FOUNDRY LEADERSHIP FOR THE SoC GENERATION

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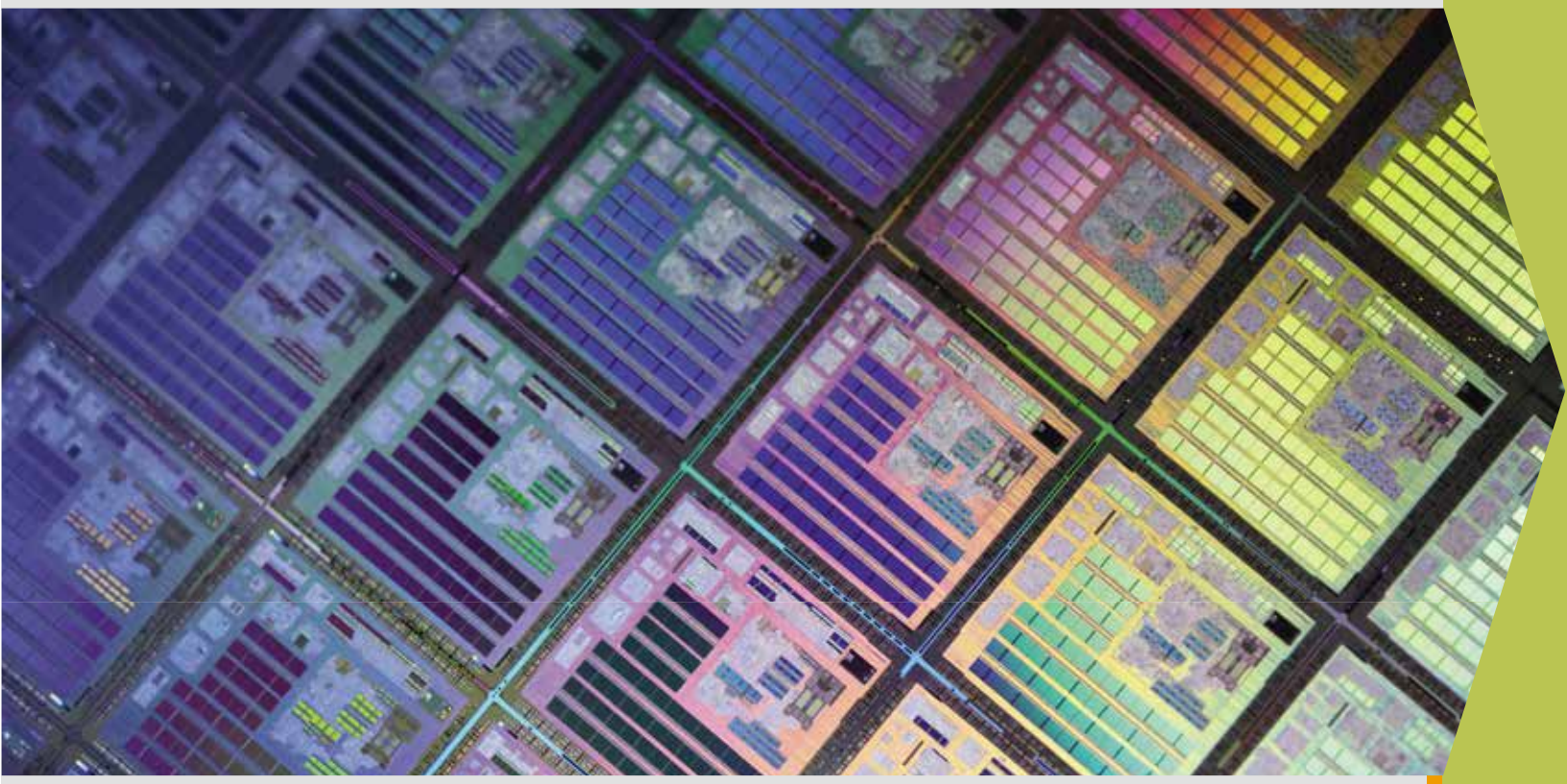
28

28 Nanometer



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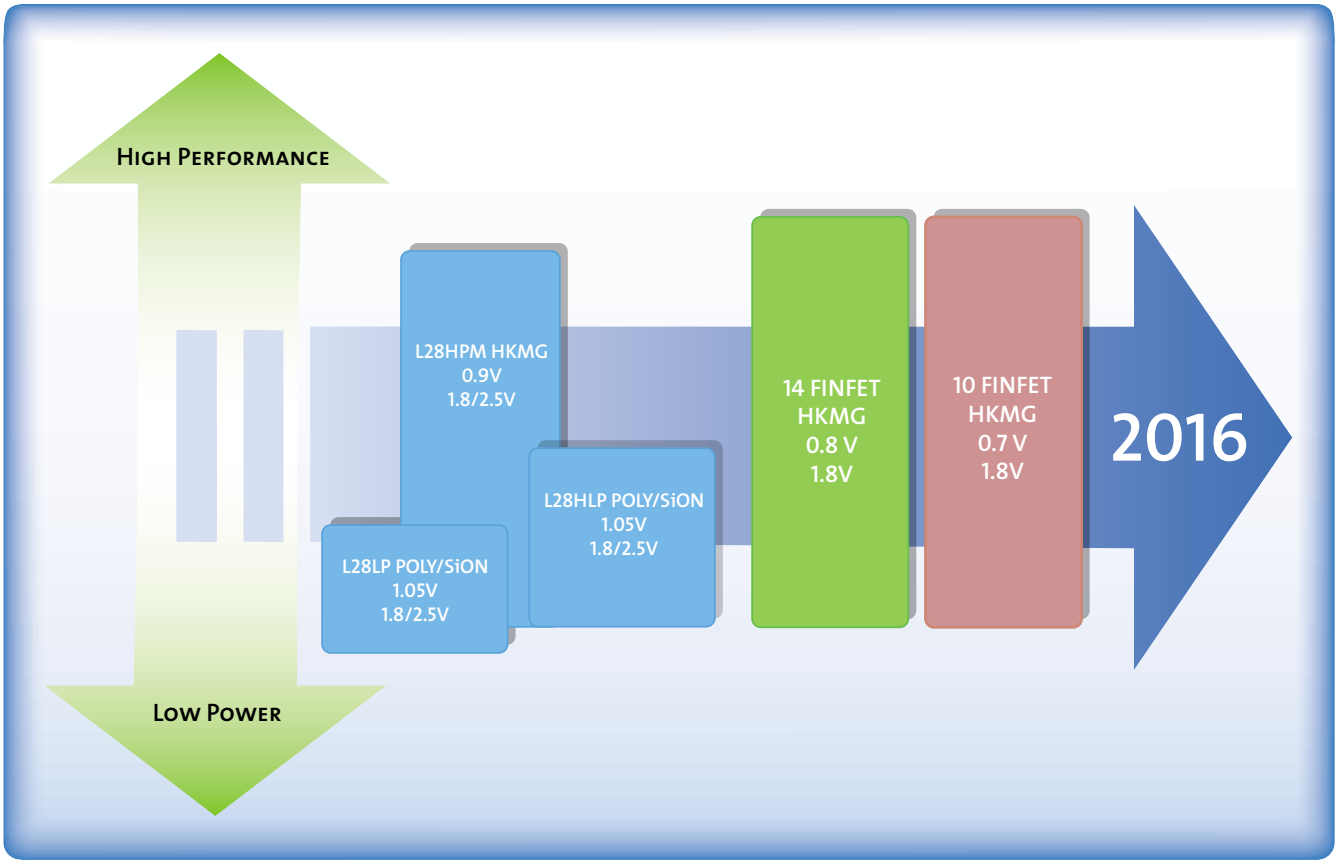
28 Nanometer - Customer-Driven Foundry Solutions

UMC's 28nm process technology is developed for applications that require the highest performance with the lowest power leakage. In October 2008, we were the first foundry to deliver fully functional 28nm SRAM chips and have proven in silicon the high-K/metal gate technology used for this technology node. Our 28nm platform is based on industry mainstream technology that includes conventional poly/oxynitride process and gate last, high-K metal gate, which provides superior performance over gate first high-k offerings. Currently, our 28nm is in volume production for several customer products.

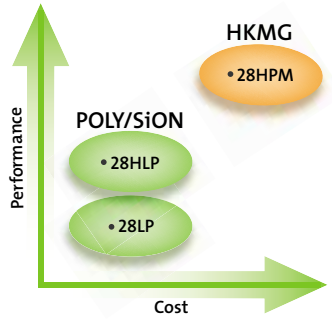
Advanced Technology Roadmap



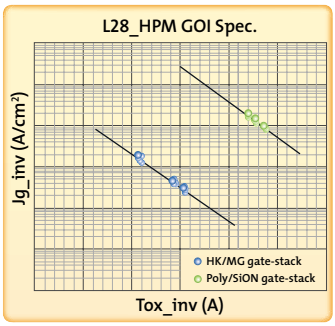
28nm Technology for Broad Applications

UMC incorporates multiple approaches for its 28nm technology to address different market applications. The first option is conventional poly-SiON technology used for our Low Power (LP) and High-Performance Low Power (HLP) processes. The LP process follows industry standards to satisfy customers' multiple foundry strategy. The HLP process delivers a 20%* performance enhancement over the LP platform due to process optimization techniques. These platforms are ideal for portable applications and consumer electronics such as mobile phones, wireless ICs and TVs. For applications that require further reduction of EOT (equivalent oxide thickness) to increase performance but still maintain low power consumption, a second, High-K/Metal Gate (HK/MG) option is offered on a High Performance for Mobile (HPM) platform. The HPM process is ideal for speed-intensive and power consumption optimization products such as digital TV applications, portable processors and high speed networking.

28nm Platform Cost vs. Performance



HK/MG Technology Benefits



* Based on UMC's internal benchmarking. Actual customer product performance results will vary.

28nm Device Solutions

UMC's 28-nanometer solution features a flexible technology design platform. Customers can choose the process device options optimized for their specific application, such as HPM, LP and HLP transistors with their multiple Vt options.

L28 Device Offering

Platform Offering		HLP	LP	HPM
Core Vcc (V)		1.05	1.05	0.9
Vt Options	Ultra -Low			√
	Low	√	√	√
	Regular	√	√	√
	High	√	√	√
	Ultra - High			√
1.8V IO	1.8V UD 1.5V	√*	√	√
	1.8V	√*	√	√
2.5V IO	2.5V UD 1.8V	√	√*	√*
	2.5V	√	√*	√*
	2.5V OD 3.3V	√	√*	√*
SRAM	SP	√	√	√
	DP	√	√	√
Mixed Signal Devices		Native Vt / Bipolar / Diodes / MOM Cap. / NCAP / Resistor		

* Optional IO Offering

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