

7977A

Bulletin No. 1047

October 15, 1963

(B-4032A) Ultra Long Life NIXIE® Tube

The 7977A (B-4032A) is a gas filled, cold cathode, miniature size numerical indicating tube containing a common anode and ten metallic cathodes. The cathodes are formed in the shape of numerals (0-through 9). The tube is intended for use as a direct in-line readout device in areas of low or even dark ambient light.

ELECTRICAL DATA

ABSOLUTE RATINGS

Ionization Voltage 170 Vdc max.
Supply Voltage 170 Vdc min.
(Note 1)
Cathode Current 2.0 ma max.

TEST CONDITIONS (SEE FIGURE 1)

Supply Voltage (Ebb) . . . 170 Vdc (Note 3)
Series Resistor (Rp) 15 K

TEST LIMITS (NOTE 2)

Cathode Current (Ik)
(minimum) 0.7 ma
(maximum) 1.4 ma

MECHANICAL DATA

Outline See Figure 2
Pin Connection See Figure 3
Mounting Position See Figure 3
Weight 0.2 oz.

ENVIRONMENTAL DATA

Temperature -20°C to +55°C
(Note 2)
Altitude 70,000 ft. max.
Vibration (1) 10-50-10 cps
.08" excursion
(2) 50-500-50 cps
10 G's acceleration
T = 15 minutes (Note 4)
Shock (1) 250 G's 1 ± .5 millisec.
duration
(2) 50 G's 11 ± 1 milli-
sec. duration (Notes 5
and 6)

NOTES:

1. The minimum supply voltage should be 170 volts. However, the use of the highest available voltage with appropriate series resistor is recommended to maintain cathode current within specified limits. A supply voltage of 200 volts or more is recommended to assure proper operation at the temperature extremes.
2. At temperatures above and below 25°C changes in cathode current can be expected.
3. Under the specified test conditions, the tube will ionize in total darkness.
4. For this test, tubes are mounted in each of three planes, X-1, X-2, and Y-1, for one-third of the total excitation time. On each plane, the ten cathodes are energized sequentially at the test conditions.
5. Shock test may be performed on any shock machine capable of producing a half sine wave shock form of the specified duration and amplitude.
6. Each tube is subjected to a total of 20 shocks, 5 shocks in each of positions X-1, X-2, Y-1, and Y-2, in any sequence.

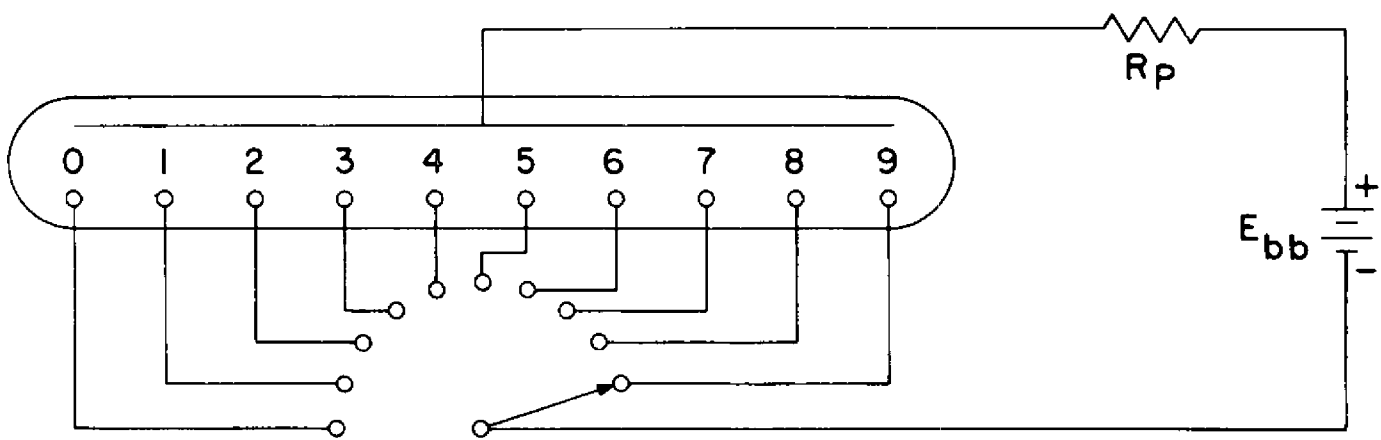


Fig. 1. TEST CIRCUIT

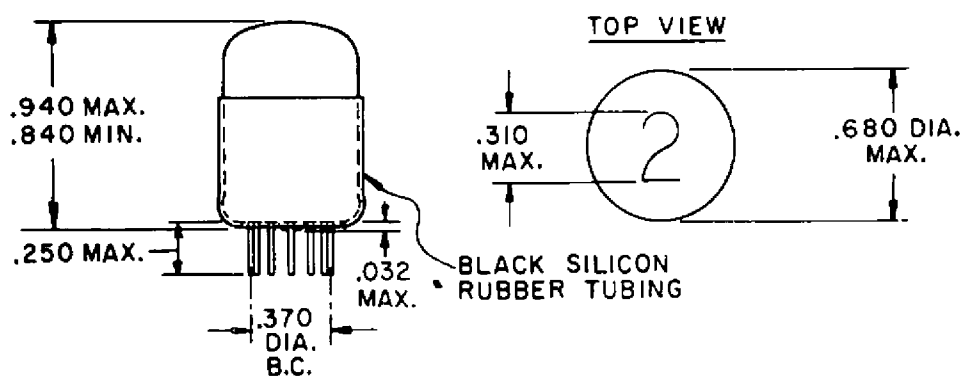
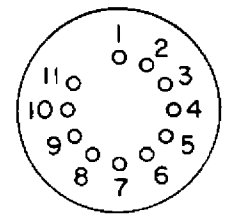


FIG. 2 OUTLINE DRAWING

PIN NO.	CHARACTER
1	NUMERAL 1
2	NUMERAL 2
3	NUMERAL 3
4	NUMERAL 4
5	NUMERAL 5
6	NUMERAL 6
7	NUMERAL 7
8	NUMERAL 8
9	NUMERAL 9
10	NUMERAL 0
11	ANODE



BOTTOM VIEW

FOR PROPER VIEWING, TUBE SHOULD BE MOUNTED WITH PINS 1 AND 7 VERTICALLY ALIGNED WITH PIN 7 AT THE TOP.

FIG. 3. PIN CONNECTIONS