ELECTRON TUBE DATA SHEET

WESTERN ELECTRIC 359A ELECTRON TUBE

DESCRIPTION

The 359A is a three-electrode, inert-gas-filled, cold cathode tube for use primarily as a relay in communication circuits. It is also suitable for use in control circuits such as in triggering, counting or switching apparatus and as a visual indicator. This tube, by reason of small size and provision for wiring directly into the circuits, may be used to advantage in equipment having limited space for components.

CHARACTERISTICS

Peak Anode Voltage, Maximum	165	165	volts
Average Cathode Current	4	40	milliamperes
Average Life, Approximate	10000	10	hours

FILE: COLD CATHODE SECTION

Indicates a change←

MAXIMUM RATINGS, Absolute System (Note 1)

Peak Anode Voltage (Note 2)		
Forward	165	volts
Inverse	165	volts
Forward Cathode Current (Note 3)		
Peak	40	milliamperes
Average	15	milliamperes
Averaging Time	1	second
Peak Inverse Current, Anode or Starter (Note 3)	1	milliampere
Ambient Temperature Limits	-55° to +85°	centigrade

ELECTRICAL DATA (Throughout Life)

	Min.	Bogey	Max.	
Starter Breakdown Voltage (Notes 2 & 4)	67	80	89	volts
Starter Voltage Drop at 10 Milliamperes	52	65	74	volts
Anode Voltage Drop at 10 Milliamperes	66	80	90	volts
Transfer Current	See curve, Figure 1			
Required Transfer Current at 130 Anode Volts	50	-	-	microamperes
Deionization Time, Main Gap	-	1	-	millisecond
Ionization Time, Starter Gap (Note 5)	-	0.05	-	millisecond

MECHANICAL DATA

Mounting Position		Any
New Weight, Approximate	0.4	ounce

Dimensions and lead connections shown in outline drawings 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.

→ Indicates a change

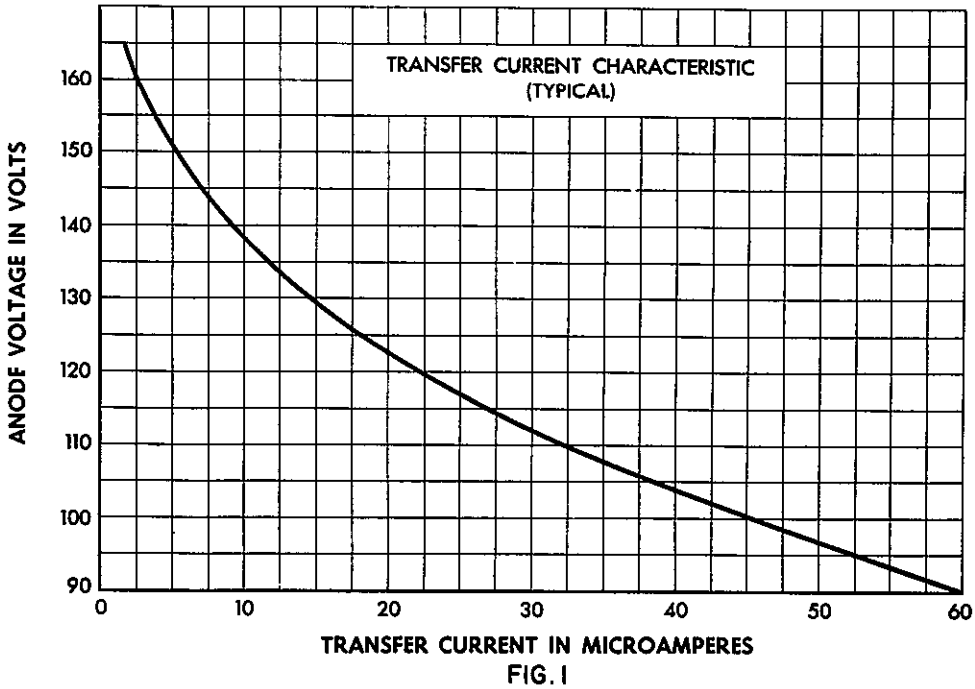


FIG. 1

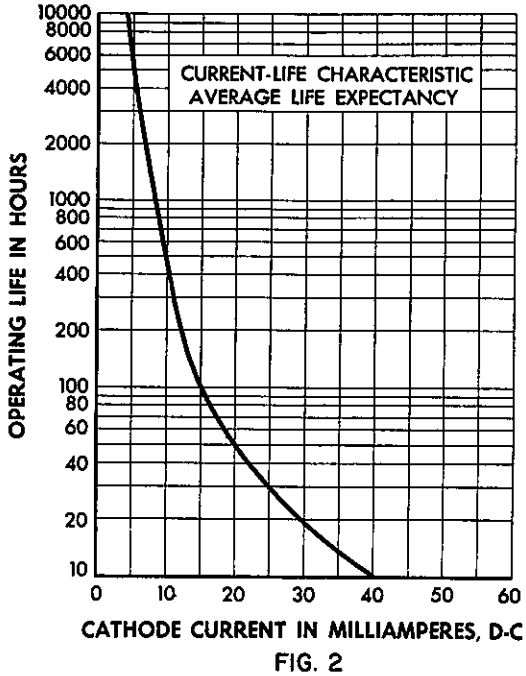


FIG. 2

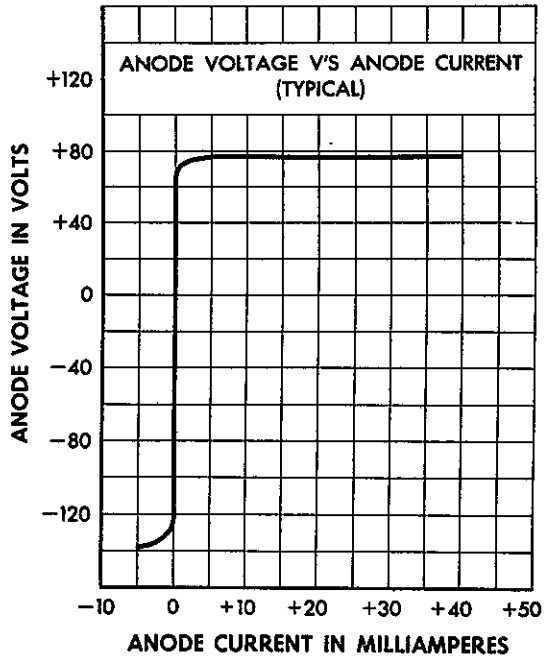


FIG. 3

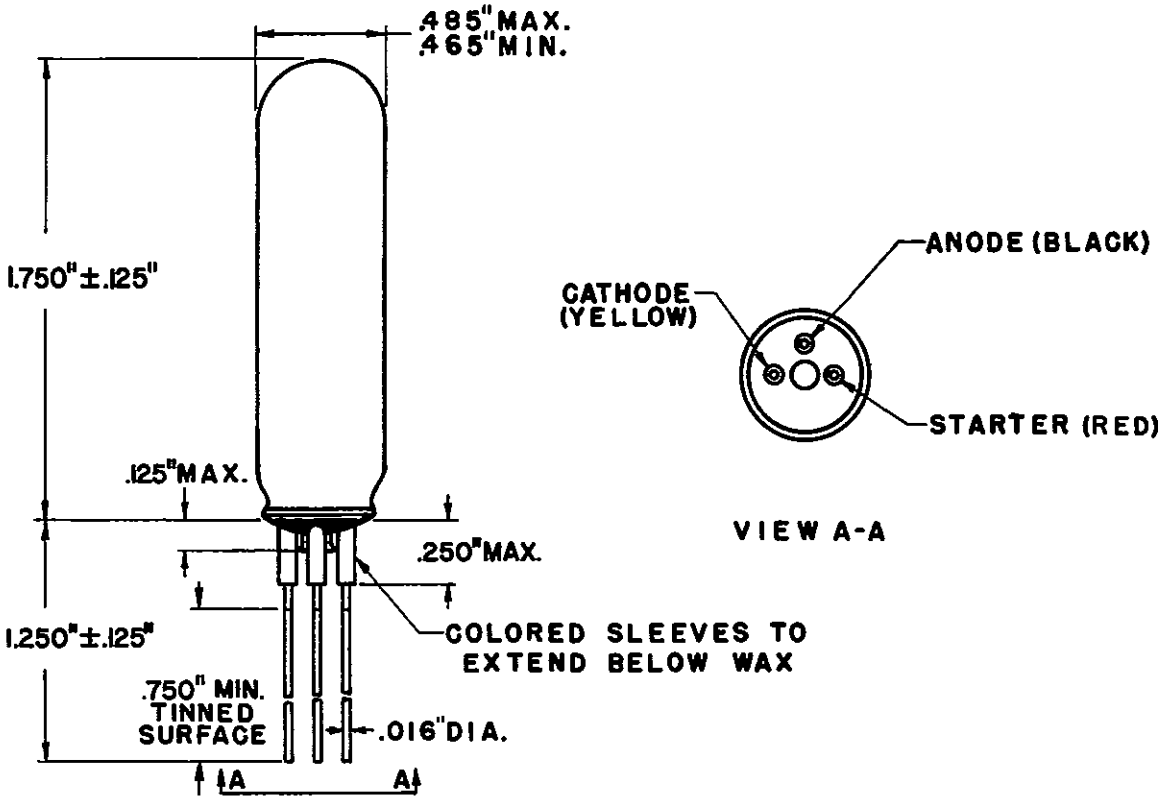
Note 2: Values apply with the tube exposed to light in the order of 5 to 30 foot-candles. Exposure to direct sunlight may reduce peak anode voltage rating by as much as 45 volts and starter breakdown voltage by as much as 2 volts.

Note 3: Sufficient resistance must be used in series with the tube to assure that the electrode currents do not exceed the maximum rated valves.

Note 4: Limits apply immediately after the tube has conducted current. If the tube has been idle, initially these values may be as much as 3 volts higher or lower.

Note 5: With 15 volts starter overvoltage. This value applies with the tube exposed to light in the order of 5 to 30 foot-candles. In darkness, ionization time will increase to a bogey value of 5 milliseconds.

← Indicates a change



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

PRINTED IN U.S.A.