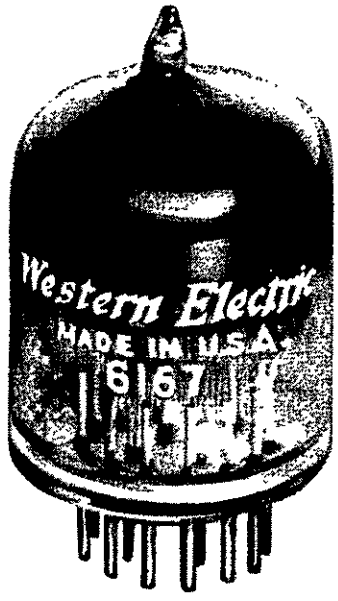
ELECTRON TUBE DATA SHEET

WESTERN ELECTRIC 6167 ELECTRON TUBE



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.

FILE: COLD CATHODE SECTION
ISSUE 1, 6-52

RATINGS, Absolute Values

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

ELECTRICAL DATA[1]

	Min.	Bogey	Max.	
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[4]	---	-10	-20	volts
Transfer Voltage Between Adjacent Output Cathodes[5, 6]	-45	---	---	volts
Transfer Voltage Between Normal Cathode and Output Cathodes[6]	-30	---	---	volts

MECHANICAL DATA

Mounting Position - Any

Bulb - T9

Dimensions and pin connections shown in outline on Page 4

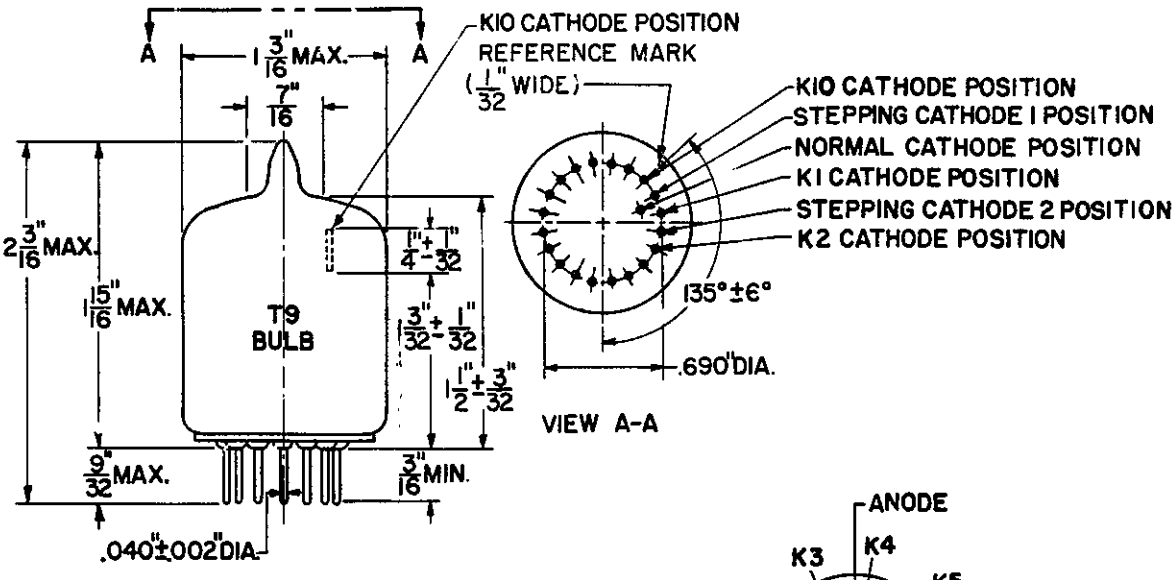
Note 1 All data are based on operation of the tube within average current ratings at the time of stepping or transfer of the discharge.

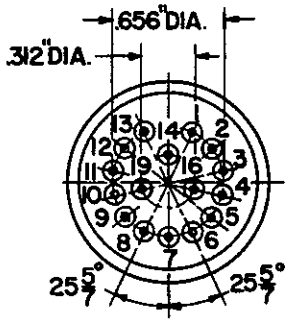
Note 2 Voltage, with respect to an operating cathode, at which conduction occurs from the auxiliary anode to cathode indicated.

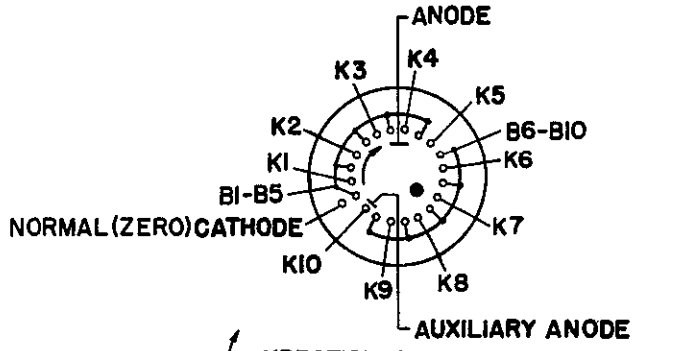
Note 3 Measured with maximum K10 voltage of +50 volts with respect to the operating cathode.

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.







SCHEMATIC DIAGRAM

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-B10
PIN 12. OUTPUT CATHODE (K5)
PIN 13. OUTPUT CATHODE (K4)
PIN 14. STEPPING CATHODES B1-B5
PIN 16. NORMAL CATHODE
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.

Note 6 Measured with maximum B1-B10 voltage of +20 volts with respect to the operating cathode.