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 \( R_{\text{ds(on)}} \)
• 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 $-40\degree C$ to $150\degree C$

IP Overview

<table>
<thead>
<tr>
<th>Foundation IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8V Standard Cell: ULL 6T/7T/9T, IC 9T</td>
</tr>
<tr>
<td>5V &amp; 6V Standard Cell: ULL &amp; IC 9T</td>
</tr>
<tr>
<td>PLL, GPIO (1.8V, 5V), I2C, ESD</td>
</tr>
<tr>
<td>Memory</td>
</tr>
<tr>
<td>NVM: eFuse, NVM: OTP, NVM: MTP</td>
</tr>
<tr>
<td>SRAM Compiler, TCAM Compiler, ROM Compiler</td>
</tr>
<tr>
<td>Design Enablement</td>
</tr>
<tr>
<td>SPICE: BSIM4.5 with Sub Ckt, PDK: Cadence</td>
</tr>
<tr>
<td>DRC/LVS: Mentor, RCS: Mentor/Synopsys</td>
</tr>
</tbody>
</table>

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.

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 information 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.

**Relative Die Cost versus % of Digital Die Area**

Per Die Cost Relative to Typical 180nm PMIC

Percentage of Die Area Dedicated to Digital Content

Assumptions: Normalized to 12" equivalent for a “typical 12V PMIC” with no Analog and Power area shrink.

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