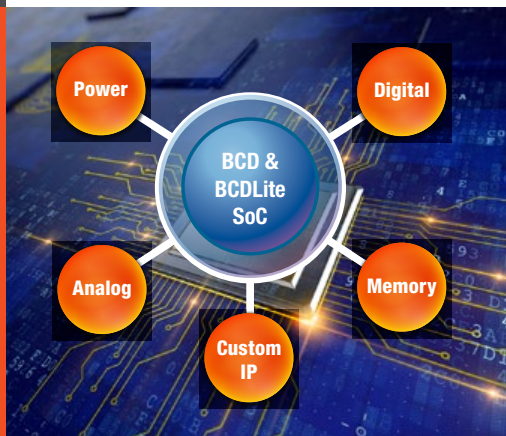




GLOBALFOUNDRIES®



# 55 BCDLite®

## 55nm 1.2V to 30V Process Technology

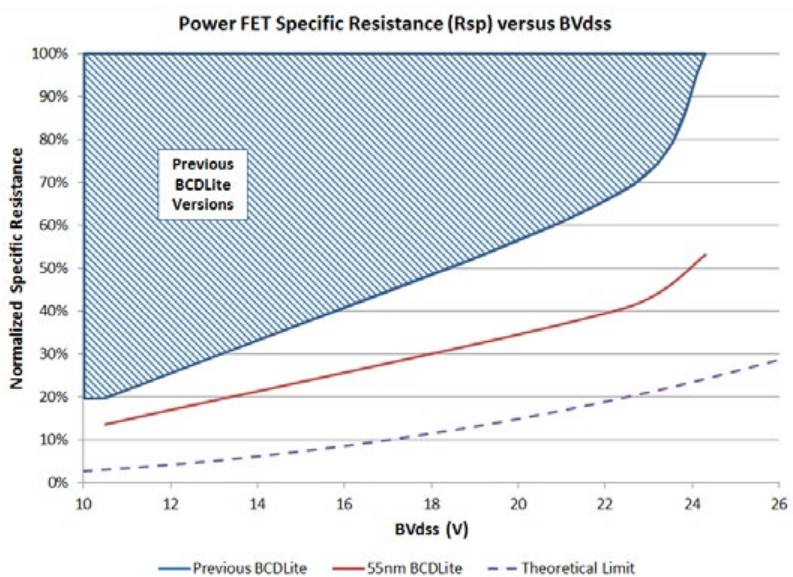
### Highlights

- 55nm feature size with leading analog and power devices up to 30V
  - + Manufactured in Singapore
  - + High volume production capability with world-class D0 (<0.04 def/in<sup>2</sup>) defect density
- Optimized for the needs of integrated analog, power and mixed-signal applications
  - + PMICs for mobile devices
  - + Audio amplifiers
  - + Sensor interface and signal conditioning
  - + Applications requiring dense digital, analog and power
- Robust IP set – reusable across the 55nm process platform
  - + PDK with both SPICE and SPECTRE statistical models
  - + Full Foundation and Complex IP Libraries
- Extensive services and supply chain support
  - + Regularly scheduled MPWs
  - + Layout database consolidation and mask assembly services
  - + Advanced packaging and test solutions including 2.5D and 3D

GLOBALFOUNDRIES 55nm BCDLite, part of the 55nm process technology platform, enables product development for applications requiring digital, RF, eFlash, ULP, automotive, power, analog and mixed signal capabilities.

Low and Ultra Low  $R_{DSon}$  Power FETs provide 30% to 47% reduction in on-resistance versus earlier BCDLite processes, an advantage in die cost and conversion efficiency by either reducing die area for a fixed target or reducing losses.

### Technology Overview



### Target Applications and Solutions

- Human Machine Interfaces (HMI)
- Audio Amplifiers with Embedded Digital Audio Processors
- Power Management Integrated Circuits (>30% reduction in  $R_{DSon}$  losses)

- 55nm 1.2V/2.5-3.3V CMOS Logic
- Iso- Low  $R_{DSon}$  8V-30V N/PDMOS, 5V ULR
- 5V ED PMOS and Non-isolated NMOS
- Vertical NPN and PNP Bipolar Transistors
- eFuse, OTP, and SP/DP SRAM Memory
- MOS, MOM, and MIM Caps, Varactor
- High Rs, TaN, P+ and N+ Poly Resistors
- -40°C to 150°C Temperature Range

## IP Overview

The 55nm LPx Platform IP portfolio includes a wide range of silicon-proven high performance, power-optimized solutions for a broad set of applications.

Foundation IP		
Standard Cell 8T	Standard Cell 9T	Standard Cell 12T
GPIO / ESD	PLL	ROM Compiler
SRAM Compiler/TCAM		
Interface IP		
DDR3/2	LPDDR3/2	HDMI 1.4
MIPI D-PHY	PCIe G1/2	I2C
USB 3.0/2.0	LVDS/subLVDS	SSTL
Memory		
SRAM Compiler	NVM: eFuse	NVM: OTP
ROM Compiler		

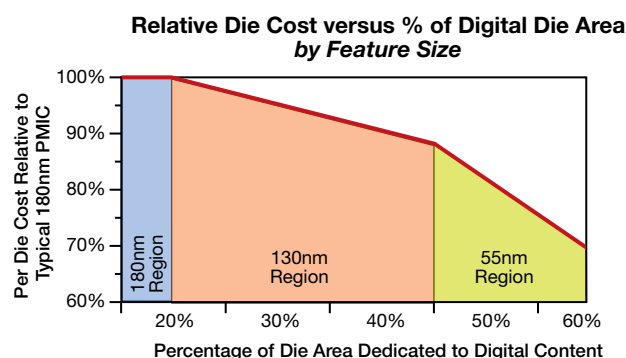
Contact GF for IP availability.

## 55nm Platform Extensions

55LPx	1.2V baseline logic process with foundation and complex IP reusable across platform
55 BCDLite	5V, 8V, 12V, 20V and 30V DMOS power FETs, analog & dense digital components for mobile apps
55ULP	SLVT/SHVT transistors and 0.9V SRAM—ideal for battery-powered, low voltage apps
55RF	RF features and models for Bluetooth, LTE XCVRs and other wireless communications

## 55nm BCDLite Cost Advantages

Many applications require dense digital with analog and power to enable integration or whole new functions. When the percentage of the digital content increases, it puts a premium on smaller feature sizes to keep die area and cost under control. The 55nm feature size in 55LPX and 55BCDLite helps to minimize die size and cost for higher digital content percentages, as shown in the chart below for a typical 12V PMIC.



## GLOBALSOLUTIONS® Design and Manufacturing Ecosystem

The GLOBALSOLUTIONS program is the sum of internal resources and external partners, combined into an ecosystem that efficiently enables the fastest time-to-volume for customers. This ecosystem includes partners in all aspects of design enablement and turnkey services, OPC and mask operations, and advanced capabilities in assembly solutions.

Libraries (Standard Cells, Memories)	Analog / Mixed-Signal	Processor IP	High-speed Interfaces
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Full Suite PDK, Reference Flow

55nm LPx and BCDLite Process Technology

SoC Packaging

2.5D and 3D Packaging



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