DESCRIPTION

The 6167 is a ten-stage cold-cathode gas-discharge stepping tube designed for continuous counting or registration of pulses at rates up to 1000 pulses per second. Each stage consists of a stepping cathode (Bn) followed by an output cathode (Kn). Connections to each output cathode permit obtaining an output signal from each or any stage. A normal (zero) cathode is provided outside the counting ring and operates into the first stepping cathode (B1). The auxiliary anode can be operated to supply an additional output signal when current is carried from K10 cathode. The direction of forward transfer of discharge is in a clockwise direction and the position of the cathode glow may be observed through the top of the envelope.
RATINGS. Absolute Values

Cathode Current
  Maximum Peak ................................. 10 milliamperes
  Maximum Average ................................ 3 milliamperes
  Minimum Average .............................. 1 milliamperes
  Maximum Averaging Time ...................... 0.5 second
  Maximum Inverse Anode or Auxiliary Anode Current 0.0 milliamperes
  Ambient Temperature Limits .................. -55 to +60 centigrade

ELECTRICAL DATA

  Anode Voltage Drop ............................. --- 110 --- volts
  Anode Breakdown Voltage
    Output Cathodes and Normal Cathode ............. 180 225 300 volts
    Stepping Cathodes (B1-B10) .................. 150 190 250 volts
  Auxiliary Anode
    Voltage Drop to Cathode K10 .................. --- 112 --- volts
    Breakdown Voltage ........................... 260 300 --- volts
    Transfer Voltage 2 to Cathode K10 .......... See Curve
    Transfer Voltage 2, 3, to any Cathode
      except K10 ................................... 260 290 --- volts
  Cathode
    Forward Transfer Voltage .................... --- -10 -20 volts
    Transfer Voltage Between Adjacent Output
      Cathodes .................................. --- -45 --- volts
    Transfer Voltage Between Normal Cathode and
      Output Cathodes ........................... --- -30 --- volts

MECHANICAL DATA

  Mounting Position ............................. Any
  Bulb ................................................. T9
  Dimensions and pin connections shown in outline on Page 4

Note 1 All data are based on operation of the tube within average current ratings at the time of stepping or transfer of the discharge.

Note 2 Voltage, with respect to an operating cathode, at which conduction occurs from the auxiliary anode to cathode indicated.

Note 3 Measured with maximum K10 voltage of +50 volts with respect to the operating cathode.

Note 4 Voltage, with respect to an operating cathode, applied to the adjacent forward cathode to transfer the discharge to that cathode.

Note 5 Measured under static conditions. This is an absolute limit on output voltage but as frequency of operation is increased, the available output voltage is decreased because of residual ionization in the preceding cathodes.
IfgMAX.

-11?

.1AOt00zW

VIEW A-A

ANODE

K3

K4

K5

K6

B6-BIO

K7

Kio

K9

K8

BI-B5

AUXILIARY ANODE

PIN 1. OUTPUT CATHODE (K3)
PIN 2. OUTPUT CATHODE (K2)
PIN 3. OUTPUT CATHODE (K1)
PIN 4. OUTPUT CATHODE (K10)
PIN 5. AUXILIARY ANODE
PIN 6. INTERNAL CONNECTION
PIN 7. OUTPUT CATHODE (K9)
PIN 8. OUTPUT CATHODE (K8)
PIN 9. OUTPUT CATHODE (K7)
PIN 10. OUTPUT CATHODE (K6)
PIN 11. STEPPING CATHODES B6-BIO
PIN 12. OUTPUT CATHODE (K5)
PIN 13. OUTPUT CATHODE (K4)
PIN 14. STEPPING CATHODES BI-B5
PIN 15. NORMAL CATHODE
PIN 16. INTERNAL CONNECTION
PIN 19. ANODE

NOTE - BASE PIN NO 6 MARKED "INTERNAL CONNECTION" SHOULD NOT BE CONNECTED TO ANY PORTION OF AN EXTERNAL CIRCUIT. FAILURE TO OBSERVE THIS PRECAUTION MAY RESULT IN IMPROPER OPERATION OF THE TUBE.

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

1-F-52-1 PRINTED IN U.S.A.  T2716
Note 6 Measured with maximum Bl-B10 voltage of +20 volts with respect to the operating cathode.