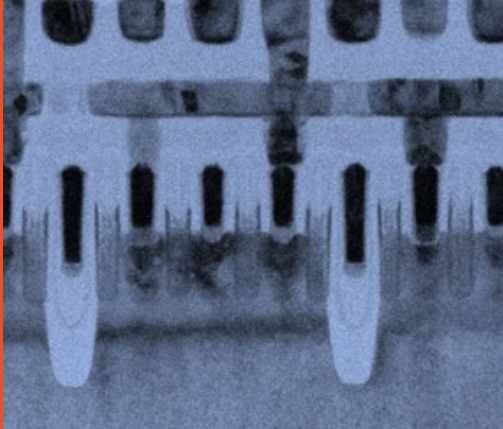




GLOBALFOUNDRIES®



7LP

7nm FinFET Technology

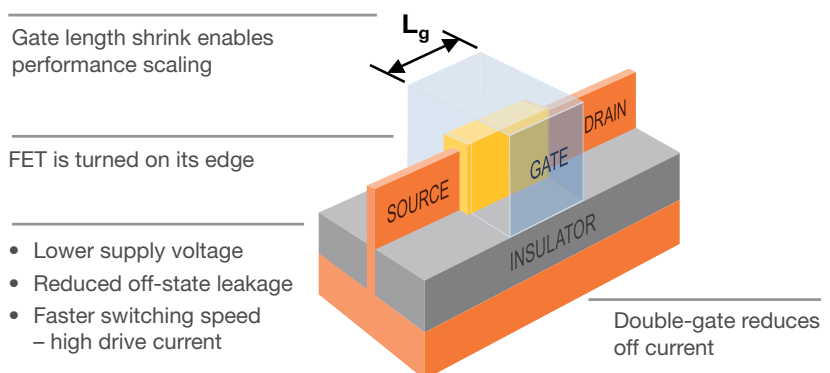
Highlights

- 7nm FinFET technology
 - + 3rd generation FinFET process technology platform
 - + Manufactured in state-of-the-art facilities in Saratoga County, NY
- Ideal for high-performance, power-efficient SoC applications
 - + Cloud / Data Center servers
 - + CPU and GPU for VR
 - + High-end mobile processors
 - + Wired and wireless networking
 - + Automotive ADAS
 - + AI - DNN/CNN
- Comprehensive design ecosystem
 - + Full foundation and complex IP libraries
 - + PDK and reference flows supported by major EDA and IP partners
 - + Robust DFM solutions
- Complete services and supply chain support
 - + Regularly scheduled MPWs
 - + Advanced packaging and test solutions, including 2.5D and 3D products

The Right Technology for the Right Application™

GLOBALFOUNDRIES 7LP 7nm FinFET process technology platform is ideal for high-performance, power-efficient SoCs in demanding, high-volume applications.

This technology provides world-class performance, power, area and cost advantages from 7nm scaling. Based on 3D FinFET transistor architecture and optical lithography with EUV compatibility at key levels, 7LP technology delivers more than twice the logic and SRAM density, and either >40% performance boost or >60% total power reduction, compared to 14nm foundry FinFET offerings.

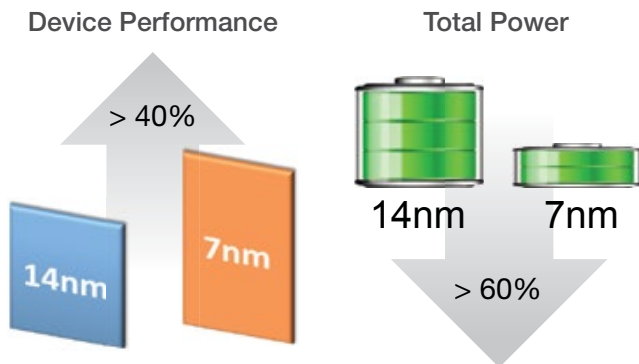


Technology Overview

- Twin-well CMOS bulk FinFET
- 5 Core device Vt's
- Two gate dielectrics: thin (SG) and medium I/O (EG)
- Full suite of passive devices
- Optional MIM capacitor, eFuse
- VDD: 0.75V nominal or 0.85V overdrive
- Standard temperature range: -40°C to 125°C
- Optical lithography based process with EUV compatibility
- Up to 17 layers of metallization

Performance, Power, Cost Advantage from 7nm Area Scaling

- >40% performance improvement at iso power (vs. 14nm)
- >60% power reduction at iso frequency (vs. 14nm)
- Up to 30% lower die cost (vs. 14nm)



Application-optimized Platform Extensions

- High Performance** → 5GHz operation
Server, Data Center, ASICs
- 6T** → >17M gates/mm²
for maximum scaling
- Automotive** → Grade 2 (in planning)
In-vehicle compute/networking
- EUV** → For cycle time and process simplification

IP Overview

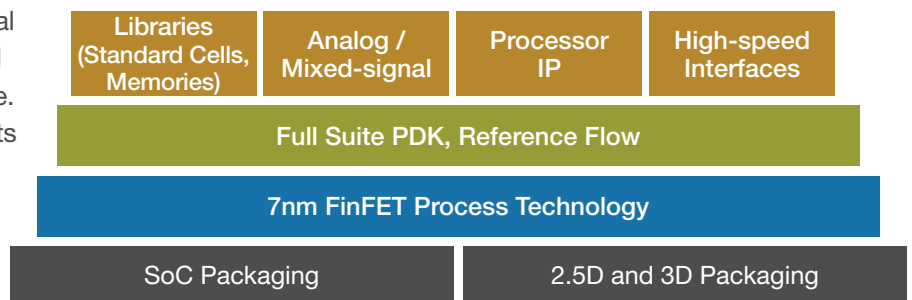
The comprehensive 7LP FinFET Platform IP portfolio includes a wide range of silicon-proven high performance, power-optimized solutions for a broad set of applications.

Foundation IP		
Standard Cell 9T	Standard Cell 6T	
GPIO / ESD	PLL	Temp & Voltage Sensor
ROM Compiler	SRAM Compiler / TCAM compiler	
Interface IP		
DDR4/5	LPDDR4/5	PCIe G1.1/2/3/4
MIPI D-PHY/M-PHY	SATA I/II/III	USB2/3.x
DP/HDMI/MHL 2.x	SERDES (6G-112G)	
HBM2.0	Video DAC	24b Audio ADC
Memory		
High density memories	Electrical Fuse	OTP
Single-port/Pseudo Two-port Dense SRAM		
Processors		Analog / mixed-signal

Contact GF for IP availability.

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.



GLOBALFOUNDRIES®

2600 Great America Way, Santa Clara, CA 95054 USA
Tel: +1 408-462-3900 globalfoundries.com/contact-us

The information contained herein is the property of GLOBALFOUNDRIES and/or its licensors. This document is for informational purposes only, is current only as of the date of publication and is subject to change by GLOBALFOUNDRIES at any time without notice. GLOBALFOUNDRIES, the GLOBALFOUNDRIES logo and combinations thereof are trademarks of GLOBALFOUNDRIES Inc. in the United States and/or other jurisdictions. Other product or service names are for identification purposes only and may be trademarks or service marks of their respective owners. © GLOBALFOUNDRIES Inc. 2017. Unless otherwise indicated, all rights reserved. Do not copy or redistribute except as expressly permitted by GLOBALFOUNDRIES.