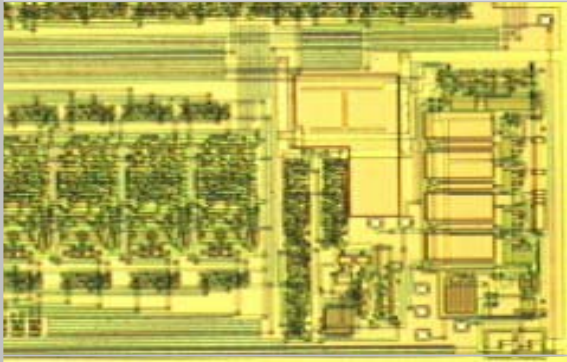


Mixed Signal ASICs

CMOS Application Specific ICs With Non Volatile Memory



RSL's Semiconductor Business provides integrated IC solutions for safety critical applications

Benefits

- ❑ Complex analog functions can be tailored for specific applications
- ❑ Transfer functions can be customised
- ❑ Highly integrated
- ❑ Improved product reliability

Raytheon Systems Limited designs and manufactures mixed signal ASICs on a range of CMOS processes to suit the application needs of its customers. The business has extensive experience in the provision of a range of sensor interface and safety critical solutions to commercial and defence customers. RSL's own proprietary semiconductor processes are used in the designs, including Non Volatile Memory to calibrate analog functions, and to allow re-programmability in the field. Ownership of the complete cycle from design through fabrication reduces supply risk and allows for further process customisation utilising a 'flexible fab policy'.

RSL supports the very long product lifecycles typical in industrial, automotive and defence applications. More than thirty years of experience provides very high levels of product reliability and endurance, backed by extensive field proven ruggedness. RSL can use an extensive library of design cells to optimise design cycle time, and can also develop specific custom cells. In addition to the development of ASICs, RSL also provides foundry services to customer who have developed their own CMOS based ICs, and can develop non-CMOS based foundry semiconductor processes.

CMOS ASICs

Analog With Non Volatile Memory

Complex analog functions can be tailored for specific applications

- Adjust amplifier gain
- Program bandwidth of a filter
- Set voltage/current of regulators
- Set oscillator frequency

Transfer functions can be customised

- Trimming of non-linear sensors with ADC
- EEPROM lookup tables
- Programmable linear functions
- Generate special converters

Digital With Non Volatile Memory

Program code storage flexibility

Code storage
Identification
System access

Counter data storage
Power loss or backup

ID tag applications

Non Volatile Characteristics

Retention > 10yrs @ 125C

Endurance >1M cycles

Floating gate Fowler Nordheim tunneling
(Raytheon proprietary)

Core Cells

Analog

- OpAmps
- Switches
- Bandgap
- Comparators
- Oscillators
- Bias current generators
- Voltage regulators
- Programmable resistors, capacitors
- DACs and ADCs

Digital

Full library of digital elements

Non Volatile

- Latches
- Flip-flops
- EEPROM
- Level shifters
- Voltage pump
- Regulator (bandgap)

Quality Approvals

BS EN ISO90001:2000

ISO/TS 16949:2002

ISO14001

AS9100

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