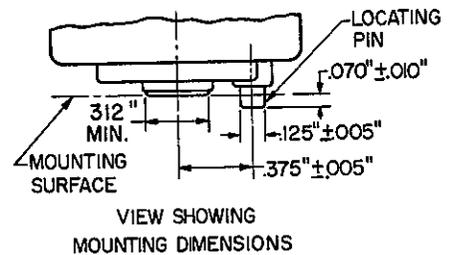


FIG. 2



BASE END VIEW



VIEW SHOWING MOUNTING DIMENSIONS

NOTE 4-CLEARANCE DIMENSIONS TO APPLY WITHIN THE LIMITS DEFINED BY DIMENSION 'A' ONLY. (SEE BASE END VIEW)

Western Electric Company

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