ams OSRAM 0.35 and 0.18 µm PROTOTYPING AND VOLUME PRODUCTION

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

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 more.
- Advanced packaging, system integration solutions and test services.

Why ams OSRAM?

- 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 and 180nm technologies with standard CMOS, HV, SiGe and Opto Process fabricated in Austria.

Technology Highlights

ams OSRAM C35 Standard CMOS Process C35

The C35 mixed-signal process is manufactured in ams OSRAM state-of-the-art 200mm fabrication facility ensuring very low defect densities and high yields. ams OSRAM 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 OSRAM High Voltage Process H35

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

ams OSRAM OPTO Processes C35OA & C35O1

ams OSRAM 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.

ams OSRAM SiGe Process S35

ams OSRAM 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.

ams OSRAM 180nm CMOS atC18

The 0.18µm CMOS Mixed-Signal process (C18) is the base process for ams OSRAM advanced 0.18µm process family. The process has reliable low-voltage NMOS and PMOS devices with 1.8V and 3.3V operating voltages optimized for mixed-signal applications. A low low-leakage device library option is available. Fully characterized passives include capacitors, resistors and voltage controlled varistors. The technology has an extended set of well and substrate based diodes, bipolar vertical transistors, and user-friendly design environment with unparalleled and efficient design support. The C18 process is well-suited for a wide variety of applications, including smart sensors, sensor interface devices, smart metering devices, industrial and building applications.

Technology Details

C35 Standard CMOS

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)

C35 Opto Process with Barc

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

H35 HV Process

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)

180nm CMOS atC18

180nm
Met. layers: 4 to 6 metals
Poly: 1, high resistive poly
Core: 1.8 V/3.3V
I/O: 1.8 V/3.3V
MIM 2 fF/ µm² capatictor
Schottky diode
Integration density: up to 150kGates/mm²
Temp. range: -40° C. / +125° C

S35 SiGe Process

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)

Would you like to discover more?

ams OSRAM Technologies
via CIME-P: cime-prototypage@grenoble-inp.fr
via Fraunhofer: virtual-asic@iis.fraunhofer.de