MPC18730
Multi Channel DC/DC Converter

**DESCRIPTION**

The 18730 Power Management IC (PMIC) regulates five independent output voltages from either a single cell Li-Ion (2.7 V to 4.2 V input range) or from a single cell Ni-MH or dry cell (0.9 V to 2.2 V input range).

The PMIC includes 2 DC-DC converters and 3 low drop out (LDO) linear regulators. The output voltage for each of the 5 output voltages is set independently through a 3-wire serial interface. The serial interface also configures the PMIC's versatile start-up control system, which includes multiple wakeup, sleep, standby, and reset modes to minimize power consumption for portable equipment.

In single cell Li-Ion applications two DC-DC converters are configured as buck (step-down) regulators. In single cell Ni-MH or dry cell applications, one DC-DC converter is configured as a boost (step-up) regulator, and the other as buck-boost regulator. The DC-DC converters' output voltages have set ranges:
- 1.613 V to 3.2 V at up to 120 mA
- 0.805 V to 1.5 V up to 100 mA

**APPLICATIONS**

- Portable Music Player
- MP3 Players
- PDAs
- Portable Data Loggers
- Battery Powered Consumer Products
- Portable Audio and Video
- Voice Over IP Phones
- Portable Media Players
- Drives Multiple Functions in Next Generation Portable Devices
FEATURES
• Operates from single cell Li-Ion, Ni-MH, or Alkaline
• 2 DC-DC Converters
• 3 Low Drop Regulators
• Serial Interface Sets Output Voltages
• 4 Wake Inputs
• Low Current Standby Mode
• Pb-Free Packaging Designated by Suffix Code EP

PERFORMANCE

<table>
<thead>
<tr>
<th>TYPICAL VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Input Voltage</td>
</tr>
<tr>
<td>3.5-3.6V (Li-Ion), 1.2V (Ni-MH), 1.5V (Dry cell)</td>
</tr>
<tr>
<td>DC/DC Converter VO2 Output</td>
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<tr>
<td>1.15 V (Max Current 80 mA)</td>
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<tr>
<td>Low Drop Regulator SREG1-3</td>
</tr>
<tr>
<td>2.8 V (Max Current 60 mA (SREG1,3), 80 mA (SREG2))</td>
</tr>
<tr>
<td>Gate Voltage VG</td>
</tr>
<tr>
<td>6.0 V ((VGSEL1,VGSEL2)=(0,0))</td>
</tr>
<tr>
<td>Operating Temperature</td>
</tr>
<tr>
<td>-10°C ≤ T_A ≤ 65°C</td>
</tr>
</tbody>
</table>

CUSTOMER BENEFITS
• Offers flexibility and user-programmable features
• Reduces PC board space
• Flexibility of battery cell type
• Two DC-DC converters select step up or step down with minimum external part changes
• Operates from 0.9 V to 2.2 V (single cell Ni-MH or dry cell) or 2.7 V to 4.2 V (single cell Li-Ion) input range
• Low current standby mode and wake up by WAKE keys
QUESTIONS

• Are you looking for a programmable voltage power management IC?
• Do you need to reduce PC board size?
• Are you looking for an easy to design application that uses a single cell Li-ion, Ni-MH, or alkaline battery?
• Do you need a long operation life?

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Device</th>
<th>Temperature Range (TA)</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPC18730EP</td>
<td>-10°C to 65°C</td>
<td>64 QFN</td>
</tr>
<tr>
<td>MPC18730EPR2</td>
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Data Sheet Order Number  MPC18730

Contact Sales for Evaluation Kit Availability