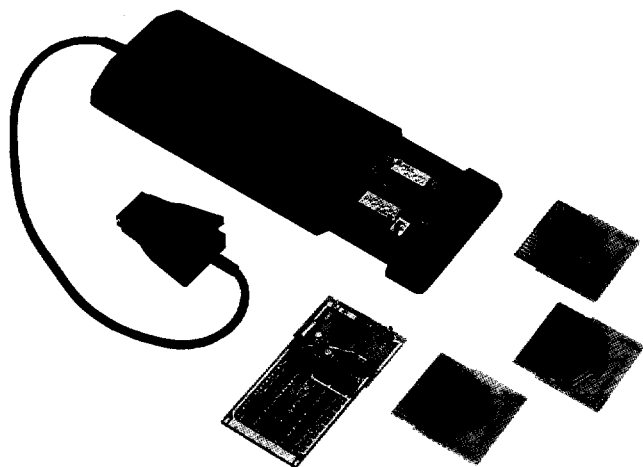


# DIGITAL CIRCUIT TESTERS

## Logic Comparator and Troubleshooting Kits

HP 10529A, 5011T, 5021A, 5022A, 5023A, 5024A

- Dynamic and static testing
- Multi-pin testing



HP 10529A

### HP 10529A Logic Comparator

The HP 10529A logic comparator clips onto powered TTL or DTL ICs and detects functional failures. In-circuit ICs are compared with a known-good reference IC inserted in the comparator. Pins are identified as output or input by setting 16 miniature switches. Any logic state difference between the test and reference ICs is indicated by a lighted LED. Intermittent errors as short as 300 ns are detected using the socket board and indicated visually. A test board is supplied to confirm correct operation of all comparator circuitry, test leads, and display elements.

### HP 10529A Specifications

**Input Threshold:** 1.4 V nominal (1.8 V nominal with socket board), TTL or DTL compatible

**Test IC Loading:** Outputs driving Test IC inputs are loaded by 5 low-power TTL loads plus input of Reference IC. Test IC outputs are loaded by 2 low-power TTL loads.

**Input Protection:** Voltages < -1 V or > 7 V must be current limited to 10 mA

**Supply Voltage:** 5 V  $\pm$  5%, at 300 mA

**Supply Protection:** Supply voltage must be limited to 7 V.

**Maximum Current Consumption:** 300 mA

#### Sensitivity

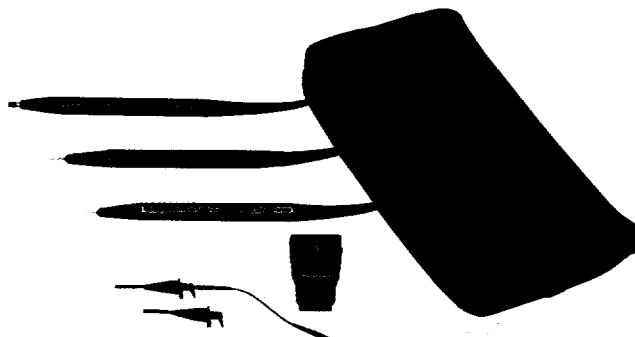
**Error sensitivity:** 200 ns with reference board or 300 ns with socket board. Errors greater than this are detected and stretched to at least 0.1 second

**Delayed variation immunity:** 50 ns. Errors shorter than this value are considered spurious and ignored

**Frequency Range:** Maximum operational frequency varies with duty cycle. An error existing for a full clock cycle will be detected if the cycle rate is less than 3 MHz.

**Accessories Included:** 1 test board; 10 blank reference boards; 1 programmable socket board; 1 carrying case

- Stimulus-response capability
- In-circuit fault finding



HP 5022A

### Logic Troubleshooting Kits

Each of HP's IC troubleshooters provide their own unique and important troubleshooting function. Together they become invaluable stimulus-response testing partners that help pinpoint faults and ensure fast non-destructive repair of digital circuits.

HP has packaged the IC troubleshooters into kits which offer ordering convenience and cost savings. Applications information is available, such as AN 163-2, *New Techniques of Digital Troubleshooting*, to help users derive maximum benefit from these instruments.

Fault	Stimulus	Response	Test method
Shorted Node <sup>1</sup>	Pulser <sup>2</sup>	Current Tracer	• Pulse shorted node • Follow current pulses to short
Stuck Data Bus	Pulser <sup>2</sup>	Current Tracer	• Pulse bus line(s) • Trace current to device holding the bus in a stuck condition
Internally Open IC	Pulser <sup>2</sup>	Probe	• Pulse device input(s) • Probe output for response

<sup>1</sup>A node is an interconnection between two or more IC's.

<sup>2</sup>Use the Pulser to provide stimulus or use normal circuit signals, whichever is most convenient.

### Ordering Information

	Price
HP 545A Logic Probe	\$360
HP 546A Logic Pulser	\$450
HP 547A Digital Current Tracer	\$880
<b>Accessories (HP 545A, 546A, 547A)</b>	
HP 00545-60104 Tip Kit for HP 546A, 545A	\$80
HP 10526-60002 Multi-Pin Stimulus Kit	\$100
HP 1250-1948 Adapter, Coax Str.	\$25
HP 548A Logic Clip	\$440
HP 10529A Logic Comparator	\$1,600

### IC Troubleshooter Kits Selection and Ordering

HP Model	545A TTL/CMOS Probe	546A TTL/CMOS Pulser	547A TTL/CMOS Current Tracer	548A TTL/CMOS Clip	10529A TTL Comparator	Price
5011T Kit	X	X		X	X	\$2,925
5021A Kit	X	X		X		\$1,215
5022A Kit	X	X	X	X		\$2,070
5023A Kit	X	X	X	X	X	\$3,780
5024A Kit	X	X	X			\$1,640

