ams 0.35 µm
PROTOTYPING AND VOLUME PRODUCTION

Through EUROPRACTICE-IC, customers from academia and industry can gain access to Multi-Project-Wafer runs and Volume Production services of ams.

Why EUROPRACTICE?

- Affordable and easy access to Prototyping and Small Volume Production services for academia and industry.
- MPW (Multi-Project-Wafer) runs for various technologies, including ASICs, Photonics, MEMS and GaN.
- Advanced packaging, system integration solutions and test services.

Why ams?

- State-of-the-art 8-inch fab offering high-performance process technologies with more than 30 years of experience in wafer processing.
- Benchmark PDK (Process Design Kit) providing all the building blocks required to create complex analog mixed-signal designs.
- 350nm technologies with standard CMOS, HV, SiGe and Opto Process fabricated in Austria.

Technology Highlights

ams C35 Standard CMOS Process C35

The C35 mixed-signal process is manufactured in ams' state of the art 200mm fabrication facility ensuring very low defect densities and high yields. ams' 0.35µm CMOS process family has been transferred from TSMC and is fully compatible with TSMC 0.35µm mixed-signal process. High density CMOS standard cell library optimized for synthesis and 3- and 4-layer routing guarantees high gate densities.

Peripheral cell libraries are available for 3.3V and 5V with high driving capabilities and excellent ESD performance. Qualified digital macro blocks (RAM, diffusion programmable ROM and DPRAM) are available on request.

ams High Voltage Process H35

ams 0.35µm high voltage process platform is optimized for complex mixed-signal circuits up to 120V operating conditions. In addition to the standard CMOS transistors, a variety of high voltage transistors are available: HV-NMOS, -PMOS, -DMOS transistors, N-junction FETS, isolated NPN bipolar transistors and isolated LV-NMOS transistors.

High voltage and standard devices can be easily combined into the same chip. Low power consumption and fast switching speed provide a wide range of applications in the automotive and industrial segments. Further applications are targeted towards high precision analog Front-ends for sensors and transducers.

In combination with ams proven mixed-signal libraries, the H35 process family represents the ideal solution for high voltage designs.

ams SiGe Process S35

ams high speed SiGe HBT transistors with lowest noise figures enable designs for operating frequencies up to 7GHz with current consumptions significantly lower than comparable designs based on conventional CMOS RF processes. These advanced processes offer high-speed bipolar-transistors with excellent analog performance, such as high fmax and low noise, complementary MOS transistors, very low-parasitic linear capacitors, linear resistors and spiral inductors. The careful characterization and modelling of all active, passive and parasitic devices of this process result in simulation models for different circuit simulators, which guarantees the optimum use of the ams SiGe process.

ams OPTO Processes C35OA & C35O1

ams has a broad portfolio of optoelectronic device types and back end processes that enable designers of advanced analog/mixed-signal products to optimize important parameters of their integrated circuits, such as wavelength, quantum efficiency, responsivity, dark current and device response time. In addition, both C35O1 and C35OA are using P-Epitaxial layer to lower the dark current. The optoelectronic foundry platform is ideally suited for a wide variety of optical applications, including ambient light sensors, RGG pixel sensors, IR sensors, Proximity sensors and LCD backlight colour adjustments.

Technology Details

C35 Standard CMOS	H35 HV Process	S35 SiGe Process	C35 Opto Process with Barc
0.35µm Metal layers: 4 Poly: 2 Core: 3,3 V/5V I/0: 3,3 V/5V HIRES Poly PIP RAM, ROM and EEPROM Module (on request)	0.35µm High Voltage module Metal layers: 4 Poly: 2 Core: 3,3 V/5V/20V/50V/120V I/0: 3,3 V/5V/20V/50V/120V HIRES Poly Substrate logic module: p-well and n-well for 3.3V / 5V NMOS and PMOS Thick metal 4 (3 µm thick top metal) RAM, ROM and EEPROM Module on request)	0.35µm High speed HBT module Metal layers: 4 Poly: 2 Core: 3,3 V/5V I/0: 3,3 V/5V Thick metal 4 (3 µm thick top metal) MIM capatictor HIRES Poly RAM, ROM (on request)	C35B4OA and C35B4O1 Anti-Reflecting Coating Bottom-Anti-Reflecting Coating P- Epitaxial wafers Metal layers: 4 Poly: 2 Core: 3,3 V/5V I/0: 3,3 V/5V PIP PN and PIN photo diodes