

# 28SLP

## 28nm Process Technology

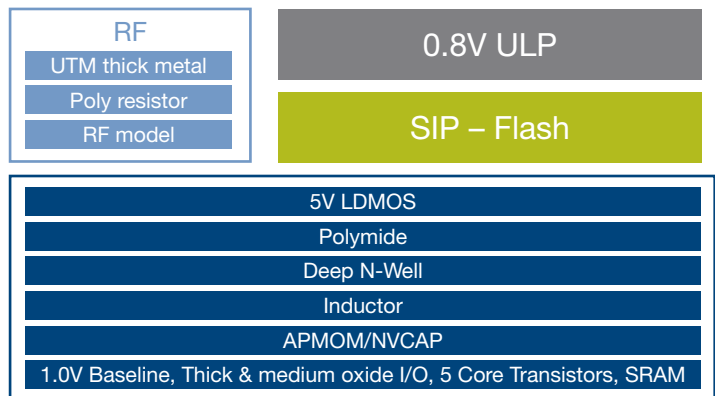
### Highlights

- Single 28nm platform to support logic, analog and RF
  - + Manufactured in state-of-the-art fab in Dresden, Germany
  - + Mainstream, low-power HKMG platform
  - + Industry-leading 28nm ULL SRAM/logic solutions
  - + High volume production capability with fully mature D0 (<0.055 def/in<sup>2</sup>) defect density
- Optimized for mobile and IoT applications
  - + Baseband SoC
  - + Mobile AP
  - + Wearables
  - + ISP
  - + Audio Processor
- Comprehensive design ecosystem
  - + Full range of Foundation and Complex IP libraries
  - + PDK and reference flows supported by major EDA and IP partners
- Extensive services and supply chain support
  - + Regularly scheduled MPWs
  - + Advanced packaging and test solutions including 2.5D
  - + System-in-Package (SiP) enabled for faster time-to-market

### Enabling *Connected Intelligence*

GLOBALFOUNDRIES 28SLP process technology platform is optimized for power, performance and die cost. It is ideal for power and price sensitive applications in mobile, wireless, consumer and other markets, that require GHz performance with flexible mixed-technology options for RF, ultra low power and ultra low leakage.

The 28SLP platform supports a wide choice of device component options to meet your exacting low-power product specifications. 28SLP provides up to 40% less power, 50% less area and has significantly lower cost compared to 40nm technologies. The ULP option provides an additional 40% power saving. 28SLP provides twice the gate density of comparable 40nm processes and an SRAM cell size shrink greater than 50 percent.



### Target Applications and Solutions

- Baseband SoC/DTV (28SLP+RF+ULP)
- Mobile AP (28SLP+RF+ULP)
- Wearables (28SLP+RF+ULP+NVM)
- IoT/RF Transceivers (28SLP+RF)
- ISP and Audio Processor (28SLP+ULP+NVM)
- Remote Security Camera (28SLP+RF+ULP+ULL)

## Technology Overview

- Five core device Vt's
- Two or three I/O Vt's @1.5V/1.8V or 1.8V/2.5V/3.3V
- Vdd: 1.0V nominal (SLP) and 0.8V nominal (ULP)
- 5V LDMOS with underdrive option
- Dual- and Triple-well process
- Full suite of passive devices
- RF stack options including UTM layer
- Standard temperature range: -40°C to +125°C

## IP Overview

The 28SLP Platform IP portfolio includes a wide range of silicon-proven high performance, power-optimized solutions for a broad set of applications.

Foundation IP		
Standard Cells 7T/8T/9T/12T	GPIO	
SRAM & ROM Compiler	ADC/DAC	
PLL	Temp Sensor	ESD
Interface IP		
DDR3/4	LPDDR3/4	HDMI
SATA I/II/III	PCIe G2/3	USB3.0/2.0
MIPI M-PHY/D-PHY	SerDes (3G/6G)	
Memory		
Electrical Fuse	NVM: OTP	
ROM Compiler	SRAM Compiler	

Contact GF for IP availability.

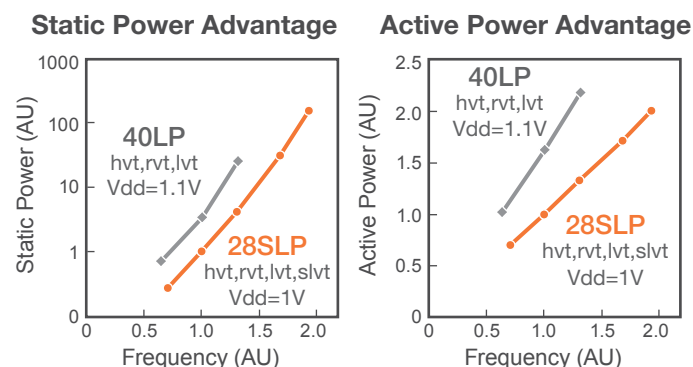
## 28nm Platform Extensions

The 28nm-SLP platform offers numerous technology options that enable you to further innovate and differentiate your design.

RF	RF models for high frequency wireless connectivity in low power applications
Ultra Low Power	Flexible 0.8V power option optimized for consumer and mobile applications
Ultra Low Leakage	Ultra-low static leakage (10pA/um) for IoT and wearables
NVM	System-in-Package (SIP) with flash memory for faster time-to-market and flexible product upgrade
Automotive	Grade 2 for high reliability, AEC-Q100 (Rev.G) qualified process (2018)

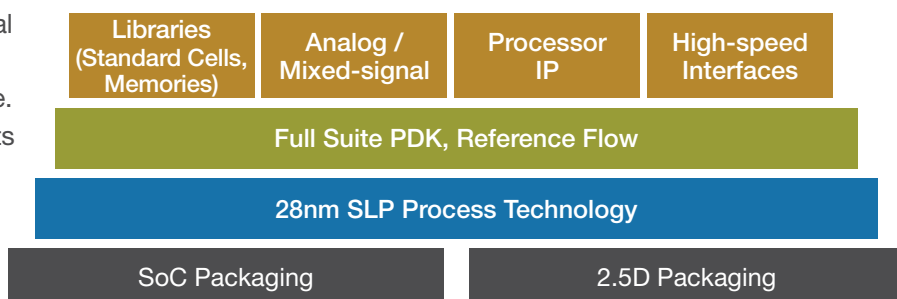
## Performance and Power Advantages from 28nm Scaling

28SLP delivers 36% higher performance at iso dynamic power, 40% lower power consumption and 40% lower leakage at iso frequency compared to 40nm process technology.



## GLOBALSOLUTIONS® Design and Manufacturing Ecosystem

GLOBALSOLUTIONS is the sum of our internal resources and ecosystem partners, combined to efficiently enable the fastest time-to-volume. This ecosystem includes partners in all aspects of design enablement and turnkey services, OPC and mask operations, and advanced capabilities in assembly solutions.



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