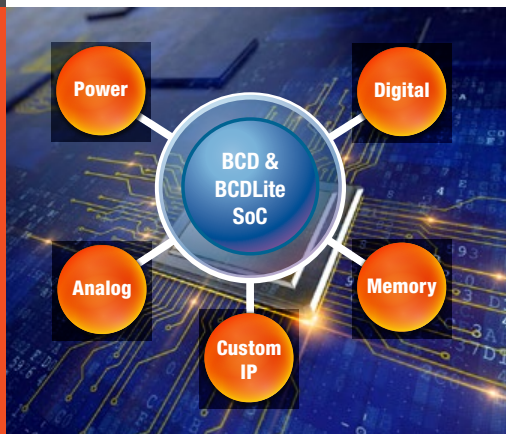




GLOBALFOUNDRIES®



180 BCDLite®

180nm 1.8V to 65V Process Technology

Highlights

- New 180nm BCDLite Gen2 release affords up to 50% Rsp improvement and up to 30% greater logic density
- 180nm feature size with industry-leading analog and power devices
 - + Manufactured in Singapore
 - + Mature technology on 8 inch wafers
 - + High volume production with D0 (<0.04 def/in²) defect density
- 180nm BCDLite Platform for mobility, industrial and automotive applications
 - + Isolated & non-isolated 10V to 65V low $R_{ds(on)}$ power devices for optimal trade-off between Rsp performance and cost
 - + ULL option provides low leakage for battery-powered consumer applications
- Comprehensive design ecosystem
 - + Full Foundation IP library and Memory Compiler
 - + PDK optimized for analog and power designs
 - + Robust DFM solution
- Extensive services and supply chain support
 - + Regularly scheduled MPWs
 - + Layout database consolidation and mask assembly services
 - + Optional automotive service package available
 - + Advanced packaging and test solutions

GLOBALFOUNDRIES' 180nm BCDLite process technology offers a modular platform architecture based on the company's low power logic process with superior cost and performance for analog and power applications, including low and high voltage bipolar transistors, high voltage LDMOS transistors, precision analog passives and eFuse/OTP/MTP non-volatile memory.

- New Gen2 release with significant performance improvements
- BCDLite process tailored for cost-effective mobile/consumer applications: DC-DC, AC-DC, PMIC, quick charger, motor control
- Selection of rich IP portfolio for the base logic process
- Competitive power FET $R_{ds(on)}$
- High performance power and high-voltage transistors
- Integration of separate digital controllers and analog/power ICs into mixed-signal solutions
- Analog- and power-focused PDK enablement

Target Applications and Solutions

- Power Management
- Battery Management
- DC-DC Converters
- Quick Charger
- Motor Control
- Smart Lighting

Technology Overview

- Modular technology platform
 - + 1.8V ULL (Ultra Low Leakage) and IC (Industry-Compatible) processes
 - + 5V and 6V CMOS baseline
 - + Competitive Rsp HV devices
 - + Hall sensor device
 - + High-voltage Schottky diode
 - + TaN precision resistor
 - + 9KÅ and 30KÅ top metal thickness
 - + eFuse, OTP, MTP non-volatile memory
- Automotive AEC Q100 Grade 1 qualified (on isolated 1.8V/6V up to 65V transistors)
- T_j rating from -40°C to 150°C

IP Overview

Foundation IP

1.8V Standard Cell: ULL 6T/7T/9T, IC 9T

5V & 6V Standard Cell: ULL & IC 9T

PLL	GPIO (1.8V, 5V)	I2C	ESD
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Memory

NVM: eFuse	NVM: OTP	NVM: MTP
SRAM Compiler	TCAM Compiler	ROM Compiler

Design Enablement

SPICE: BSIM4.5 with Sub Ckt	PDK: Cadence
DRC/LVS: Mentor	RCS: Mentor/Synopsys

Contact GF for IP availability.

Application-optimized Platform Modules

ULL & IC

Ultra Low Leakage and Industry-Compatible for high volume applications

MODULAR

Power and passive devices—options to optimize for cost or performance

LR LDMOS

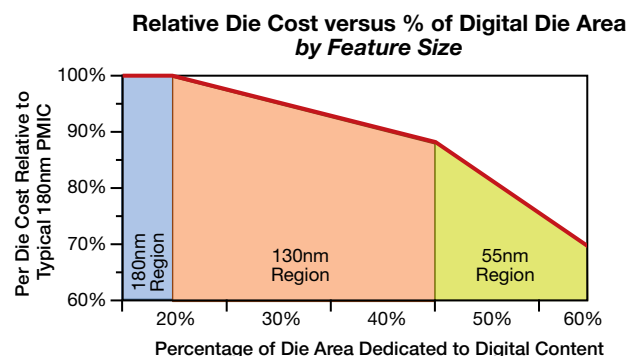
Low $R_{ds(on)}$ 10-30V FETs for PMIC, quick charger, power converter applications

Automotive Grade 1

Cost effective solution for in-car infotainment and connectivity applications

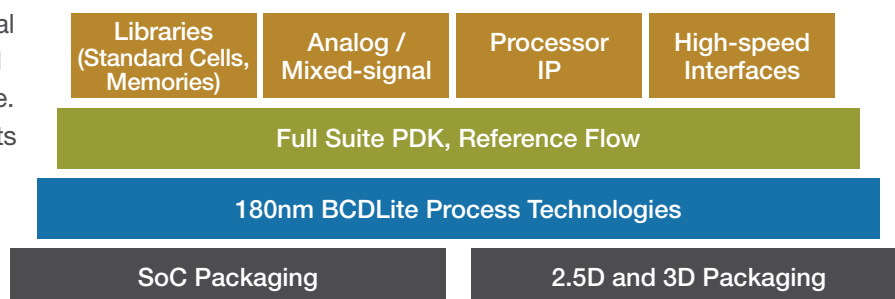
BCDLite Cost-optimal Roadmap

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.



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