



Freescal

Foundry Services

The Foundry Services vision is to help organizations create innovative products by supplying world-class, specialty foundry services using Freescale assets and technology.

Our foundry services are designed to give you the advantages of the latest technologies and the deep expertise of a global leader in the design and manufacture of embedded semiconductors. Freescale's state-of-the-art facilities, complemented with a full range of value-added services, help bring your ideas to market ahead of the competition—at competitive costs.

State-of-the-Art Technology

A global leader in the design and manufacture of embedded semiconductors, we provide cutting-edge SOI, advanced CMOS, GaAs, RF BiCMOS, MRAM and smart power process technologies. Our technologies and services support your market success.

- > Specialty technologies
- > Low/high wafer volume
- > Customer-specific process technology
- > Advanced post-processing electroplating (C4, Cu Inductors)

Foundry Web Site Tools

The Freescale Foundry Services Web site is designed to deliver the information and tools you need. We provide advanced physical design kits for our available technologies, and customers have access to their production WIP reports, which are updated daily.

To learn about the physical design kits or to find out more about our services, visit www.freescale.com/foundry.

Value-Added Services

World-class foundry technologies that put expertise on your side. Demonstrating our commitment to the future and our innovation in the semiconductor industry, Freescale invests over \$1 billion annually in R&D and has over 5,600 patent families.

> A broad technology portfolio

> Expert technical support

Our expertise is supported by:

> Exceptional customer support

> Program management

> 24/7 online access to download physical design kits and ask questions

> Web site to view WIP status (production lots)

> Online access to FAQs, tutorials and documentation

50 Years of Innovation and a commitment to Customer Success

Freescale continues to build on our record of quality, innovative products and a high level of customer support—our customers know it, and expect it.

Freescale drives success with a combination of leading technology and a focus on delivering high-value solutions to the semiconductor market. Our state-of-the-art and breakthrough technologies drive scale and efficiency throughout the market.

Working with us, you have the advantages of global power.

Manufacturing Process

Logic	90 nm	130 nm
	CMOS-SOI; CMOS general power; CMOS low power	CMOS-SOI; CMOS general power; CMOS low power
	Wafer size: 200/300 mm	Wafer size: 200 mm
	Transistor nodes: 3 low power, general purpose, high performance/SOI	Transistor nodes: 5 low power, general purpose, high performance/SOI (3)
	Interconnect: Cu (low K)	Interconnect: Cu (low K)
	No. of metal layers 5–9	No. of metal layers 5–9
	Gate density > 450K/mm ²	Gate density > 200K/mm ²
	Foundry compatible: Yes	Foundry compatible: Yes
	Application: hi-perf logic, mixed signal, low power, embedded solutions	

MRAM	90 nm	130 nm	180 nm	0.25 nm
	Non-volatile, high-speed, unlimited endurance memory. Can be integrated as a module to customer's, front-end CMOS	Non-volatile, high-speed, unlimited endurance memory. Can be integrated as a module to customer's, front-end CMOS	Non-volatile, high-speed, unlimited endurance memory. Can be integrated as a module to customer's, front-end CMOS	Non-volatile, high-speed, unlimited endurance memory. Can be integrated as a module to customer's, front-end CMOS

SmartPower	0.25 micron	0.35 micron	> 0.4 micron
	SMOS8MV(85V); SMOS8LV(18V)	SMOS7L	SMOS5HV+ (105V)
	Wafer size: 200 mm	Wafer size: 200 mm	Wafer size: 150 mm
	Voltage capability: low (20V) to medium (80V)	Voltage capability: low (18V) to medium (45V)	Voltage capability: low (18V); medium (45V); high voltage (105V)
	No. of metal layers 3 or 4	No. of metal layers 3 or 4	No. of metal layers 2 or 3
	Gate density > 25K/mm ²	Gate density > 12K/mm ²	Gate density > 5K/mm ²
	Analog and power devices	Analog and power devices	Power devices
	Applications: power management, motor control, high voltage, switching, regulators, mixed signal/analog	Applications: power management, motor control, high voltage, switching, regulators, mixed signal/analog	Applications: power management, motor control, high voltage, switching, regulators, mixed signal/analog

RF/IF Silicon	0.18 micron	0.35 micron
	Analog CMOS, RF CMOS, BiCMOS-Sige	Analog CMOS, RF CMOS, BiCMOS-Sige
	Wafer size: 200 mm	Wafer size: 200 mm
	Interconnect: Cu	Interconnect: AlCu
	Ft: 60 GHz (RF CMOS); 50 GHz, 120 GHz (BiCMOS-Sige HBT)	Ft: 24 GHz (BiCMOS-Sige BJT); 49 GHz, 80 GHz (BiCMOS-Sige HBT)
	Applications: mixed signal, ADC, DAC, transceiver (LNA, mixer, VCO, synthesizer, TIA)	Applications: mixed signal, ADC, DAC, transceiver (LNA, mixer, VCO, synthesizer, TIA)

Learn More: For more information on the Freescale foundry offerings, please visit www.freescale.com/foundry.