Motorola PowerPC™ Processors

Motorola PowerPC CPUs deliver the processing speed required by high performance systems in internetworking, communications infrastructure, telecommunications systems, computing and more. Motorola integrated PowerPC processors offer cost-effective, highly integrated solutions for the full spectrum of networking, transportation and industrial control, and consumer applications. For additional information on any of the processors listed below, please visit the PowerPC website at http://motorola.com/PowerPC.

### Motorola PowerPC™ CPUs

<table>
<thead>
<tr>
<th></th>
<th>PowerPC 603e™</th>
<th>MPC740™</th>
<th>MPC745™</th>
<th>MPC750™</th>
<th>MPC755™</th>
<th>MPC7400</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Speed Internal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-133 MHz</td>
<td>200 MHz</td>
<td>200 MHz</td>
<td>200 MHz</td>
<td>200 MHz</td>
<td>200 MHz</td>
<td>200 MHz</td>
</tr>
<tr>
<td>133 MHz</td>
<td>200 MHz 266 MHz 300 MHz</td>
<td>233 MHz 266 MHz 300 MHz</td>
<td>300 MHz 350 MHz</td>
<td>300 MHz 350 MHz</td>
<td>300 MHz 350 MHz</td>
<td>300 MHz 350 MHz</td>
</tr>
<tr>
<td>300 MHz</td>
<td>300 MHz 266 MHz 300 MHz</td>
<td>333 MHz 266 MHz 300 MHz</td>
<td>350 MHz 400 MHz</td>
<td>350 MHz 400 MHz</td>
<td>400 MHz 400 MHz</td>
<td>400 MHz 500 MHz</td>
</tr>
<tr>
<td><strong>Bus Interface</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64 &amp; 32-bit modes</td>
<td>64 bits</td>
<td>64 bits</td>
<td>64 bits</td>
<td>64 bits</td>
<td>64 bits</td>
<td>64 bits</td>
</tr>
<tr>
<td>L1 Cache</td>
<td>16 KB inst 16 KB data</td>
<td>32 KB inst 32 KB data</td>
<td>32 KB inst 32 KB data</td>
<td>32 KB inst 32 KB data</td>
<td>32 KB inst 32 KB data</td>
<td>32 KB inst 32 KB data</td>
</tr>
<tr>
<td><strong>Backside L2 Cache Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Dissipation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical/Maximum</td>
<td>4.2W/5.3W</td>
<td>4.0W/6.0W</td>
<td>5.7W/7.9W</td>
<td>4.2W/6.0W</td>
<td>TDB</td>
<td>TDB</td>
</tr>
<tr>
<td>Maximum Frequency</td>
<td>400 MHz</td>
<td>400 MHz</td>
<td>333 MHz</td>
<td>333 MHz</td>
<td>400 MHz</td>
<td>400 MHz</td>
</tr>
<tr>
<td><strong>Package</strong></td>
<td>255 CBGA</td>
<td>255 CBGA</td>
<td>255 CBGA</td>
<td>255 CBGA</td>
<td>255 CBGA</td>
<td>255 CBGA</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td>0.5µm LDM</td>
<td>0.25µLUM</td>
<td>0.25µLUM</td>
<td>0.22µLUM</td>
<td>0.29µLUM</td>
<td>0.22µLUM</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>3.3V</td>
<td>2.5V int</td>
<td>2.6V int</td>
<td>2.6V int</td>
<td>2.6V int</td>
<td>2.6V int</td>
</tr>
<tr>
<td><strong>SPECint95 (est.)</strong></td>
<td>4.2 @ 133 MHz</td>
<td>11.5 @ 333 MHz</td>
<td>12.0 @ 333 MHz</td>
<td>12.1 @ 333 MHz</td>
<td>12.1 @ 333 MHz</td>
<td>12.3 @ 333 MHz</td>
</tr>
<tr>
<td><strong>SPECfp95 (est.)</strong></td>
<td>7.4 @ 133 MHz</td>
<td>11.5 @ 333 MHz</td>
<td>15.7 @ 333 MHz</td>
<td>17.0 @ 333 MHz</td>
<td>17.1 @ 333 MHz</td>
<td>21.5 @ 333 MHz</td>
</tr>
<tr>
<td><strong>Other Performance</strong></td>
<td>188 MIPS 32 MB</td>
<td>488 MIPS 350 MHz</td>
<td>640 MIPS 350 MHz</td>
<td>733 MIPS 400 MHz</td>
<td>917 MIPS 500 MHz</td>
<td>1.0W</td>
</tr>
</tbody>
</table>

* see hardware spec for operation at lower frequencies

### Motorola PowerPC™ Integrated Processors

<table>
<thead>
<tr>
<th></th>
<th>8260</th>
<th>8240</th>
<th>860P</th>
<th>860</th>
<th>855T</th>
<th>850</th>
<th>823</th>
<th>555</th>
<th>509</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum Frequency</strong></td>
<td>200 MHz</td>
<td>250 MHz</td>
<td>80 MHz</td>
<td>80 MHz</td>
<td>80 MHz</td>
<td>80 MHz</td>
<td>80 MHz</td>
<td>80 MHz</td>
<td>80 MHz</td>
</tr>
<tr>
<td><strong>Drystone Mips</strong></td>
<td>280 (200 MHz)</td>
<td>352 (250 MHz)</td>
<td>105 (80 MHz)</td>
<td>105 (80 MHz)</td>
<td>105 (80 MHz)</td>
<td>105 (80 MHz)</td>
<td>105 (80 MHz)</td>
<td>105 (80 MHz)</td>
<td>105 (80 MHz)</td>
</tr>
<tr>
<td><strong>Microprogrammable Module</strong></td>
<td>CPM</td>
<td>PCI</td>
<td>CPM</td>
<td>CPM</td>
<td>CPM</td>
<td>CPM</td>
<td>CPM</td>
<td>2 TPUs</td>
<td>2 TPUs</td>
</tr>
<tr>
<td><strong>Cache (instruction/data)</strong></td>
<td>16K/16K</td>
<td>16K/16K</td>
<td>16K/16K</td>
<td>4K/4K</td>
<td>4K/4K</td>
<td>2K/1K</td>
<td>2K/1K</td>
<td>448K Flash</td>
<td>4K I cache</td>
</tr>
<tr>
<td><strong>Translation Lookaside Buffers (TLBs)</strong></td>
<td>64-entry</td>
<td>64-entry</td>
<td>32-entry</td>
<td>32-entry</td>
<td>32-entry</td>
<td>8-entry</td>
<td>8-entry</td>
<td>8-entry</td>
<td>8-entry</td>
</tr>
<tr>
<td><strong>Floating Point Unit (FPU)</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Parallel</strong></td>
<td>64 bits</td>
<td>64 bits</td>
<td>64 bits</td>
<td>59 bits</td>
<td>59 bits</td>
<td>59 bits</td>
<td>53 bits</td>
<td>53 bits</td>
<td>53 bits</td>
</tr>
<tr>
<td><strong>Typical Power Dissipation</strong></td>
<td>2.5W (133 MHz)</td>
<td>3.0W (150 MHz)</td>
<td>500 mW (50 MHz)</td>
<td>500 mW (50 MHz)</td>
<td>500 mW (50 MHz)</td>
<td>110 mW (25 MHz)</td>
<td>10.0W (400 MHz)</td>
<td>400 mW (400 MHz)</td>
<td>2.5W (133 MHz)</td>
</tr>
<tr>
<td><strong>Miscellaneous Peripherals</strong></td>
<td>2 SMICs, 1 PCI, 1 SPI</td>
<td>2 SMICs, 1 PCI, 1 SPI</td>
<td>2 SMICs, 1 PCI, 1 SPI</td>
<td>2 SMICs, 1 PCI, 1 SPI</td>
<td>2 SMICs, 1 PCI, 1 SPI</td>
<td>2 SMICs, 1 PCI, 1 SPI</td>
<td>2 SMICs, 1 PCI, 1 SPI</td>
<td>2 SMICs, 1 PCI, 1 SPI</td>
<td>12 Chip Selects</td>
</tr>
</tbody>
</table>

©2000 Motorola, Inc. All rights reserved. Printed in the U.S.A. Motorola and the are registered trademarks and Digital DNA and the Digital DNA logo are trademarks of Motorola, Inc. PowerPC, the PowerPC logo, PowerPC 603e, PowerPC 740, and PowerPC 750 are trademarks of International Business Machines Corporation and used under license therefrom.

For More Information On This Product, Go to: www.freescale.com
Motorola PowerPC™ Microprocessor Strategy

Core-Based Design
- MPU
- Integrated

Technology:
- Design
- Manufacturing

Customer Focus
- Products
- Lifecycle

Increased Integration/Advanced Process Technology
- 6xx, 7xx, 7xxx — high performance microprocessor targeting computing and high-end embedded
- 8xx, 8xxx — integrated processor targeting the Communications and Consumer markets
- 5xx, 5xxx — integrated processor targeting the Transportation market