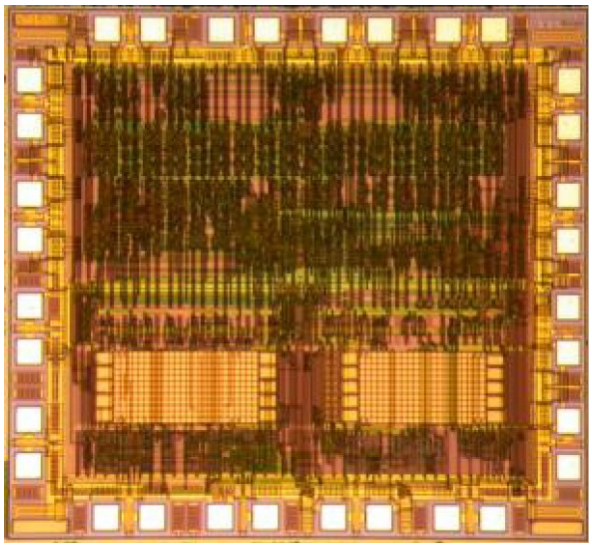
MICRODUL MD300

The MICRODUL MD300 CMOS gate arrays offer a quick and cost-effective route for integration of mixed analog/digital electronics. Different complexities can be accounted for by single or multiple use of the basic MD300 chip cell. Typical application fields for the MD300 gate arrays are sensor signal amplification, analog and digital signal processing, and control tasks.

The basic MD300 chip cell provides analog nmos and pmos transistors, different types of resistors (poly-silicon and n-well), a range of nitride and gate-oxide capacitors, pnp substrate transistors, and even 32 EPROM cells. In addition, a large portion of the basic cell is reserved for digital gates.

Customization of the array is achieved by patterning of two metal layers and one via layer. MPW (multi project wafer) runs for low-cost prototyping are provided. The wafers are manufactured through PHILIPS Semiconductors in the C175SC (1mm) CMOS process.



MD300 Basic Chip Cell

MD300 (basic cell)	
Pads	16
Standard gates (digital)	1100
Analog pmos and nmos transistors	800
Resistors (800, 2.2k, 55k, 275k)	470
Capacitors (1.5pF)	64
EPROM cells	32
ESD protection diodes	5
Supply voltage range	1.2-6V

Analog building blocks typically integrated on the MD300 gate arrays are voltage references, comparators, opamps, transcond. amplifiers, oscillators (crystal, RC), switched capacitor filters, voltage multipliers, or ADCs.

The C175SC (1µm) CMOS process forms the technological basis for PHILIPS' most successful line of LCD drivers for mobile telephones. Due to the very high volumes manufactured, the process is fully mature and well controlled, ensuring a high and stable yield.

Products implemented on MD300 have been capacitive pressure sensors, light barriers, real time clocks, transponders, etc. .

Your competitive edge with MICRODUL MD300

- Analog and digital functionality on one chip, wide range of analog components
- MPW (multiple-project-wafers) runs for low-cost prototyping
- Low NRE cost (only three customizable masks)
- Available in *small*, medium and large quantities
- Short design times
- Low risk approach (components have to be “only” connected, last-minute enhancements possible through unused components)
- EPROM programmability
- 4kV ESD (human body model)
- Internal supply voltage max 6V, output max. 9V

Packages

- Plastic DIL, plastic SO, ceramic DIL, chip size packages
- Further packages on request

Application fields

- Sensor signal conditioning
- A/D conversion
- Digital signal processing
- Telecom
- Automation & control

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