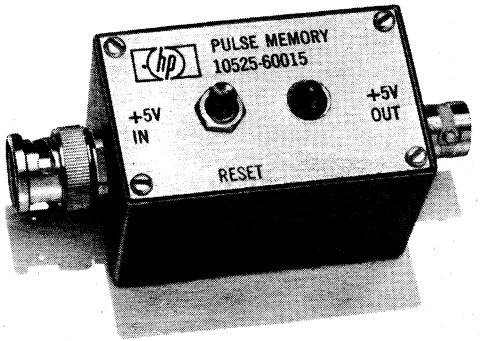
OPERATING AND SERVICE MANUAL

PULSE MEMORY

10525-60015



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The Hewlett-Packard Company certifies that this instrument was thoroughly tested and inspected and found to meet its published specifications when it was shipped from the factory. The Hewlett-Packard Company further certifies that its calibration measurements are traceable to the U.S. National Bureau of Standards to the extent allowed by the Bureau's calibration facility.

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Service contracts or customer assistance agreements are available for Hewlett-Packard products that require maintenance and repair on-site.

For any assistance, contact your nearest Hewlett-Packard Sales and Service Office.

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PULSE MEMORY

SERIES 1308A

Printed: FEB 1973

Manual Part No. 10525-90014

Printed in U.S.A.

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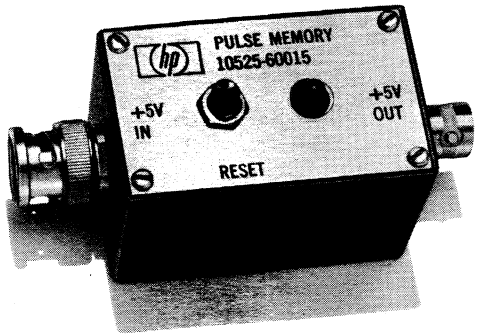
Figure 1. Pulse Memory



INTRODUCTION

The pulse memory will detect and store any valid change in logic state of a circuit being tested with the 10525T Logic Probe. It is intended primarily for monitoring logic signals which change infrequently without requiring the user to continuously monitor the probe indication.

The pulse memory consists of a metal case with two BNC connectors, an LED indicator, and a RESET pushbutton. The pulse memory is connected between the logic probe's power connector and the +5 volt source. The logic probe is then connected or touched to the circuit under test, and the pulse memory is manually reset. Any change in logic state (pulse or level) will set the pulse memory and light the LED. The LED will remain lit until the pulse memory is manually reset. The pulse memory does not affect operation of the logic probe in any way.

CAUTION

Damage may result from reversal of power supply input polarity.

SPECIFICATIONS

The pulse memory is guaranteed to detect changes between valid TTL/DTL logic levels sensed by the logic probe. In addition, it will typically sense the change from a bad level to a valid logic state. Pulse memory maximum current drain is 30 mA. Input voltage is 5V ±10%.

SERIES CODE

A four-digit "series" number is stamped on the circuit board. This number should match the series number on the title page of this manual. If the board series number is different than the manual series number, a MANUAL CHANGES sheet is supplied with the manual. The CHANGES sheet should have a series number matching the board; but if it does not, ask your Hewlett-Packard representative for a change sheet with the matching series number.

UNPACKING

If the shipping package is damaged, ask that the carrier's agent be present when package is opened. Inspect the Pulse Memory for obvious physical damage (dents, scratches, etc.). If the Pulse Memory is damaged or fails to meet specifications, notify carrier and nearest Hewlett-Packard Sales and Service office immediately. (Sales and Service offices are listed at the back of this manual.) Retain shipping package and packaging material for carrier's inspection. The Sales and Service office will arrange for replacement of your Pulse Memory without waiting for claim against carrier to be settled.

USE

Connect the logic probe to the +5V OUT BNC of the pulse memory (see Figure 2). Connect a source of +5 volts to the +5V IN BNC (center conductor positive). The pulse memory is not protected against power

supply polarity reversal, so damage may result from incorrect power connections. Connect the logic probe input to the circuit under test, and then reset the pulse memory. Any change in logic state will latch the pulse memory into its set state and light the LED indicator. The pulse memory is ideal for monitoring that elusive single pulse while the user's attention is elsewhere in the circuit.

HOW THE PULSE MEMORY WORKS

When the logic state at the tip of the logic probe changes, the probe power current drain changes, primarily due to the change in lamp current (see schematic diagram). The pulse memory detects this current change with a toroid current transformer. The output of the toroid secondary is used to turn on Q1 or Q2 which, in turn, sets the bistable flip-flop formed by two cross-coupled TTL NAND gates. The flip-flop is reset by grounding the junction of R2 and the input to gate D. The LED indicator lights when the flip-flop is in its set state and is off when the flip-flop is reset.

*Figure 2. **Pulse Memory Connections***

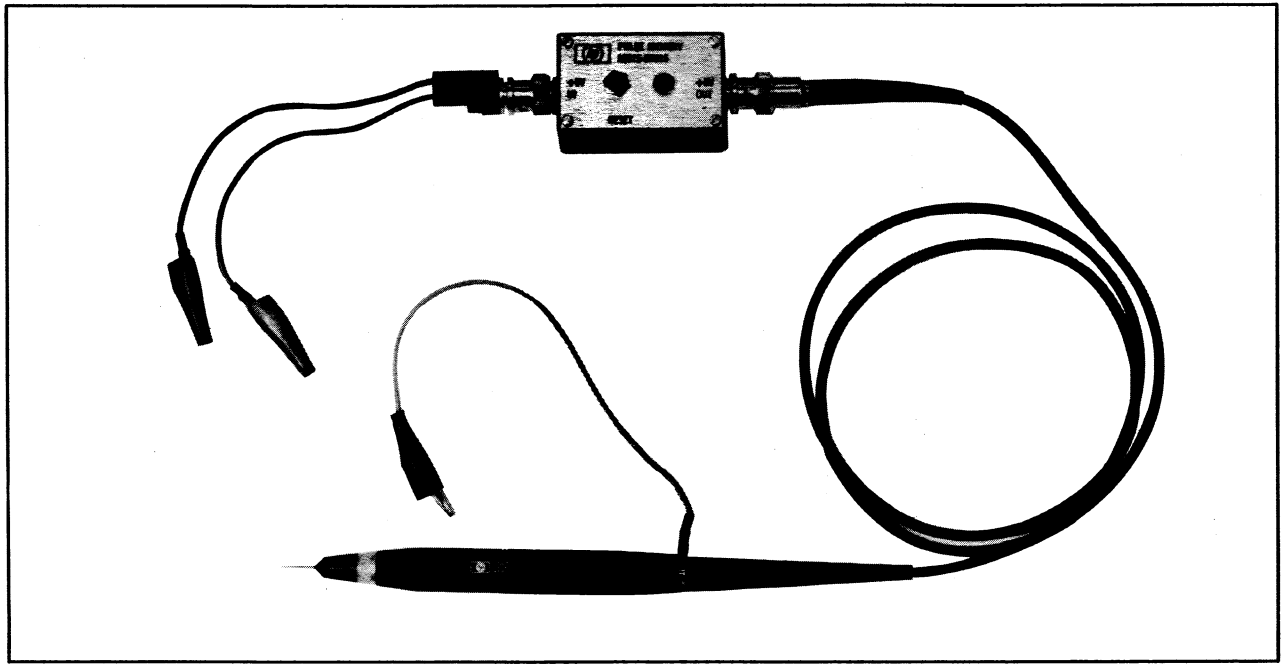


Table 1. Operation Test

Condition	10525T Indication	Pulse Memory Indication
1. Probe tip open circuited. Reset Memory.	DIM	OFF
2. Touch Probe tip to ground and hold it there.	OFF	ON
3. Reset Pulse Memory.	OFF	OFF
4. Lift Probe tip off of ground.	DIM	ON OR OFF
5. Touch Probe tip to +5V and leave it there.	BRIGHT	ON
6. Reset Pulse Memory	BRIGHT	OFF
7. Touch Probe tip to ground and leave it there.	OFF	ON
8. Reset Pulse Memory	OFF	OFF
9. Touch Probe tip to +5V.	BRIGHT	ON

Table 2. Parts List

Reference Designation	HP Part No.	Description
A1	10525-60014	Pulse Memory Board Assembly (Loaded on 10525-20014 Blank Board.)
A1CR1	1901-0040	Diode: Silicon
A1CR2	1901-0040	Diode: Silicon
A1Q1	1854-0071	Transistor: Silicon
A1Q2	1854-0071	Transistor: Silicon
A1R1	0683-4725	Resistor: Fixed, Comp 4700 ohms, 5%, 1/4W
A1R2	0683-4725	Resistor: Fixed, Comp 4700 ohms, 5%, 1/4W
A1R3	0683-4715	Resistor: Fixed, Comp 470 ohms, 5%, 1/4W
A1T1	10525-80002	Transformer: Toroid
A1U1	1820-0054	Integrated Circuit: TTL (SN7400)

Table 3. Chassis Parts

Reference Designation	HP Part No.	Description
CR1	1990-0324	Diode LED
J1	1250-0045	BNC-Male
J2	1250-0083	Conn RF BNC
S1	3101-0052	Switch P-Button
	10525-00001	Cover-Pulse Memory
	10525-20015	Box-Pulse Memory
	1400-0808	Mtg. Clip

Figure 3. Pulse Memory Component Locator

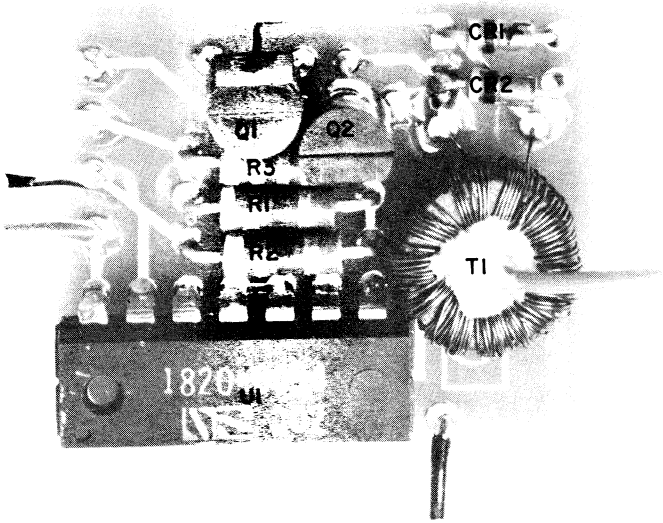
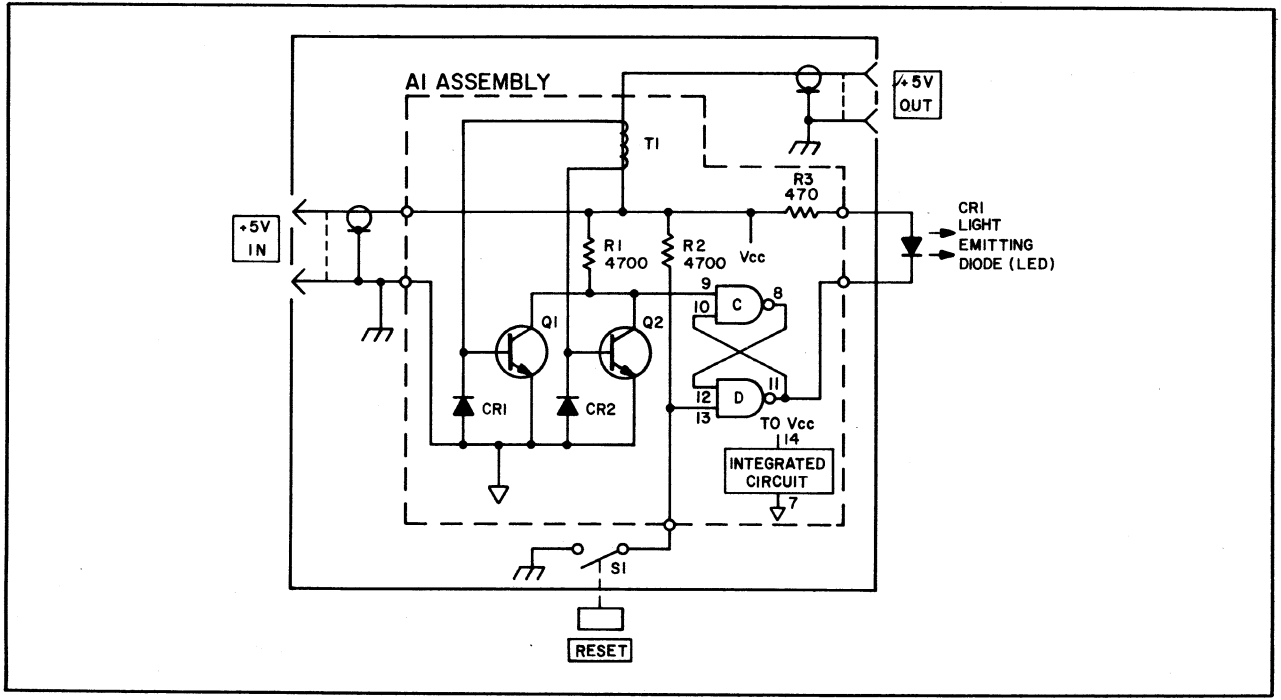


Figure 4. Pulse Memory Schematic Diagram



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