MODEL 2000C SPECIFICATIONS*

I.C. CAPACITY:
8,14,16,18,20 pin dual-in-line packages, digital CMOS, +5VDC to +15VDC.

TEST RATE:
Continuous, 8 MHz. maximum.

INPUT LOGIC LEVELS:
CMOS logic levels, 0VDC to +15VDC (no less than −.3VDC or more than +15.5VDC)

SUPPLY VOLTAGE:
+5VDC TO +15VDC

SUPPLY CURRENT:
10mA at +5VDC (60mA maximum with all 20 LEDs lit)
30mA at +15VDC (200mA maximum with all 20 LEDs lit)

SUPPLY PROTECTION:
Reverse polarity protected; over voltage protected to +18VDC at 500 mA maximum.

ERROR SENSITIVITY:*
Error detection sensitivity increases as error frequency increases:

Detectable error	Error rate frequency
300 nanoseconds	Single error
200 nanoseconds	1.0 MHz.
150 nanoseconds	1.5 MHz.
100 nanoseconds	3.0 MHz.
50 nanoseconds	6.0 MHz.

MODEL 2074A SPECIFICATIONS*

I.C. CAPACITY:
8,14,16,18,20 pin dual-in-line packages, digital TTL, +5VDC.

TEST RATE:
Continuous, 10 MHz. maximum.

INPUT LOGIC LEVELS:
TTL logic levels, 0VDC to +5VDC

SUPPLY VOLTAGE:
+5VDC.

SUPPLY CURRENT:
100mA (Maximum of 400mA with all 20 LEDs lit).

SUPPLY PROTECTION:
Reverse polarity protected; over voltage protected to +7VDC at 700 mA maximum or +12VDC at 150 mA maximum.

ERROR SENSITIVITY:**
Error detection sensitivity increases as error frequency increases:

Detectable error	Error rate frequency
300 nanoseconds	Single error
200 nanoseconds	1.0 MHz.
150 nanoseconds	1.5 MHz.
100 nanoseconds	3.0 MHz.
50 nanoseconds	6.0 MHz.

**Errors smaller than those listed are considered to be within reasonable tolerance at the corresponding frequency and are ignored.

*Subject to change without notice.

BUGTRAP
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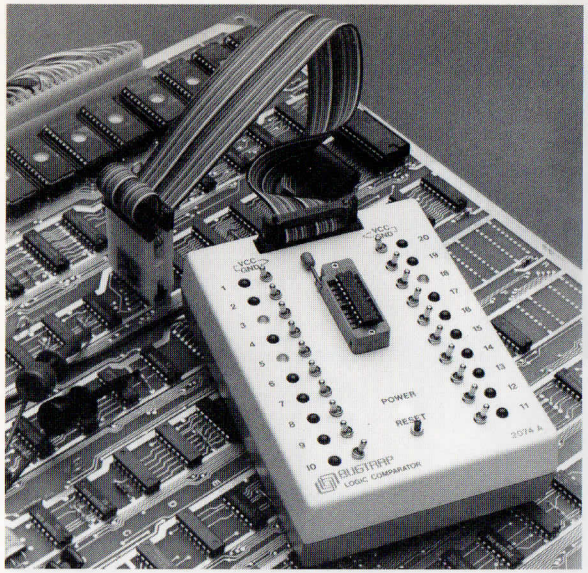
MODEL 2000C CMOS LOGIC COMPARATOR
MODEL 2074A TTL LOGIC COMPARATOR



THE FIRST AND ONLY "FULL SPECTRUM" LOGIC COMPARATORS

The Bugtrap Logic Comparators signify a breakthrough in digital testing. They are the first and only handheld "full spectrum" logic comparators ever developed. Due to a new comparison technique (patent pending) developed by Bugtrap Instrumentation, I.C.s previously considered untestable with conventional logic comparators are now handled with incredible ease.

The Model 2074A will accurately test the full line of 14, 16, 18 and 20 pin digital TTL I.C.s, **including** tristate, bidirectional, and open collector I.C.s. Even PALs and bipolar ROMs are easily tested. The Model 2000C easily tests CMOS I.C.s operating between +5VDC and +15VDC, also up to 20 pins and including tristate and bidirectional I.C.s. These two models represent a tremendous increase in testing capability over conventional logic comparators.

EASY AND FAST

Bugtrap Instrumentation designed the 2074A and 2000C Logic Comparators to be used by non-experienced personnel as well as highly trained technicians. Unlike using an oscilloscope, testing I.C.s requires no interpretation of digital activity and errors small enough to be missed on a scope will be detected. Unlike ordinary logic comparators, there is no need to use switches, program cards, or custom sockets to differentiate inputs from outputs on the I.C. being tested. The only switch settings required are for directly tying VCC and Ground from the I.C. being tested to the "known good" reference I.C. This can usually be done without even referring to the reference manual.

TIRED OF SHOTGUNNING?

If you have ever taken the time to replace "suspect" I.C.s only to find that they were all good to begin with, then you will greatly appreciate the time savings when using the Bugtrap Logic Comparators. Verifying the proper operation of I.C.s in circuit is easy and accurate while substantially reducing the possibility of board damage due to excess soldering and desoldering.

HEADACHES WITH INTERMITTENT FAILURES?

Intermittent I.C. failures can truly be a headache for the repair technician. The memory feature of the two models allows the technician to clip the instrument to the suspect I.C. and leave it unattended, free to do other things. If the I.C. malfunctions, an error LED will light and latch to expose exactly which node of the I.C. didn't perform correctly. Try that with an oscilloscope!

PRINCIPLE OF OPERATION

Unlike functional testers costing many times more, the 2074A and the 2000C test I.C.s dynamically, in circuit at system speed under actual operating conditions, and are not restricted by the limitations of software libraries. By placing a "known good" reference I.C. in the zero-insertion-force socket of the comparator and attaching the comparator's test clip to the I.C. under test and the known good I.C. One or more LEDs will light and latch to indicate the corresponding faulty node or nodes of the defective I.C. This latching, or "memory", is invaluable for finding those intermittent problems that may span several minutes or even hours between failures.

COST EFFECTIVE THROUGH TIME SAVINGS ALONE!

The revolutionary design of the Bugtrap Logic Comparators breaks all barriers in logic comparison. Not only has the accuracy, stability, and capability of ordinary logic comparators been vastly improved upon, but their simplicity of operation is almost unbelievable.

Just imagine the enormous time savings when you can absolutely verify the proper operation of an I.C. in seconds, in circuit under actual operating conditions. Tristate I.C.s used to be particularly troublesome to test since their outputs are generally on a common bus with the outputs of several other I.C.s, really complicating the troubleshooting process. The 2074A and the 2000C solve this problem by "sorting out" the irrelevant activity from I.C.s other than the one under test. This even extends to bidirectional I.C.s where an output can instantly become an input and vice-versa. The Bugtrap Logic Comparators "know" when they are looking at relevant output activity. The time required to perform this type of troubleshooting with an oscilloscope would be significantly greater while not affording the certainty of test results that the 2074A and the 2000C provide.

Both Bugtrap Logic Comparator models will prove to be the most cost effective and simple to operate test instruments that you will ever own. Each comes complete and ready to use with comparator, 20 pin test clip and cable with I.D.C. connector, 16 pin test clip (for more tightly packed board areas) and cable with I.D.C. connector, and reference manual. All Bugtrap test instruments come with a one year, parts and labor warranty.