

## **CYPRESS OFFERS Ultra37000™ CPLDs IN FINE-PITCH BGA PACKAGES**

### **New Packages Save Board Space, Increase Reliability, Ease Manufacturing**

SAN JOSE, Calif., April 5, 1999 — Cypress Semiconductor Corporation today announced that its Ultra37000™ family of Complex Programmable Logic Devices (CPLDs) is being offered in Fine-Pitch Ball Grid Array (FBGA) packages.

The new FBGA packages allow customers to dramatically reduce the amount of board space dedicated to the CPLD. For example, the 48-ball FBGA is about 40% smaller than a 44-pin TQFP. Additionally, customers can add I/O without adding board space. For example, the 256-ball, 192-I/O FBGA package is the same size as the 160-pin, 128-I/O package. FBGA packages also offer increased reliability and easier installation than QFPs packages, which are very susceptible to bent leads, especially in high pin-counts.

“The Ultra37000 family of CPLDs is on the cutting edge of silicon technology; the packages in which they are housed are now just as advanced” said Christopher Norris, vice president of Cypress’s Programmable Logic Division. “The FBGA package offers multiple advantages, allowing our CPLDs to operate in space-constrained applications, such as PC add-on cards and mobile applications.”

### **Optimum Lead-Pitch**

To maximize ease of use, Cypress is initially offering two different lead pitches for the Ultra37000 family. The 48-ball package has a lead pitch of 0.8 mm. The 100-ball, 256-ball, and 400-ball packages all have 1.0 mm lead pitches. This configuration offers the optimum flexibility – the smallest package outline that does not inhibit trace routing on the customer’s PCB. As PCB layout technology advances, Cypress will migrate toward 0.8 mm and 0.5 mm pitches on all devices.

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## **SuperSet Pinout**

Cypress is providing a SuperSet pinout system for Ultra37000 FBGA devices. With this system, smaller ball-count devices are pinout subsets of larger devices. Users can design their board for the highest pin-count device, then switch to a smaller pin-count device with no board changes. This allows them to take advantage of lower cost devices without slowing time to market by redesigning the circuit board.

## **Cypress Ultra37000 CPLDs**

Cypress's Ultra37000 CPLD family offers a simple, fixed timing model that guarantees pin-to-pin propagation delays as fast as 5 ns. Available in both 5-V and 3.3-V versions, the family also offers Cypress's In-System Reprogrammability (ISR™), which assures that logic changes won't affect pinouts or critical timing.

## **Price and Availability**

The 256-macrocell CY37256V in a 256-ball configuration is expected to be available in May of this year. The 48-ball CY37064V, the 100-ball CY37128V, and the 400-ball CY37512V are scheduled for availability in June. Pricing for the Ultra37000 devices in FBGAs will begin at \$3.00 in high volume.

Cypress Semiconductor Corporation, headquartered in San Jose, California, provides a broad range of integrated circuits for leading computer, networking, and telecommunications companies worldwide. Cypress's products include static RAM and specialty memories, programmable logic devices (PLDs), data communications products, timing devices, and USB microcontrollers. Its shares are listed on the New York Stock Exchange under the symbol CY, and its web site is <http://www.cypress.com>.

"Safe Harbor" Statement under the Private Securities Litigation Reform Act of 1995: Statements herein that are not historical facts are "forward-looking statements" involving risks and uncertainties. Please refer to Cypress's Securities and Exchange Commission filings for a discussion of such risks.

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