TIDA’s C5505/15/35 portfolio contains some of the industry’s lowest power 16-bit digital signal processors (DSPs) with speeds of up to 150MHz. Equipment using this line benefit from longer battery life, high peripheral integration, large on-chip memory, and overall reduced system costs.

### Selection Matrix

#### High-Integration Power Management Unit
- **TPS65000**
  - Triple Output DC/DC PMU
  - Adj. Vout
  - Input voltage range: 2.3V-6.0V
  - One 600-mA DC/DC Converter
  - Two 300-mA LDOs
  - Spread-spectrum clocking

#### High-Efficiency Dual-Output Converter
- **TPS62400**
  - 400/600-mA Adj. Converter
  - Up to 95% efficiency
  - Adjustable output from 0.6V
  - Output voltage accuracy in PWM mode ±1%
  - 3x10-5FN

#### High-Efficiency Single Output Converter
- **TPS6223x**
  - 500-mA DC/DC Converter
  - Fixed Vout from 1.0V-3.3V
  - High PSRR (up to 90dB)
  - Power-save mode for light load currents
  - 12mm² solution size

#### Value Power Solution Dual Output
- **TLV7111333**
  - Dual, 200-mA Low Iq
  - Fixed Vout
  - Low dropout: 75mV to 100mW
  - Low Iq: 35µA
  - Stable with 0.1-µF capacitor
  - Small 1.5x1.5mm SON-6

#### Battery Power Buck Boost
- **TPS63001**
  - 800-mA DC/DC Converter
  - Input voltage range: 1.8V-5.5V
  - Up to 96% efficiency
  - Power-save mode for light load currents

#### Value Power Solution Single Output
- **TLV700xx**
  - 200-mA LDO
  - Fixed Vout
  - Stable with 1-F ceramic cap
  - Accuracy within ±2%
  - Fixed-output voltages from 1.2V to 3.6V
  - High PSRR: 68dB at 1kHz

#### Wide-Input Voltage Range
- **TPS62170**
  - 500-mA DC/DC Converter
  - Adj. Vout
  - 3-V to 17-V input voltage range
  - Fixed 2.25-MHz switching frequency
  - Low Iq = 17µA
  - 45mm² solution size

#### High-Input Voltage Range
- **TPS54060**
  - 500-mA DC/DC Converter
  - Adj. Vout
  - 3.5-V to 60-V input voltage range
  - High efficiency at light loads with a pulse skipping Eco-Mode™
  - 116-µA quiescent current
  - Intermediate bus input

### Device Specifications

<table>
<thead>
<tr>
<th>Device</th>
<th>$V_{IN}$ (V)</th>
<th>$I_{OUT}$ (mA)</th>
<th>Description</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPS62400</td>
<td>2.5 - 6.0</td>
<td>400/600</td>
<td>Dual adjustable 2.25-MHz step-down converter</td>
<td>3x3mm SON-10</td>
</tr>
<tr>
<td>TPS65000</td>
<td>2.3 - 6.0</td>
<td>600/300/300</td>
<td>Triple output PMU, 2.25-MHz converter with dual LDOs</td>
<td>3x3mm QFN</td>
</tr>
<tr>
<td>TPS6223x</td>
<td>1.0 - 3.3</td>
<td>500</td>
<td>Up to 94% efficiency, step-down converter</td>
<td>1x1.5mm SON-6</td>
</tr>
<tr>
<td>TPS62170</td>
<td>1.8 - 5.5</td>
<td>200/200</td>
<td>Dual output, low Iq LDO</td>
<td>1.5x1.5mm WSON</td>
</tr>
<tr>
<td>TPS54060</td>
<td>3.5 - 60</td>
<td>500</td>
<td>High efficiency at light loads with a pulse skipping Eco-Mode™ step-down</td>
<td>3x3mm SON PowerPAD™</td>
</tr>
</tbody>
</table>

For samples, evaluation boards and reference designs, please check [power.ti.com](http://power.ti.com), [www.ti.com/processorpower](http://www.ti.com/processorpower) and [www.ti.com/pm](http://www.ti.com/pm)
Tiny, High Efficiency: TPS6223x

The TPS6223x regulator is a tiny DC/DC step-down converter (1-mm x 1.5-mm x 0.6-mm QFN) for applications requiring small solution size and high efficiency (up to 94%). The converter supplies not only the MCU, but also the overall application while increasing the runtime. The high PSRR (up to 90dB), excellent AC and transient load regulation make the devices ideal for systems requiring tight noise control.

EVM available: TPS62230EVM-370
Samples (3.3-V version): TPS62237

Recommended PCB layout needs less than 12mm².

High Integration PMU: TPS65000

The TPS65000 is a step-down converter operating at 2.25MHz. It is currently the most cost- and board-space effective PMU family available in TI’s portfolio and ideal for use in portable/battery powered end applications due to its low quiescent current (typically 23µA).

This part combines a single step-down with two LDOs which can be operated anywhere from 1.6V to 6.0V. This allows operation to come from the step-down converter or the main battery. This device works well for low-noise applications due to the ability to be forced into a fixed frequency PWM via a pin (Enable and PG pins are also present).

Example of highly integrated solution for the C55xx DSPs.

TPS65000: Efficiency vs Output Current.
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