Cover
Although VLSI packages are often quite attractive, their selection is not merely a matter of cosmetics. VLSI designers must go beyond simple pin-count and package “footprint” considerations, and look into power dissipation, parasitics arising from die-to-package wiring, and the ease of mounting VLSI devices on printed-circuit boards. Cover photo by Jay Carlson, San Francisco, CA. LSI/VLSI packages provided by Signetics Corporation, Sunnyvale, CA.

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The authors explain how and why they designed a single macro-cell-based chip that can be "configured" by metal-mask changes into several different high-performance microprocessors. Although this may sound like a standard gate-array approach, it's really quite different.

22 VHSIC: The Focus Shifts from Microns to Systems
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28 Five Pitfalls to Avoid When Obtaining Optical Photomasks
James N. Wiley and Duffy Zakaib, Master Images, Inc.

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The authors explain the intricacies of doing business with electron-beam-mask suppliers. The article includes a table listing all U.S. merchant-market e-beam mask makers and their capabilities.

44 Practical Considerations in VLSI Packaging
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Dual-inline packages (DIPs) clearly are unsuitable for LSI/VLSI devices that require more than 64 pins; but no standard package has yet emerged for high-pin-count ICs. The authors describe the design/performance ramifications of the most popular VLSI packaging alternatives.