TENTATIVE

Bendix Red Bank Type TD–70

SUBMINIATURE TIME TOTALIZER

MECHANICAL DATA

Envelope	T–3
Base	Button-subminiature 8 pin long leads
Bulb length	1.70 in. max.
Diameter	0.400 in. max.
Mounting position	Any
Ambient Temperature	–55°C. to +55°C.

ELECTRICAL DATA

Cathode	Cold
Tube drop	118 Vdc nominal
Cathode current	0.36 mAdc
Supply voltage	See Figure 3
Operating time	1000 hours
Accuracy at rated current	±20% to 1000 hours
Collector Dissipation	Average 50 mw max. Peak 100 mw max.

DESCRIPTION

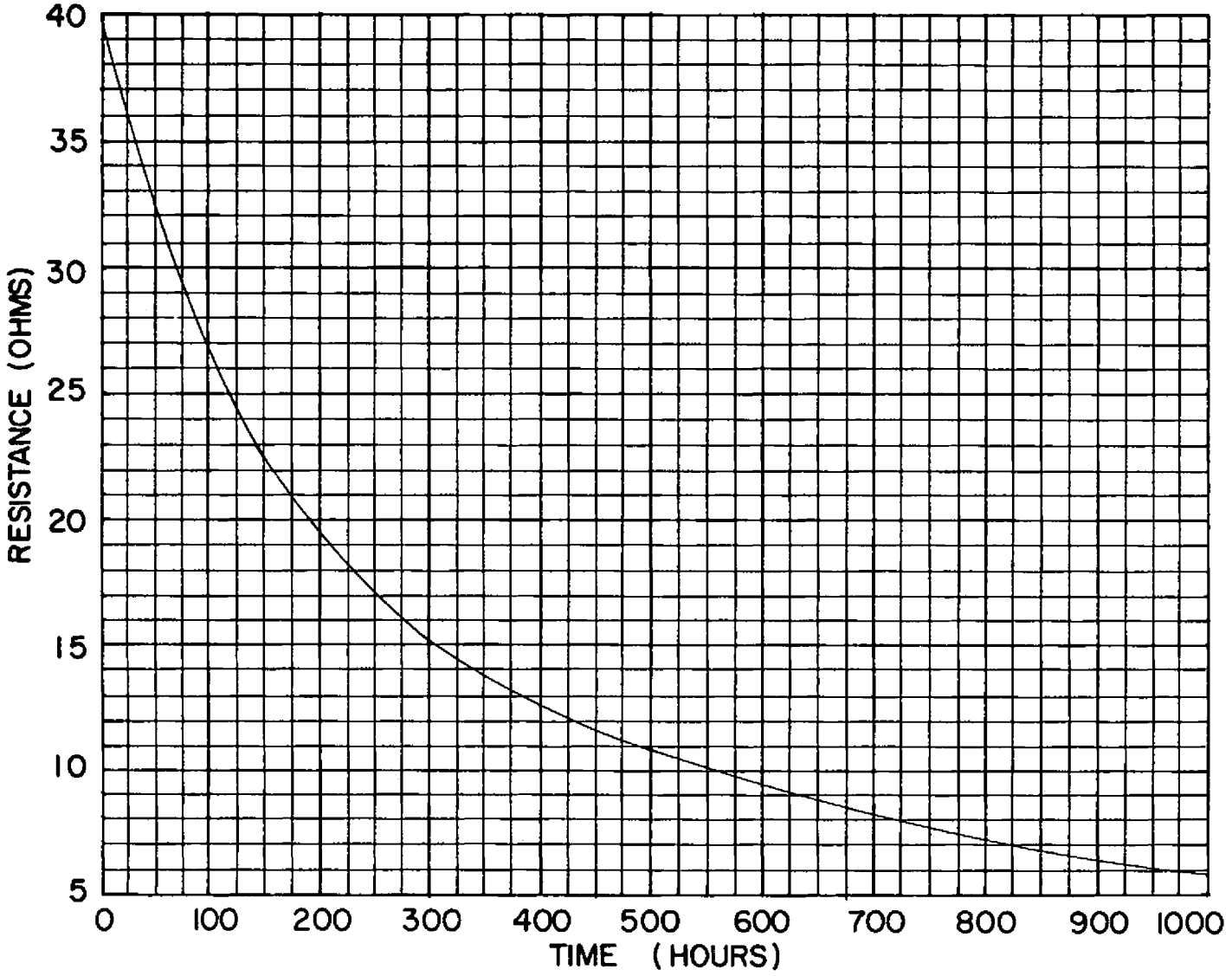
This subminiature gas filled tube is designed for use as a cumulative time measuring device. Total nominal operating time is 1000 hours at rated current.

The tube consists of an anode, a cathode and a collector element. The tube operates by passage of a current between anode and cathode. This part of the tube has essentially the same characteristics as any cold cathode gas diode. Operation is accomplished by drawing current from a DC source through a limiting resistor in series with the anode as shown in Figure 2. Adjustment of the load resistance should be made to provide a current of 0.36 milliamperes for a nominal tube drop of 118 volts. Tubes having anode voltage different from this value will draw a correspondingly different current which will be correct for the particular tube. A graph showing recommended load resistance values for various supply voltages is shown in Figure 3.

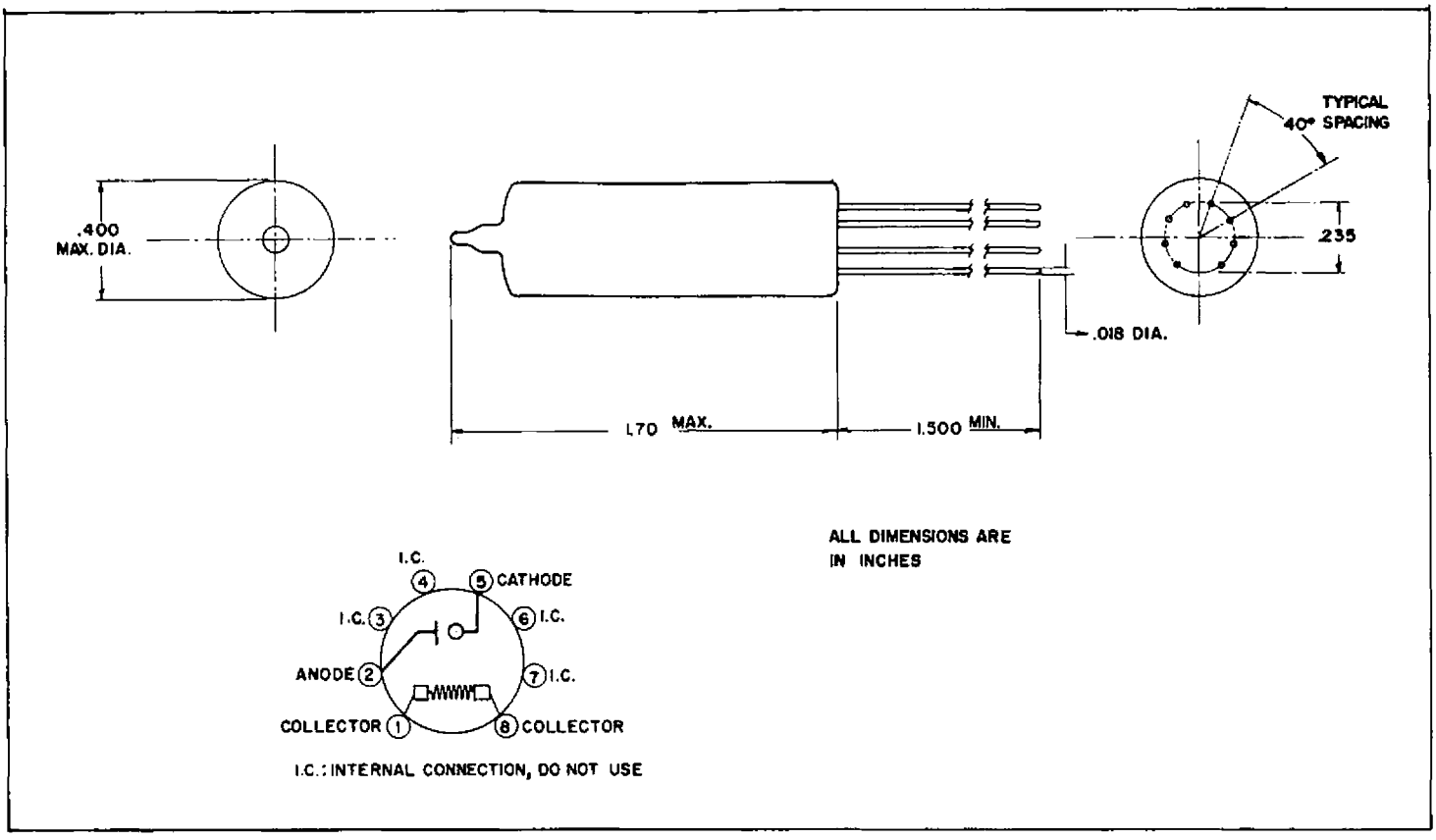
During operation metallic vapor from the cathode is deposited on the collector thereby changing the resistance across the collector contacts. Resistance measurements made between pins 1 and 8, collector contacts, determine the operating time of the tube. Conversion from ohms to hours can be made by referring to the graph in Figure 1 of this data sheet. Diode current must be off during resistance measurements to prevent diode current leakage into the resistance measuring circuit with resultant error in measured elapsed time. No potentials should be applied to the collector during operation of the diode circuit; furthermore, collector contacts must not be grounded during operation of the tube.

BASE CONNECTIONS

No. 1 – Collector contact
No. 2 – Anode
No. 3 – I.C. – Do not use
No. 4 – I.C. – Do not use
No. 5 – Cathode
No. 6 – I.C. – Do not use
No. 7 – I.C. – Do not use
No. 8 – Collector contact



COLLECTOR RESISTANCE vs OPERATING TIME
FIG. 1



OUTLINE DRAWING

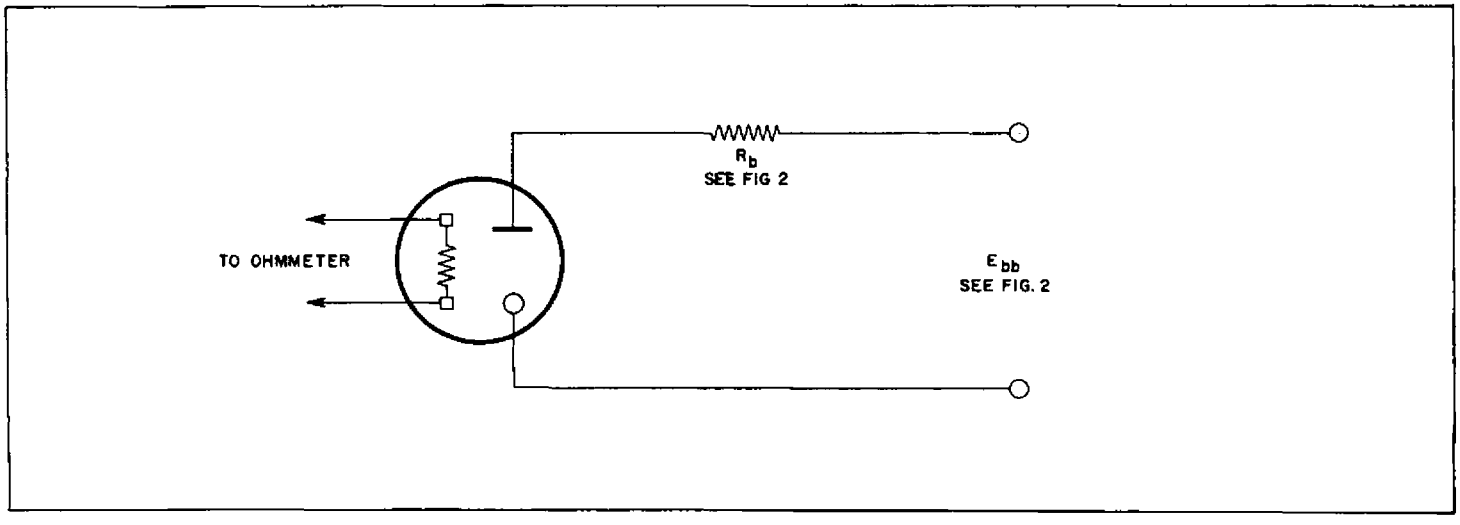


FIG. 2 OPERATING CIRCUIT

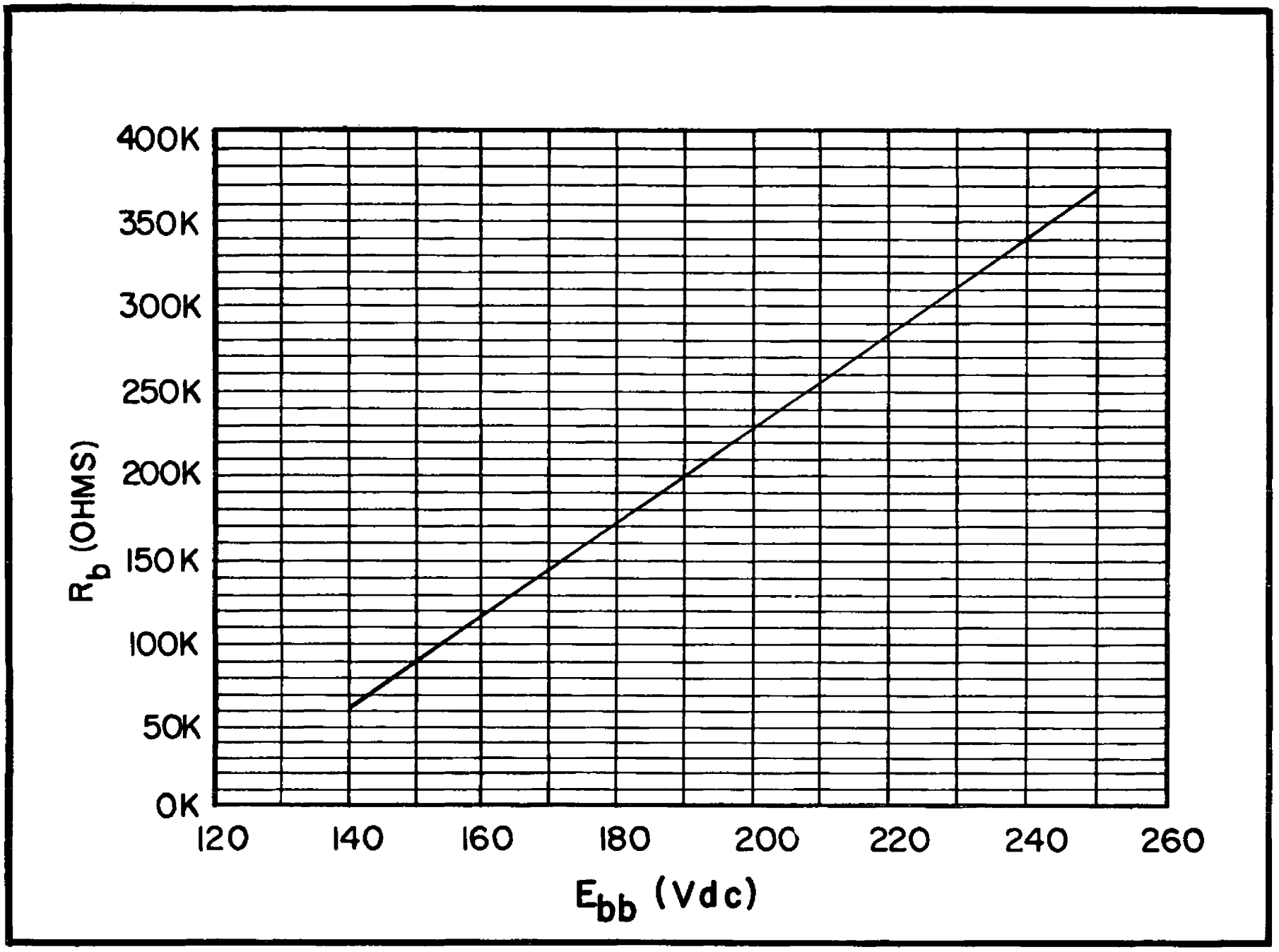


FIG. 3 PLATE SUPPLY - LOAD RESISTANCE