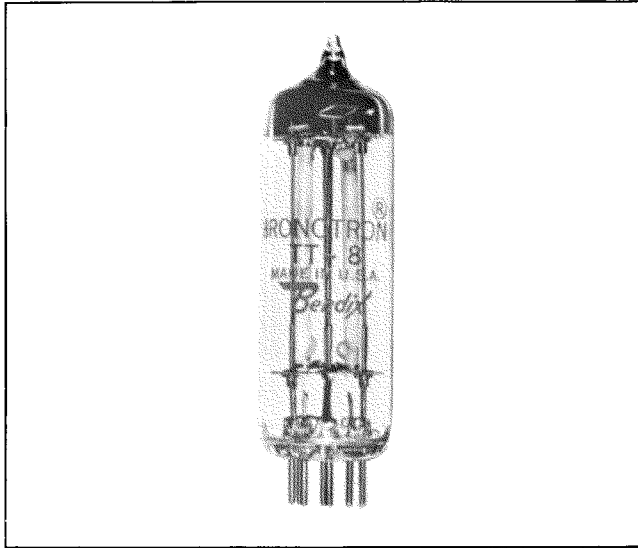


CHRONOTRONS



OPERATING CHARACTERISTICS

Since heaters and secondaries are electrically isolated, any type of heater voltage may be used, a-c, d-c, or any wave form. The secondary bridge may also be excited with a voltage of any desired wave form. If heater currents, for example, come from a vacuum tube amplifier and contain undesirable harmonics, the secondary bridge can be excited with a pure sine wave voltage resulting in an output voltage almost free from distortion or undesirable harmonics.

The working parts of the Chronotron have virtually an indefinite life. Enclosed in a sealed envelope they operate at moderate temperatures and have no electron emission.

PHYSICAL CHARACTERISTICS

Base.....	7 pin miniature
Bulb	T 5½
Max. overall length.....	2⅝ inch
Max. seated height.....	2¾ inch
Max. diameter	¾ inch
Ambient temperature limit.....	-40° to +60°C.
Mounting position.....	vertical or horizontal

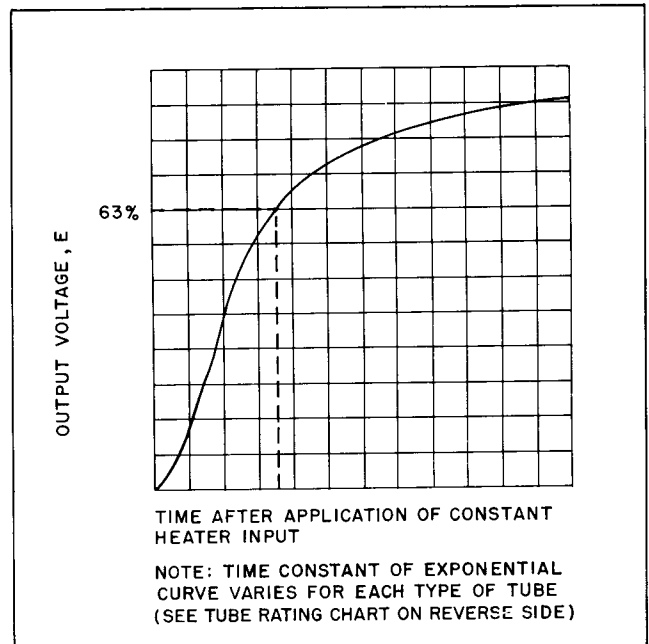
*Illustrated.

DESCRIPTION

These tubes are designed for use in electronic control circuits to provide a time delay in a manner similar to an integrating device. They are temperature-resistance devices with two heaters and two secondaries mounted in a miniature-size vacuum tube. The secondaries are resistance windings used in a balanced bridge circuit. A variation in one heater current changes the temperature of the corresponding secondary resistance winding. A temperature change will cause the secondary wire which has a positive temperature coefficient of resistivity to unbalance the secondary bridge giving rise to an output voltage. After a heater is energized, the rate of increase in output voltage is determined by the time constant of the tube, which is the time required for the output voltage to reach 63% of its maximum value.

Time constants contained in the rating chart on the reverse side of this sheet have been compiled using the tube in a static bridge circuit. Other time constant readings may be obtained when using the tube in other types of circuits.

TYPICAL OUTPUT CHARACTERISTIC



THE **Bendix** CORPORATION

Red Bank DIVISION, EATONTOWN, NEW JERSEY

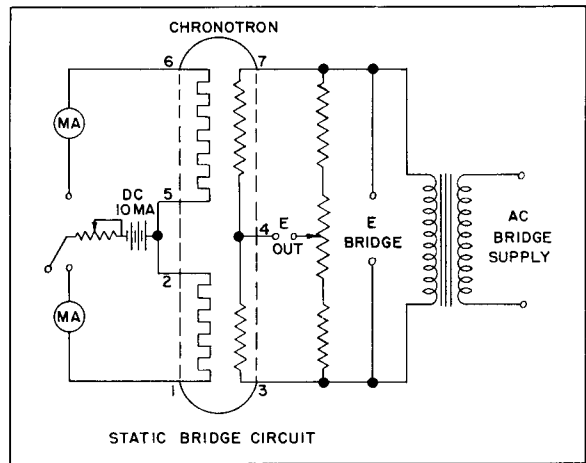
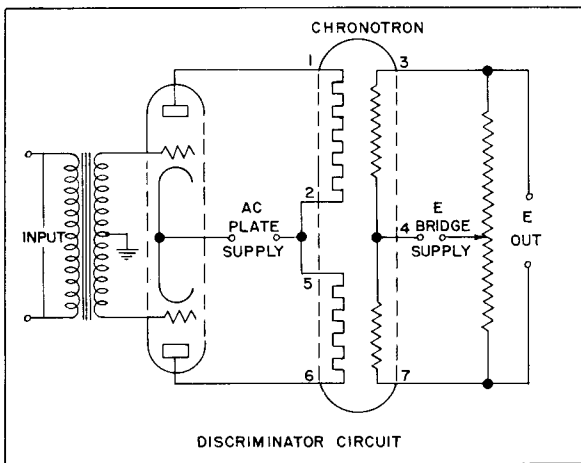
CHRONOTRONS

Bendix Types { TT-8*, TT-9, TT-13
TT-15, TT-17, TT-18
TT-20, TT-21, TT-22

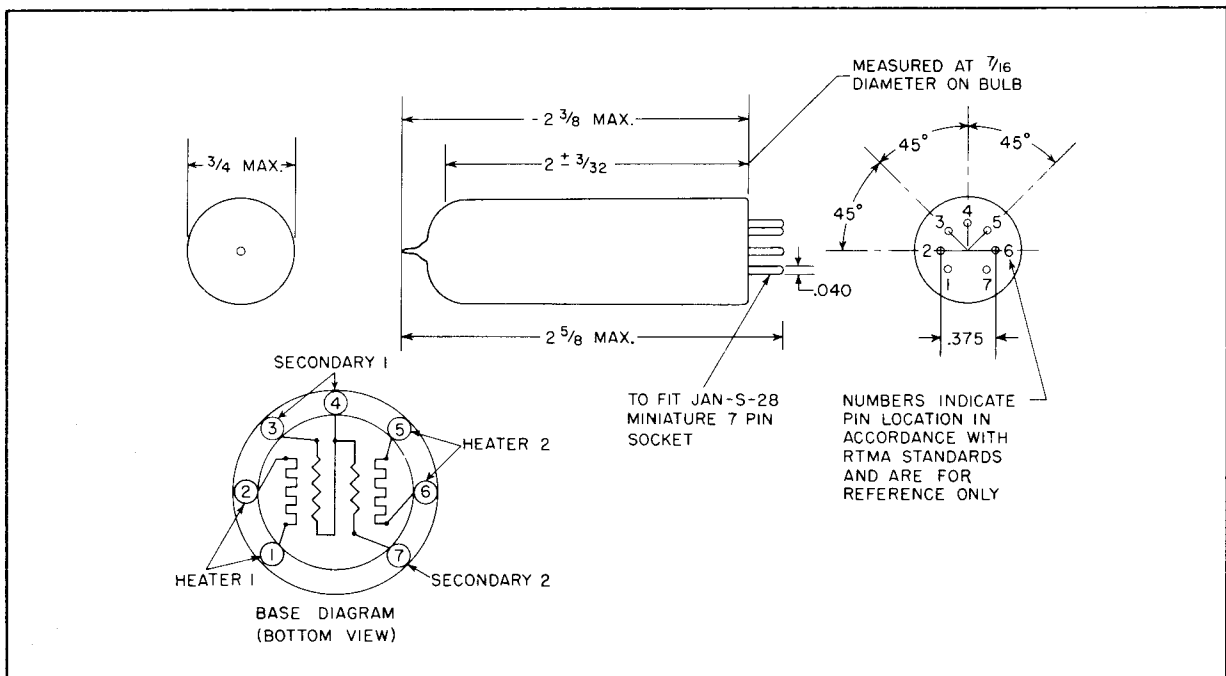
Red Bank Type Number	Heater Resistance Ohms	Secondary Resistance Ohms	Heater Input Ma.	Bridge Voltage	Bridge Output Volts	Time Constant Sec.
TT-8	1000	450	10	20	.080	10
TT-9	300	125	10	10	.150	19
TT-13	500	265	10	20	.050	15
TT-15	1000	500	10	20	.250	130
TT-17	2000	500	10	20	.250	2
TT-18	1000	500	10	20	.350	50
TT-20	2000	500	10	20	.100	18
TT-21	1000	500	10	20	.080	4
TT-22	1000	500	10	20	.050	22

RATING CHART

Chronotrons having other heater resistances, secondary resistances or time constants can be made on special order.



TYPICAL CIRCUIT APPLICATIONS



OUTLINE DRAWING