# Actel
## POWER MATTERS

# Industry's Lowest Power FPGAs

Whether you're designing today or for the future, power matters. From chip-level to system-level designs, power is the #1 design criterion. Actel's low-power, flash-based FPGAs are optimized to deliver the power and cost that you need to get in the market quickly—and stay in the market for long-term profitability. Actel's flash technology delivers the lowest power and offers a wide range of package size options. You also get the most secure, firm-error immune, live-at-power-up, reprogrammable devices in the industry. For high-volume, low-power, low-cost applications, the Actel IGLOO® and ProASIC®3 series of FPGAs are the perfect choice.

## Actel Low-Power Flash FPGAs

| | IGLOO Series — Industry's Lowest Power FPGAs | | | ProASIC3 Series — Low Power FPGAs | | |
|---|---|---|---|---|---|---|
| | **IGLOO/e** | **IGLOO nano** New! | **IGLOO PLUS** | **ProASIC3/E** | **ProASIC3 nano** New! | **ProASIC3L** |
| **Overview** | The ultra-low-power, programmable solution | The industry's lowest power, smallest size solution | The low-power FPGA with enhanced I/O capabilities | The low-power, low-cost, FPGA solution | Lowest cost solution with enhanced I/O capabilities | The FPGA that balances low power, performance, and low cost |
| **Applications** | Ideal for battery-operated or power-conscious applications, when power and size are key requirements. Provides improved battery runtime or lower operational temperatures. | Designed for consumer, industrial, medical, and other high-volume, low-power applications. | Addresses the need for compact logic density with high I/O count and capability. Ideal for bridging, I/O expansion, level shifting, and memory interfacing applications optimized for low power. | Perfect for designs that require low cost, low power, and performance in small, medium, and large logic densities. | Specifically designed for consumer, industrial, medical, and other high-volume, cost-sensitive applications. Cost-effective replacement for ASICs or ASSPs, delivering faster time-to-market, security, and I/O expansion. | Use in applications that require a balance of performance and low static and dynamic power. Targets applications requiring secure, high-density programmable logic. |
| **Low-Power Modes** | Flash*Freeze technology enables 5 µW static power consumption while maintaining FPGA content. | Flash*Freeze technology enables industry-leading nanoPower consumption while maintaining FPGA content and holding I/O states. | Flash*Freeze mode preserves FPGA content and holds I/O states while the device consumes lowest power. | Supports Sleep mode for power reduction when device is not used. | Supports Sleep mode for power reduction when device is not used. | Flash*Freeze technology enables quick switching to and from low-power mode to reduce dynamic power when FPGA operation is not required. |
| **Packaging** | Small-footprint packages for portable and area-constrained applications, as small as 4x4 mm. | Largest selection of small-footprint packages, as small as 3x3 mm. | High I/O count, small footprint, and low-cost packaging. | Selected small-footprint and low-cost packages, as well as high pin count packages. | Broad selection of small-footprint packages, routable with 2-layer boards in most cases. | Low-cost packages with high pin count. |

## Actel's Low-Power FPGAs Feature Summary

| | Logic Densities | I/Os | System Performance | Core Voltages | I/O Voltages | Typical Static Power | Power Modes | Packages | Number of ARM® Cortex™-M1 Devices | RAM | User Nonvolatile Memory (FlashROM) | PLL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **IGLOO/e** | 15 k–3 M | 49–620 | 200–250 MHz | 1.2 V–1.5 V | 1.2 V– 3.3 V | 5 µW | Flash*Freeze | µCS, CS FBGA, QFN QFP | 5 | Up to 504 kb | 1 kb | Up to 6 |
| **IGLOO nano** New! | 10 k–250 k | 23–71 | 200–250 MHz | 1.2 V–1.5 V | 1.2 V– 3.3 V | 2 µW | Flash*Freeze | µCS, CS QFN, QFP | — | Up to 36 kb | 1 kb | Up to 1 |
| **IGLOO PLUS** | 30 k–125 k | 101–212 | 200–250 MHz | 1.2 V–1.5 V | 1.2 V– 3.3 V | 5 µW | Flash*Freeze | CS, QFP | — | Up to 36 kb | 1 kb | Up to 1 |
| **ProASIC3/E** | 15 k–3 M | 49–620 | 350 MHz | 1.5 V | 1.5 V– 3.3 V | 3 mW | Sleep | FBGA, QFN QFP | 6 | Up to 504 kb | 1 kb | Up to 6 |
| **ProASIC3 nano** New! | 10 k–250 k | 34–71 | 350 MHz | 1.5 V | 1.5 V– 3.3 V | 1.5 mW | Sleep | QFN, QFP | — | Up to 36 kb | 1 kb | Up to 1 |
| **ProASIC3L** | 250 k–3 M | 68–620 | 250– 350 MHz | 1.2 V–1.5 V | 1.2 V– 3.3 V | 400 µW | Flash*Freeze | FBGA, QFP | 3 | Up to 504 kb | 1 kb | Up to 6 |

**For more information, please visit the Actel website at www.actel.com or contact your local sales representative.**