EDGE CARD SYSTEMS

SPEEDS TO 56 Gbps • EDGE RATE® CONTACTS • VARIETY OF OPTIONS

VARIETY OF OPTIONS:

- **Pitch**: 0.50 mm, 0.60 mm, 0.635 mm, 0.80 mm, 1.00 mm, 1.27 mm, 2.00 mm
- **Pin Count**: 10 – 300 total positions available
- **Orientation**: Vertical, right-angle, edge mount, pass-through
- **Options**: Power/signal combo, press-fit tails, PCI Express®, rugged weld tabs, locks and latches

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0.60 mm PITCH SOCKETS

• Differential pair Edge Rate® contacts
• Compliant to SFF-TA-1002: x4 (IC), x8 (2C), x16 (4C and 4C+)
• Mates with .062" (1.60 mm) thick cards
• PCI Express® 4.0 and 5.0 capable; and Gen-Z™ compliant

0.80 mm PITCH SOCKETS

• Up to 200 high-speed Edge Rate® contacts
• Mates with .062" (1.60 mm) and .093" (2.36 mm) thick cards
• Power/signal combo (HSEC8-PV)
• PCI Express® 3.0 and 4.0 capable; Gen 4.0 and 5.0 capable differential pair socket (HSEC8-DP)

1.00 mm PITCH SOCKETS

• Edge Rate® contact system for decreased crosstalk
• 20 – 140 positions
• Mates with .062" (1.60 mm) thick cards
• PCI Express® 3.0 and 4.0 capable; 5.0 capable differential pair socket in development (HSEC1-DP)
0.50 mm PITCH HIGH-SPEED, LOW-COST SOCKETS

- Justification beam enables use of standard PCB tolerance
- Up to 300 total I/Os
- PCIe® 4.0 capable
- Mates with .062" (1.60 mm) thick cards

Beam ensures card and body are flush

0.635 mm & 0.80 mm PITCH MICRO SOCKETS

- Up to 140 total I/Os
- Vertical and right-angle; edge mount (MEC8)
- Press-fit tails available (MEC8-VP)
- Mates with .062" (1.60 mm) thick cards

Staggered press-fit tails

1.00 mm, 1.27 mm & 2.00 mm PITCH SOCKETS

- Up to 140 total I/Os
- Right-angle and edge mount available (MEC1)
- Optional weld tabs, alignment pins and polarization
- Mates with .062" (1.60 mm) and .093" (2.36 mm) thick cards

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PCI EXPRESS® 3.0 & 4.0 SOCKETS

- 1.00 mm pitch in x1, x4, x8 or x16
- PCIe® 3.0 (PCIE) and 4.0 (PCIE-LP) solutions
- Low profile version for space savings; through-hole tails in development
- PCI Express® Jumpers available
- Mates with .062" (1.60 mm) thick cards

PCI EXPRESS® 5.0 SOCKETS

- Differential pair system
- 1.00 mm pitch
- Design-in today for future-proof data rates
- Mates with standard PCIe® expansion cards
- 1, 4, 8 and 16 PCI Express® 5.0 link options
- Currently in development

1.00 mm PITCH THROUGH BOARD SOCKETS

- 40 to 80 I/Os per pair
- Mounts in pairs on same or opposite sides for easy signal routing
- BeCu contacts with large deflection
- PCI Express® 3.0 solution
- Mounting flexibility for variable mating card thickness and pass-through applications

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## METROLOGY

<table>
<thead>
<tr>
<th></th>
<th>MEC5</th>
<th>HSEC6</th>
<th>MEC6</th>
<th>MEC8</th>
<th>HSEC8</th>
<th>HSEC8-DP</th>
<th>HTEC8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitch</td>
<td>0.50 mm</td>
<td>0.60 mm</td>
<td>0.635 mm</td>
<td>0.80 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Pin Counts</td>
<td>60-300</td>
<td>56, 84, 140, 168</td>
<td>20-140</td>
<td>18-200</td>
<td>16, 24, 32, 40, 64, 112</td>
<td>40-200</td>
<td></td>
</tr>
<tr>
<td>Linear Density (circuits/mm)</td>
<td>3.30</td>
<td>2.35, 2.36, 2.46, 2.42</td>
<td>2.67</td>
<td>2.19</td>
<td>2.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Card Thickness</td>
<td>.062&quot;</td>
<td>.062&quot;</td>
<td>.062&quot; &amp; .093&quot;</td>
<td>.062&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orientations Available</td>
<td>V, RA</td>
<td>V</td>
<td>V, RA, EM, PF</td>
<td>V, RA, EM, PT</td>
<td>V</td>
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</table>

## MECHANICAL PERFORMANCE

<table>
<thead>
<tr>
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<th>HSEC8-DP</th>
<th>HTEC8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Normal Force per Circuit (GRF)</td>
<td>50</td>
<td>96</td>
<td>100</td>
<td>60</td>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wipe (mm)</td>
<td>1.10</td>
<td>1.20</td>
<td>2.00</td>
<td>2.10</td>
<td>2.00</td>
<td>2.48</td>
<td>1.91</td>
</tr>
<tr>
<td>Mating/Unmating Force per Circuit (GRF)</td>
<td>30/25</td>
<td>46</td>
<td>50/30</td>
<td>40/20</td>
<td>TBD</td>
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</table>

## ELECTRICAL PERFORMANCE (LOW FREQUENCY)

<table>
<thead>
<tr>
<th></th>
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<th>HTEC8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Carrying Capacity (Amps)</td>
<td>1.5 (2 pins)</td>
<td>0.8 (12 pins)</td>
<td>2.4 (2 pins)</td>
<td>1.8 (4 pins)</td>
<td>2.8 (2 pins)</td>
<td>2.7 (2 pins)</td>
<td>3.0 (2 pins)</td>
</tr>
<tr>
<td>Working Voltage (VAC)</td>
<td>125</td>
<td>300</td>
<td>195</td>
<td>185</td>
<td>240</td>
<td>235</td>
<td>215</td>
</tr>
<tr>
<td>PCIe® Compatibility</td>
<td>4.0</td>
<td>5.0</td>
<td>2.0</td>
<td>2.0</td>
<td>4.0</td>
<td>5.0</td>
<td>4.0</td>
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## ELECTRICAL PERFORMANCE (HIGH FREQUENCY)

<table>
<thead>
<tr>
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<th>HSEC8</th>
<th>HSEC8-DP</th>
<th>HTEC8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designed to be Impedance Matched</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
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<tr>
<td>Channel Performance Metric (Gbps)</td>
<td>56 PAM4</td>
<td>14</td>
<td>25</td>
<td>28</td>
<td>56 PAM4</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Characteristic Impedance (Single-Ended, 30 ps rise time, Ohms)</td>
<td>42-55</td>
<td>85</td>
<td>46-58</td>
<td>41-56</td>
<td>43-58</td>
<td>Differential Pair</td>
<td></td>
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## ENVIRONMENTAL PERFORMANCE

<table>
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<th>HSEC8-DP</th>
<th>HTEC8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durability (Cycles)</td>
<td>100</td>
<td>25</td>
<td>100</td>
<td>1,000</td>
<td>100</td>
<td></td>
<td></td>
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<tr>
<td>MFG Tested</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Au is the only interface finish available. Recommended operating environment is a controlled environment.

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**All products are tested to a standard amplitude and frequency; this parameter gives an average resistance change as a result of that standardized test.**

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec's specifications which are subject to change without notice.