xfab

EUROPRACTICE

X-FAB 0.35, 0.18, 0.13, 0.11 µm & MEMS, GaN-on-Si, PHOTONICS INTEGRATION

Picture Source: X-FAB

Europractice offers Multi-Project-Wafer (MPW) services of X-FAB to universities, research institutes, and their spinouts.

Why Europractice?

- Affordable and easy access to Prototyping, Design Tools, and Training for universities, research institutes, and their spinouts.
- MPW runs for multiple technologies, including ASICs, Photonics, TFT, and more.
- Advanced packaging and system integration support.

Why X-FAB?

- The world's leading foundry group for analog/mixed-signal semiconductor applications.
- Technologies ranging from 1.0 to 0.13 µm mixed-signal CMOS, special SOI and MEMS long lifetime processes for automotive, industrial, medical and other applications.
- Six manufacturing sites in Germany, France, Malaysia and the USA.

Technology Highlights

XH035: Modular Mixed-Signal Technology with HV Extensions

0.35 µm CMOS with single poly and triple metal. Supports low Vt, low leakage devices, embedded NVM, HV modules, and high resistance polysilicon. Features MOS and bipolar devices, including ultra-low noise transistors for high SNR industrial, automotive, and telecom applications. Noble Metal Au/Pt finish available for MLM.

XH018: Modular Mixed-Signal HV CMOS

0.18 µm single-poly CMOS platform with up to six metals, supporting 175 °C, high voltage options, and embedded NVM. Ideal for automotive SoCs (combustion and EV), HV communication, consumer, and industrial applications.

XT018: Modular HV SOI CMOS

SOI based 0.18 µm process with Deep Trench Isolation and six metals. Supports up to 375 V, multiple NVM options, full PDK, robust device modelling, and wide IP availability. Designed for automotive, industrial, and medical systems operating from –40 to 175 °C.

XS018: High Speed Image Sensor Technology

Supports 4T cells, pinned photodiodes, and stitching for large high frame rate sensors used in medical and scientific X ray imaging. Includes a 3.3 V core for low mask count, low power SoC designs serving automotive, industrial, and medical markets.

XP018: Modular CMOS Power Management

0.18 µm CMOS platform with high voltage and NVM integration. A cost-efficient solution for high performance power management ICs. Ideal for switching, lighting, and display applications operating from –40 to 175 °C.

XR013: RF SOI CMOS

0.13 µm RF SOI platform for multi standard fixed and mobile RF applications from –40 to 125 °C. Features twin well 2.5 V CMOS on a high impedance SOI substrate with four metal hybrid Cu/Al metallization.

XT011: Next Generation BCD on SOI

SOI platform with Deep Trench Isolation built on a 110 nm process. Offers high voltage devices, automotive grade NVM, and 2× standard cell density vs. XT018. Targets next generation automotive systems needing greater processing capability, with a scaling path for industrial and medical products.

XMB10: MEMS Platform

Open platform MEMS process supporting single, double or triple axis inertial sensors (accelerometers/gyroscopes). Three wafer cavity SOI stack with DRIE defined silicon structures. Optional top/bottom metal layers and cost-effective wafer level bonding are available.

XG035: GaN on Si Power Technology NEW

GaN on Si technology produced in X FAB's automotive qualified 8 inch fab. Supports d mode HEMTs scalable from 100–650 V for high efficiency power conversion. Customer specific options include enhancement mode HEMTs and Schottky Barrier Diodes for high frequency rectification and power supplies. Optimized for high frequency, low RDS (on) switching and used in automotive, data center, industrial, renewable energy, and consumer power applications.

XPH90: Heterogeneous Photonic Integration NEW

XPH90 combines high performance III V materials with silicon scalability through heterogeneous integration. Built on an SOI photonics platform, it integrates Si, SiN, and InP technologies to enable high speed, highly integrated photonic solutions for data center, telecom, and LiDAR applications.

Technology Details

XH035 3.3V/5V	XH018 1.8V/3.3V	XT018 1.8V/5V	XTO11
M3 or M4 Layers Thick metal option 5V or 18V dual gate for HV transistor Isolated MOS module Deep N-well and P-well Operating voltages 45V, 70V, 90V HR polysilicon MIM Capacitor Depletion NMOS Module Tiny EEPROM	M4 or M6 Layers, thick metal layer Triple well isolated 10-45V HV CMOS transistor, 18V gate oxide 1.8 low Vt module additional N-well, P-well Medium R, P-doped polysilicon MIM or MIMH capacitor HV Schottky Diode Support photodiodes and SPAD NVM module	M4 or M6 layers, thick metal layer Deep Trench Isolation 10-375V HV transistors 1.8V for 1.8V/5.0V PNP bipolar transistors 7.0 N-type protection DIODE (dpc) HR N-doped polysilicon resistor MIM or MIMH capacitor NVM module	M6 to M8 Layers Thick metal option Deep Trench Isolation (DTI) 12V - 60V HV CMOS transistors Poly resistors Metal Fringe capacitors 1.5V MOS Low Power, Standard Vt, Low Vt NVM module

XS018 1.8V/3.3V	XP018 1.8V/5V	XPH90 NEW	XG035 GaN-on-Si NEW
M4 or M6 layers, thin metal layer 4T based CMOS imaging sensors Selection of pinned photo diodes 3.3V buried channel NMOS in pixel 3.3V low Vt NMOS in pixel MIM or MIMH capacitor Polysilicon resistor module Flat passivation for micro lense or colour filtering, post process	M4 or M6 layers Thick metal layer 12V-60V HV transistors Medium R P-doped polysilicon resistor HR P-doped polysilicon resistor MIM or MIMH capacitor Ready-to-use EEPROM memory block (SONOS based)	SOI Photonics platform Heterogeneous III-V integration Micro-transfer print. of active devices Si & SiN waveguides (multi-etch) High- and low-index materials Optical windows and cavities Cu metallization (2–4 layers)+Al layer Deep etch for edge fiber coupling Selective process customization	8"automotive-qualified GaN-on-Si platform d-mode HEMTs, scalable 100–650V e-mode HEMT and SBD options Optimized for thicker GaN-on-Si wafers High-frequency, low-RDS(on) switching

Would you like to discover more?

X-FAB Technologies
via imec: epxfab@imec.be
via Fraunhofer: silicon-asic@iis.fraunhofer.de