

## Overview

GLOBALFOUNDRIES 55nm LPx and 130nm BCDlite process technologies with eFlash, RF and analog IP, offer cost-effective solutions to address reliability and power challenges in applications such as:

- High-reliability MCUs, automotive grade 1
- Industrial MCUs, IoT-gateways, smartcards
- IoT, wearables, smart devices, sensor hubs
- Integration of wireless connectivity with MCU (55nm LPx)
- Integration of analog functions with MCU (130nm BCDlite)

Mature design and process flows maximize gross die per wafer, manufactured on 300mm wafers at the company's facilities in Singapore.



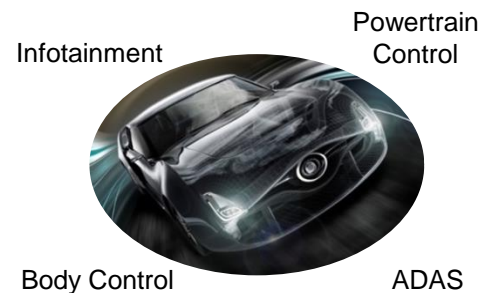
Includes highly reliable eFlash



### 55nm LPx eFlash Memory

The 55nm LPx platform includes embedded eFlash technology with:

- SST ESF3 3<sup>rd</sup> generation Super-Flash technology
- Bitcell size: 0.090 $\mu\text{m}^2$
- “off-the-shelf” macros, from 1Mb to 16Mb
- Access speed: as fast as 10ns
- Endurance: 200k cycles
- Data Retention: 10 years at operation temperature (85°C commercial grade, 125°C automotive Grade 1 application)



Infotainment

Powertrain Control

Body Control

ADAS



### 130nm BCDlite® eFlash Memory

The 130nm BCDlite platform includes embedded eFlash technology with:

- 130nm LV/MV + HV Power Transistors
- SST ESF1 1<sup>st</sup> generation Super-Flash technology
- Up to 50% less process adders compared to competing ESF1 solutions
- Cell size: 0.65 $\mu\text{m}^2$
- “off-the-shelf” macros, 256Kb and 2Mb
- Access speed: as fast as 30ns
- Endurance: 10k cycles
- Data Retention: 10 years at operation temperature (85°C commercial grade)



Smartcards



Industrial MCU



Wearables



## 55nm Analog and RF

A broad range of 55nm analog and RF IP enables the integration of wireless connectivity with low power logic on an SoC. For example, combining RF IP and eFlash with low power logic is an excellent fit for IoT applications.

## 55nm Baseline Features

Feature	55nm Process Technology
Performance	10% optical shrink vs. 65nm
Core Device	1.2V CMOS Baseline Process
IO Device	1.8/2.5/3.3V (with overdrive and underdrive)
Standard Cells	0.9V, 1.2V Standard Cell Libraries
eFlash	SST ESF 3 <sup>rd</sup> generation
SRAM	Dense SP - 0.425µm <sup>2</sup> Performance SP - 0.502µm <sup>2</sup> Dense DP 8T - 0.789µm <sup>2</sup>
eFuse	Yes
Other Devices	5V EDMOS, APMOM, MIM

## BCDlite® Process Technology

- Similar to BCD with simpler, more efficient, cost-effective process
- No buried layer, sinker, deep trench isolation, in-process EPI
- Ideal for applications up to 30V
- Used in PMICs and audio amplifiers for leading mobile phones/tablet

## 130nm BCDlite® Analog & RF

A broad range of 130nm analog and RF IP enables the integration of numerous, discrete ICs into a complex SoC. For example, combining analog IP and eFlash with standard cell logic is an excellent fit for industrial and automotive applications.

## 130nm BCDlite Baseline Features

Feature	130nm BCDlite
Core Device	5V CMOS Baseline Process 1.2V/1.5V CMOS (OTP & eFuse)
IO Device	5V
HV Power Device	10, 12, 16, 20, 24, 30V N/PLDMOS
Standard Cells	1.5V
eFlash	SST ESF 1 <sup>st</sup> generation
OTP	1.5V/5V
eFuse	5V SG
Other Devices	HRES, Zener Diode, MIM, 5V EDMOS
Memory Compilers	SP SRAM, DP SRAM, ROM, 1PRF, 2PRF