
ELECTRON TUBE DATA SHEET
WESTERN ELECTRIC 443A ELECTRON TUBE



DESCRIPTION

The 443A is a three-electrode inert-gas filled miniature cold cathode tube for use in relay, voltage regulator or rectifier circuits. This tube is especially suitable for use in control circuits such as in triggering, counting or switching apparatus.

This tube is designed for socket mounting. It is identical, electrically and mechanically, to the 426A except that it is not attached to a plastic angle mounting bracket.

CHARACTERISTICS

Peak Anode Voltage		180	volts
Average Cathode Current	7.5	60	milliamperes
Average Life, Approximate	10000	10	hours

File: Cold Cathode Section

MAXIMUM RATINGS, Absolute System (Note 1)

Forward Peak Anode Voltage	180	volts
Forward Cathode Current (Note 2)		
Peak	60	milliamperes
Average	30	milliamperes
Averaging Time	2	seconds
Peak Inverse Current (Note 2)		
Anode	5	milliamperes
Starter	1	milliampere
Ambient Temperature Limits	-55 to +85	centigrade

ELECTRICAL DATA, Throughout Life

	<u>Min.</u>	<u>Bogey</u>	<u>Max.</u>	
Starter Breakdown Voltage	65	72	85	volts
Starter Voltage Drop at 3 Milliamperes (Note 3)	53	63	72	volts
Anode Voltage Drop at 10 Milliamperes (Notes 4 & 5)	63	69	75	volts
Transfer Current	See Curve - Fig. 1			
Ionization Time, Starter Gap (Note 6)	-	10	-	milliseconds
Deionization Time, Main Gap	-	6	-	milliseconds
Inverse Current at -120 Volts Anode Potential (Note 7)	-	-	3	milliamperes

MECHANICAL DATA

Mounting Any Position
 Net Weight 0.3 Ounce
 Dimensions and Pin Connections shown in outline drawing on Page 4.

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 the maximum rated values.

Note 3: Starter voltage oscillations of approximately 1 to 10 kilocycles and 12 volts peak-to-peak will be present at starter current values below 0.05 milliampere.

Note 4: Approximately 95% of tubes will be within limits of ± 2.8 volts from the bogey value.

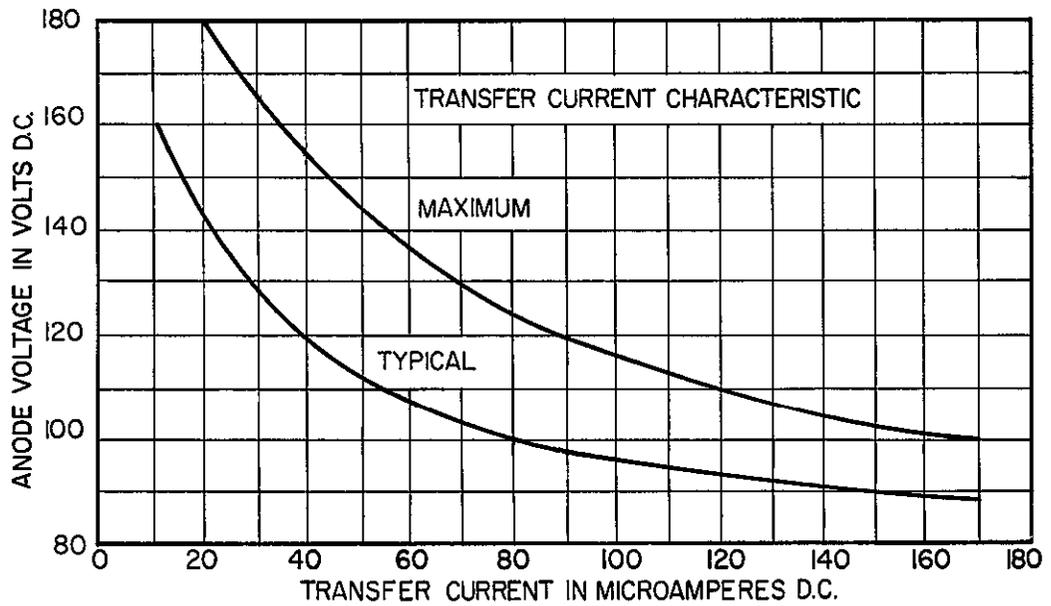


FIG. 1

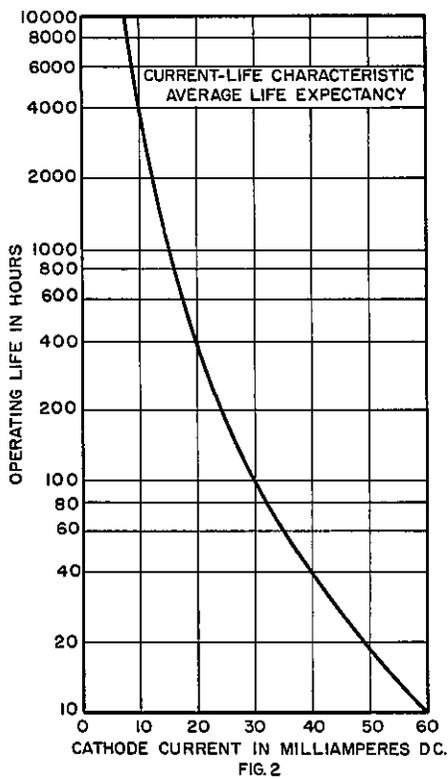


FIG. 2

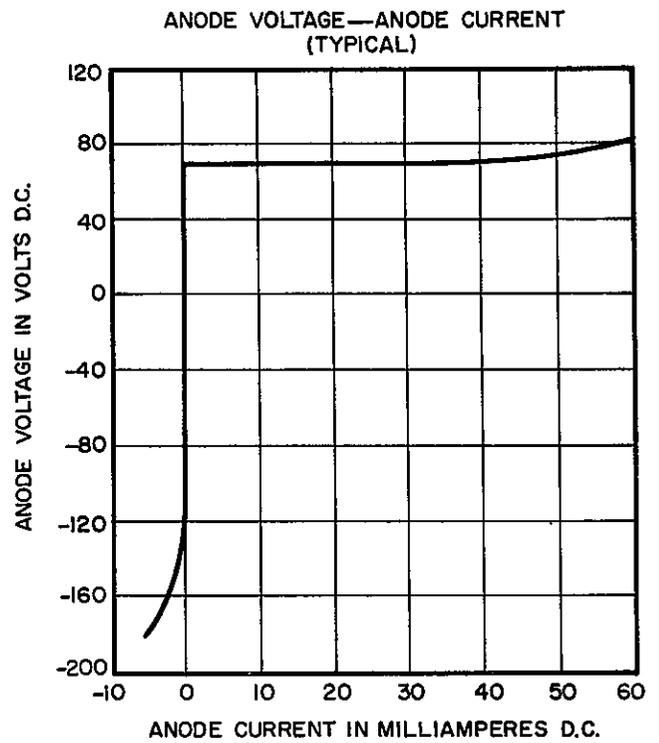


FIG. 3

Note 5: Anode voltage oscillations of approximately 5 to 20 kilocycles and 3 volts peak-to-peak will be present at anode currents within the ratings.

Note 6: With 15 volts starter overvoltage (15 volts above Starter Breakdown Voltage) with tube in total darkness.

Note 7: Negative anode voltage applied through 8000 ohms. Starter connected to anode through 100,000 ohms.

STARTER VOLTAGE—STARTER CURRENT
(TYPICAL)

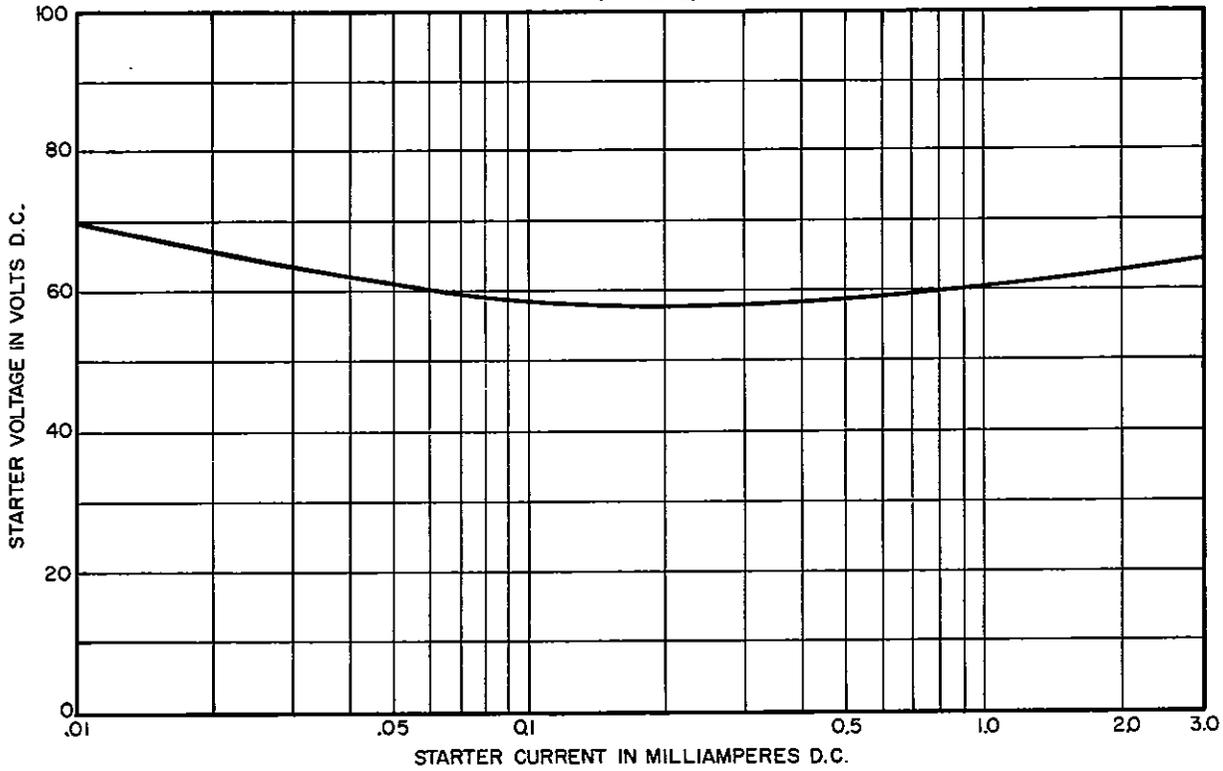
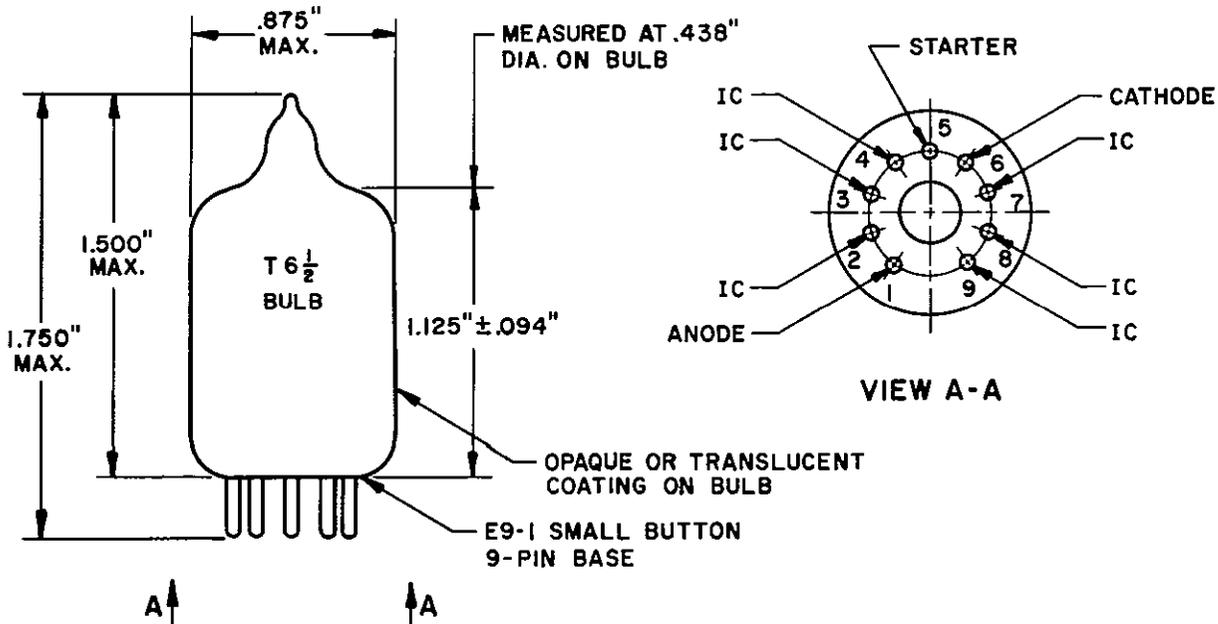


FIG. 4



NOTE: PINS MARKED IC (INTERNAL CONNECTION) SHOULD NOT BE CONNECTED TO ANY PORTION OF AN EXTERNAL CIRCUIT. FAILURE TO OBSERVE THIS PRECAUTION MAY RESULT IN IMPROPER OPERATION OF THE TUBE.

A development of Bell Telephone Laboratories, the research laboratories of the American Telephone and Telegraph Company and the Western Electric Company.