**DESCRIPTION**

Our **digital I/O interface ICs** are low-power solutions that reduce heat generation. Wide operating voltages provide design flexibility, while robust protection with extensive diagnostics reduces downtime. A proprietary process allows an absolute voltage rating in the 60V to 70V range to increase system robustness. Low on-resistance reduces power dissipation and heat for improved system reliability with operation in a wide -40°C to +125°C temperature range. Small packages with a high level of integration enable compact, high-density digital I/O modules.

Diagnostics include:
- Thermal Warning and Shutdown
- Supply Undervoltage Lockout
- Open-Wire Detection
- Undervoltage and Overvoltage Detection
- Overcurrent Detection
- LED Drivers for Visual Fault and Output State Indication

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Digital In/Out</th>
<th>Interface</th>
<th>Channels</th>
<th>Pins/Package</th>
<th>Size</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX22190</td>
<td>DI</td>
<td>SPI</td>
<td>8</td>
<td>32/TQFN-CU</td>
<td>5mm x 5mm</td>
<td>Low Power, Wide Supply Range, Integrated Diagnostics</td>
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<tr>
<td>MAX22191</td>
<td>DI</td>
<td>Single DI</td>
<td>1</td>
<td>6/SOT23</td>
<td>2.9mm x 2.8mm</td>
<td>Low Power, Wide Supply Range, Sink and Source Capability</td>
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<tr>
<td>MAX22192</td>
<td>DI</td>
<td>SPI</td>
<td>8</td>
<td>70/GQFN-CU</td>
<td>6mm x 10mm</td>
<td>Integrated Isolation, Wide Supply Range, Integrated Diagnostics</td>
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<tr>
<td>MAX22195</td>
<td>DI</td>
<td>Parallel</td>
<td>8</td>
<td>32/TQFN-CU</td>
<td>5mm x 5mm</td>
<td>Low Power, Wide Supply Range, Integrated Diagnostics</td>
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<tr>
<td>MAX14900E</td>
<td>DO</td>
<td>Parallel/Serial</td>
<td>8</td>
<td>48/TQFN-EP</td>
<td>7mm x 7mm</td>
<td>Push-Pull</td>
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<tr>
<td>MAX14912/13</td>
<td>DO</td>
<td>Parallel/Serial</td>
<td>8</td>
<td>56/QFN</td>
<td>8mm x 8mm</td>
<td>Push-Pull, Fast and SafeDemag™, Surge Protection</td>
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<td>MAX14914</td>
<td>DIO</td>
<td>Pin</td>
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<td>16/TQFN</td>
<td>4mm x 4mm</td>
<td>Push-Pull, Fast and SafeDemag, Surge Protection</td>
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<tr>
<td>MAX14915</td>
<td>DO</td>
<td>Serial</td>
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<td>48/FC2QFN</td>
<td>6mm x 6mm</td>
<td>High Side, Fast Demag, Surge Protection</td>
</tr>
</tbody>
</table>
FEATURED PRODUCTS

**MAX14912/MAX14913**  
Octal High-Speed, High-Side Switch/Push-Pull Drivers

The MAX14912/MAX14913 have eight 640mA smart high-side switches that can be configured as push-pull drivers for high-speed switching. The propagation delay from input to switching of the high-side/low-side drivers is 1μs (max). Each high-side driver has a low on-resistance of 230mΩ (max) at 500mA load current at TA = +125°C.

RELATED RESOURCES

- Industrial Digital I/O Interface ICs
- Industrial Digital I/O Design Guide
- MAXREFDES212: Go-IO Industrial IoT Reference Design
- MAX14912EVKIT: Evaluation Kit for the MAX14912 and MAX14913
- App Note 6635 FAQ: The MAX22190 Octal Industrial Digital Input Device with Diagnostics
- App Note 6798: Guidelines to Implement CRC Algorithm for the MAX22190 and MAX22192 Octal Industrial Digital Input with Diagnostics
- App Note 6339: Digital Output Drivers: Understanding Key Features and Challenges
- App Note 6307: Switching Inductive Loads with Safe Demagnetization
- App Note 6644: Frequently Asked Questions (FAQs) About the MAX22191 Parasitically Powered, Industrial Digital Input
- App Note 6002: CRC Programming for the MAX14900E Octal, High-Speed Industrial Switch
- App Note 6633: Guidelines to Implement CRC Programming for the MAX14915 Octal, Industrial, High-Side Switch