

130 BCDLite® & BCD

130nm 1.5V to 85V Process Technologies

Highlights

- New 130nm BCDLite Gen2 release affords up to 50% R_{sp} improvement and up to 30% greater logic density
- 130nm feature size with industry-leading analog and power devices
 - + Manufactured in Singapore
 - + High volume production with D0 (<0.04 def/in²) defect density
- 130nm BCDLite Platforms for mobility and consumer applications
 - + Isolated 5V to 40V Low R_{sp} power devices for optimal trade-off between performance and cost
- 130nm BCD Platforms for industrial and automotive power ICs
 - + World-class R_{sp} for 5V to 85V FETs
 - + 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

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.

- New Gen2 release with significant performance improvements
- 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
Power Over Ethernet (PoE)	
Smart Lighting	

Technology Overview

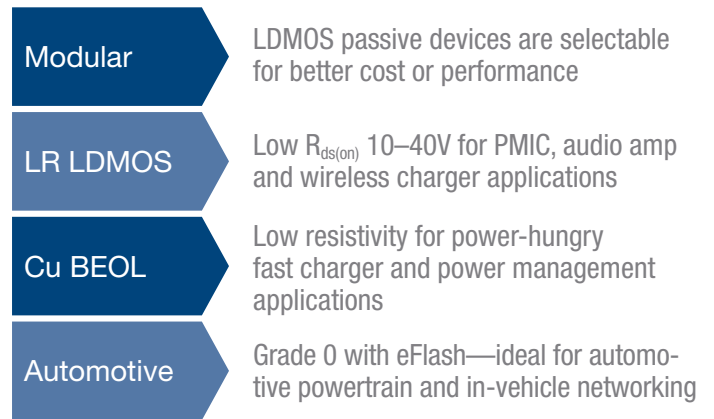
- 5V CMOS baseline with 1.5V LP CMOS
 - + 130nm BCD with N-buried layer and deep trench isolation
 - + 130nm BCDLite with N-epi and junction isolation
- 300mm with Cu BEOL
- High-performance power and high-voltage transistors
 - + Iso- and low $R_{ds(on)}$ N/PLDMOS (10/12/16/20/24/30V /40V) for 130nm 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
- T_j rating -40°C up to 175°C

IP Overview

Foundation IP	
Standard Cell 1.5V (6T, 7T, 9T)	GPIO (1.5V, 5V)
SRAM and ROM Compiler	ESD
Memory	
SRAM Compiler	NVM: eFuse
NVM: eFlash	NVM: OTP
	NVM: MTP
Design Enablement	
SPICE: BSIM4.5 with Sub Ckt	PDK: Cadence
RCS: Mentor/Synopsys	DRC/LVS: Mentor

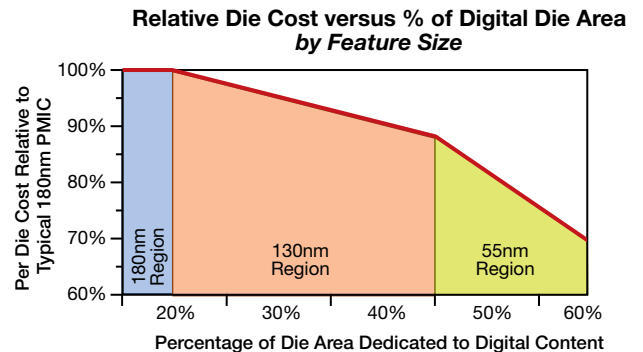
Contact GF for IP availability.

Application-optimized Platform Modules



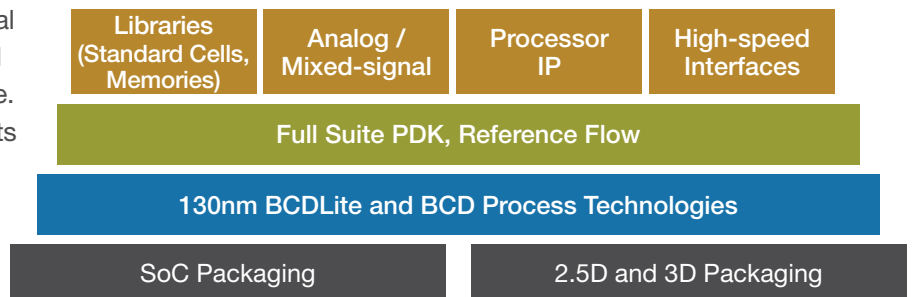
BCDLite Cost-optimal Roadmap

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.



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.



GLOBALFOUNDRIES®

2600 Great America Way, Santa Clara, CA 95054 USA
Tel: +1 408-462-3900 globalfoundries.com/contact-us

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