

NUMERICAL INDICATOR

engineering data report



8037

(B 5031) ULTRA LONG LIFE NIXIE[®] TUBE

The 8037 (B 5031) is a gas-filled, cold cathode, 10-digit ("0" through "9"), numerical indicator tube, having a common anode with a suppressor screen to minimize darkening of the viewing dome. This tube features a cup design providing a non-glare background. It is intended for use as a direct, in-line, readout device.

MECHANICAL DATA (See Figure 1)

Overall Length 1.380" max.
Seated Height 1.124" max.
Bulb Diameter 1.080" max.
Envelope Connection See Figure 2
Height of Numerals 61" nom.
Numerical Design See Figure 3
Socket, 13-Pin
(HSK-112) See Figure 4
Weight 0.4 oz. max.
Mounting Position See Note 4
Cathode (s) Glow Discharge

ENVIRONMENTAL DATA

Temperature -65° to +85° C
Note 5
Altitude 70,000 ft.
Vibration 10 - 50 cps
0.08 in.
excursion
Shock 55 g 11 ± 1 msec

ELECTRICAL DATA

1. ABSOLUTE RATINGS:

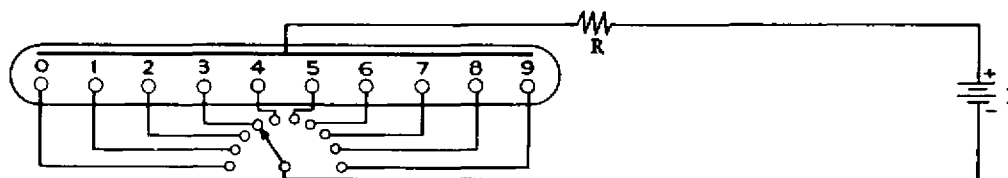
Ionization Voltage 170 Vdc Maximum
Supply Voltage 170 Vdc Minimum
Note 1
Cathode Current 3.0 ma Maximum
Note 2

2. TEST CONDITIONS:

(See Typical Circuit) Note 3

Anode Supply Voltage (E) . . . 170 Vdc
Anode Series Resistor (R) . . . 10 K ohms ± 1%
Cathode Current (I_k) 2.25 ma ± 33%

TYPICAL CIRCUIT



(SEE NOTE 3)

TYPICAL OPERATING CONDITIONS

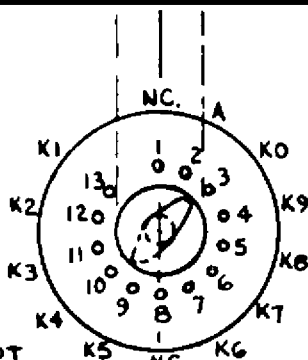
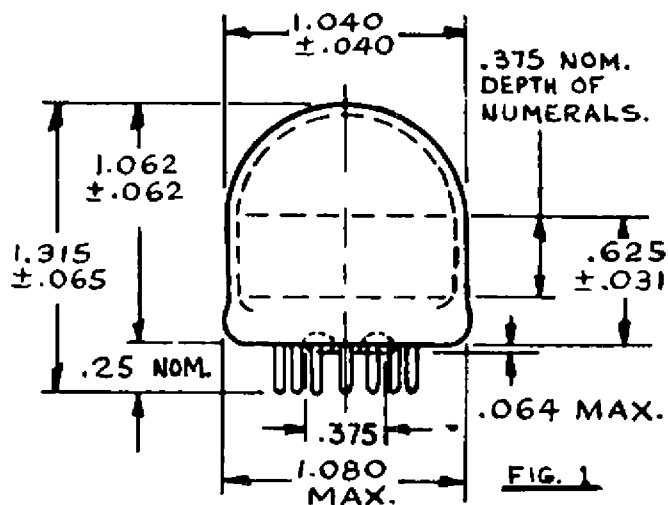
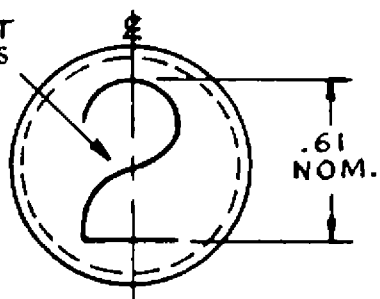
E	R
170 V	10 K ohm
250 V	47 K ohm
300 V	110 K ohm

NOTES

1. All 8037 tubes will ionize at 170 volts or less. The minimum supply voltage should be 170 Vdc; however, the use of the highest voltage available with the appropriate series resistor is recommended.
2. For pulsed or time sharing operation of the tube, the maximum cathode current rating corresponds to the peak pulse current. At currents exceeding this limit, the tube pins or cathode leads can glow.
3. With the tube operated in the test circuit and with the specified anode supply voltage and series resistance, the cathode current will be within the specified test limits. If an anode supply voltage greater than the minimum specified is available, it can be used with a correspondingly larger series resistance so that cathode current remains between the specified limits.
4. The centerline of the numbers to be displayed passes through pins 1 and 8 of the tube. The tube and socket should be oriented so that pins 1 and 8 are in a vertical line with pin 8 at the top. The numbers are viewed through the end of the tube opposite from the base.
5. At -65° C cathode current may increase by 60% or decrease by 50%.
At +85° C cathode current may decrease by 50%.
6. The selected character should glow over its entire surface when the test voltage is applied.

NUMERICAL INDICATOR
TYPE 8037 (B5031)

ANGULAR
DISPLACEMENT
OF NUMERALS
FROM
E: 3° MAX.



NOTE: DO NOT
USE PINS
1 & 8

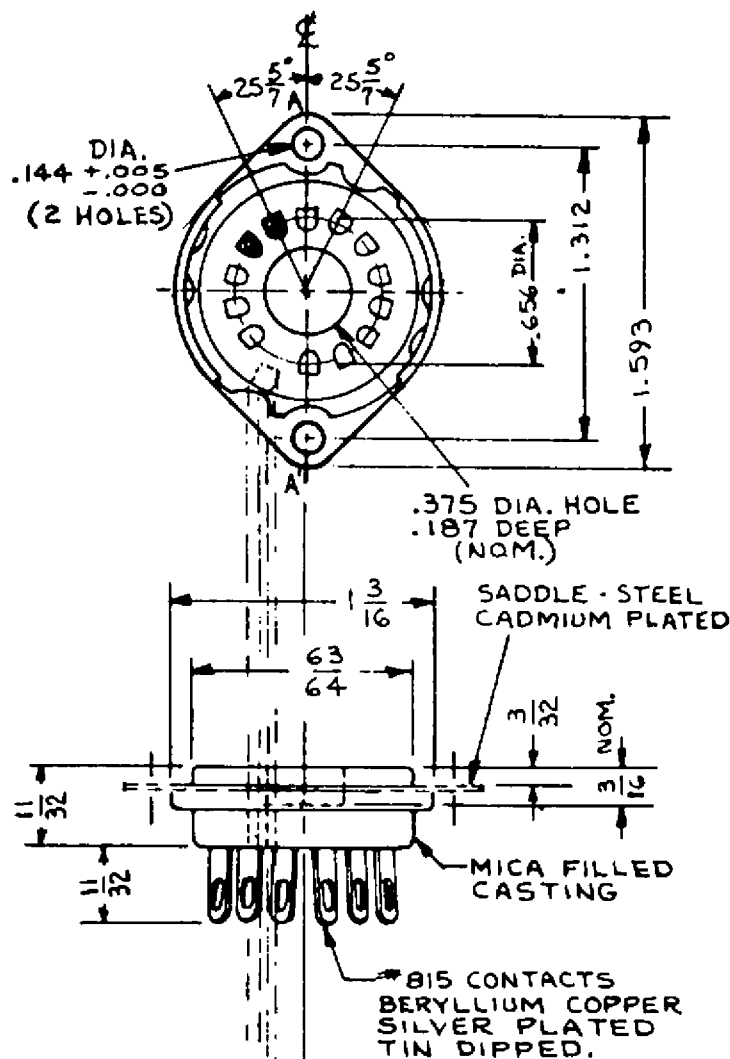
BOTTOM VIEW

FIG. 2

1234567890

(REF. WADC TR 54-160 APPENDIX PAGE 102)

FIG. 3



KEYWAY .093
X .093 X .165 DEEP

BOTTOM VIEW

BURROUGHS PART No. SK-112

FIG. 4

ANOTHER ELECTRONIC CONTRIBUTION BY
Burroughs Corporation
ELECTRONIC COMPONENTS DIVISION
PLAINFIELD, NEW JERSEY
Formerly Electronic Tube Division

AN APPLICATIONS ENGINEERING DEPARTMENT,
OFFERING ENGINEERING SERVICE AND
CONSULTATION, IS AVAILABLE TO ASSIST YOU IN
TAKING FULL ADVANTAGE OF THIS DEVICE.
WRITE FOR FURTHER INFORMATION.
Phone: PLainfield 7-5000.