

# 130nm BCDLite® & BCD

## BCDLite & BCD Technologies

### Highlights

- 130nm feature size with industry-leading analog and power devices
  - + Manufactured in Singapore
  - + High volume production with D0 (<0.04 def/in<sup>2</sup>) defect density
- 130nm BCDLite Platforms for mobility and consumer applications
  - + Isolated 5V to 30V Low R<sub>ds(on)</sub> power devices for optimal trade-off between R<sub>sp</sub> performance and cost
- 130nm BCD Platforms for industrial and automotive power ICs
  - + World-class R<sub>sp</sub> with 5V to 85V options
  - + Automotive AEC Q100 Grade 1 and Grade 0 (contact GF for Availability) qualification
- 130nm BCDLite® and BCD eFlash for embedded power ICs
  - + Integrated with SST ESF1 1st generation SuperFlash technology
- 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

### The Right Technology for the Right Application™

GLOBALFOUNDRIES' BCDLite and BCD process technologies offer a modular platform architecture based on the company's low power logic process with integrated low and high voltage bipolar transistors, high voltage EDMOS/LDMOS transistors, precision analog passives, and non-volatile memory to offer superior cost and performance.

- BCDLite is tailored for cost-effective mobile/consumer applications: DC-DC, AC-DC, PMIC, Wireless and Quick Charging
- BCD high-temp rated transistors and rugged power devices are ideal for industrial and automotive applications
- High performance power and high-voltage transistors
- Integration of separate digital controllers and analog/power ICs into mixed-signal solutions

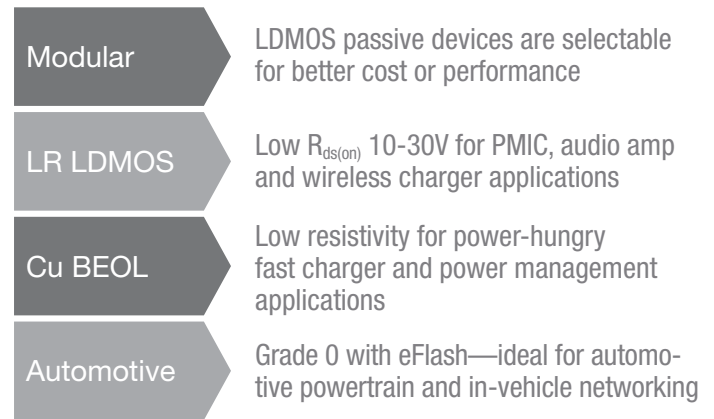
### Target Applications and Solutions

130nm BCDLite®	130nm BCD
Power Management	Industrial Power Management
Battery Management	Automotive Powertrain Management
Audio Amplifier	Networking & Connectivity
Wireless and Quick Charger	Wireless and High Voltage Chargers
NVM: Electrical Fuse	NVM: OTP
Power Over Ethernet (PoE)	
Smart Lighting	

## Technology Overview

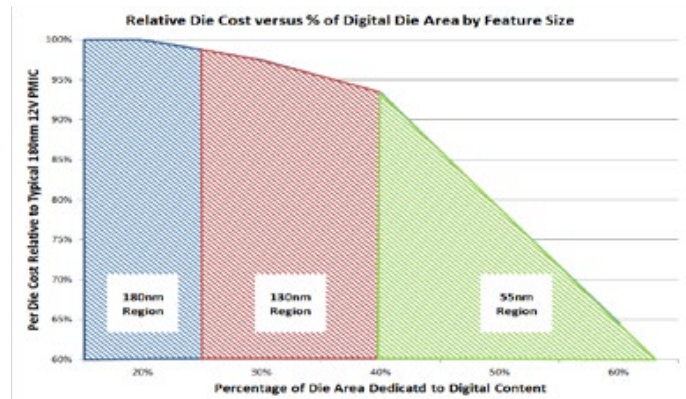
- 5V CMOS baseline with 1.5V LP CMOS
  - + 180nm BCD with N-buried layer and deep trench isolation
  - + 180nm BCDLite with N-epi and junction isolation
- 300mm with Cu BEOL
- High-performance power and high-voltage transistors
  - + Iso- and low  $R_{ds(on)}$  N/PLDMOS (10/12/16/20/24/30V) for 130nm BCDLite and 130nm BCD
  - + Low  $R_{ds(on)}$  N/PLDMOS (40-85V) for 130nm BCD
- HRES, Zener diode, MIM and MOM capacitors
- Automotive Grade 1 (130nm BCDLite) and Grade 0 (130nm BCD) options
- eFlash: >10k endurance
- Up to -40°C to 150°C temperature range

## Application-optimized Platform Modules



## BCDLite Cost-optimal Roadmap

Applications vary widely, ranging from full analog to integrated solutions. As the percentage of digital content increases, it puts a premium on smaller feature sizes to control die area and cost. GF offers a full range of feature sizes to help you find the right choice for each application. The chart below shows the impact of process choice on die cost as a function of feature size and digital content for a typical 12V PMIC.



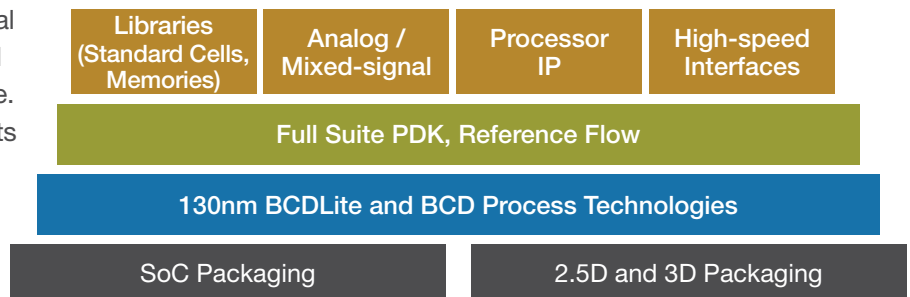
## IP Overview

Foundation IP		
Standard Cell 1.5V (7T, 9T)		GPIO (1.5V, 5V)
ESD	SRAM and ROM Compiler	
Memory		
SRAM Compiler	NVM: eFuse	NVM: OTP
NVM: eFlash		NVM: MTP
Design Enablement		
SPICE: BSIM4.5 with Sub Ckt		PDK: Cadence
DRC/LVS: Mentor	RCS: Mentor/Synopsys	

Contact GF for IP availability.

## GLOBALSOLUTIONS® Design and Manufacturing Ecosystem

GLOBALSOLUTIONS is the sum of our internal resources and ecosystem partners, combined to efficiently enable the fastest time-to-volume. This ecosystem includes partners in all aspects of design enablement and turnkey services, OPC and mask operations, and advanced capabilities in assembly solutions.



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