Features

1. The floating design
   Structure provides for an mis-alignment of ±0.6mm in both X and Z directions in 0.5mm pitch product. (Fig.1)

2. A double-beam contact structure
   The independent double beam contact structure provides self-cleaning feature, ensuring high-contact reliability. (Fig.2)

3. Current capacity : 0.7A/pin
   The FX22 features a high current capacity of 0.7A/pin relative to its 0.5mm pitch.

4. Effective mating length of 1.5mm
   The signal contacts have effective contact lengths of 2.0mm and 1.5mm, which provide sufficient margin on the mating stroke.

5. Low connector height
   The compact structure and low connector height fits well into areas as small as 5mm spacing, allowing for higher density mounting. (Fig.3)

6. Self-alignment and self-guiding structure
   Guide posts enable self-alignment and ensure a secure connection.

Floating range: ±0.6mm

A double-beam contact structure

Mated connector dimensions

Receptacle : FX22-***S-0.5SH

Header : FX22-**P-0.5SH
FX22 Series 0.5mm pitch Board-to-Board connectors with floating structure

**Product Specifications**

<table>
<thead>
<tr>
<th>Items</th>
<th>Specifications</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contact resistance</td>
<td>70mΩ max.</td>
<td>100mA (DC or 1000Hz)</td>
</tr>
<tr>
<td>2. Insulation resistance</td>
<td>100MΩ min.</td>
<td>100V DC.</td>
</tr>
<tr>
<td>3. Withstanding voltage</td>
<td>No flashover or breakdown.</td>
<td>150V AC for 1min.</td>
</tr>
<tr>
<td>4. Mating Cycles</td>
<td>80mΩ max.</td>
<td>50 times insertions and extractions.</td>
</tr>
<tr>
<td>5. Vibration resistance</td>
<td>No electrical discontinuity for more than 1µs.</td>
<td>Frequency: 10 to 55 to 10Hz, approx 5 min Single amplitude: 0.75mm, 10 cycles for 3 axial directions.</td>
</tr>
<tr>
<td>6. Shock resistance</td>
<td>No electrical discontinuity for more than 1µs.</td>
<td>490m/s², duration of pulse 11ms at 3 times for 3 both axial directions.</td>
</tr>
<tr>
<td>7. Moisture resistance</td>
<td>80mΩ max Insulation resistance: 100MΩ min.</td>
<td>Exposed at 40 ± 2°C, 90~95%, 96h.</td>
</tr>
<tr>
<td>8. Temperature cycle</td>
<td>80mΩ max Insulation resistance: 100MΩ min.</td>
<td>Temperature: -55 → 85°C Time: 30 → 30 min, for 5 cycles</td>
</tr>
</tbody>
</table>

Note 1: Includes temperature rise caused by current flow.
Note 2: The term "storage" here refers to products stored for a long period prior to board mounting and use.

**Materials / Finish**

<table>
<thead>
<tr>
<th>Part</th>
<th>Material</th>
<th>Finish</th>
<th>UL standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Header</td>
<td>PA</td>
<td>Black</td>
<td>UL94V-0</td>
</tr>
<tr>
<td>Receptacle</td>
<td>LCP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Header</td>
<td>Copper alloy</td>
<td>Contact area: Gold plated</td>
<td></td>
</tr>
<tr>
<td>Receptacle</td>
<td></td>
<td>Mounting area: Gold plated</td>
<td></td>
</tr>
<tr>
<td>Metal fitting</td>
<td>Brass</td>
<td>Tin plated</td>
<td></td>
</tr>
</tbody>
</table>

**Product Number Structure**

Refer to the chart below when determining the product specifications from the product number. Please select from the product numbers listed in this catalog when placing orders.

- **Right-angle receptacle**
  - **FX22 - 80 S - 0.5 SH**
    - Series name: FX22
    - Number of contacts
    - Connector type S: Receptacle type
    - P: Header type
    - Contact pitch: 0.5mm
    - Product style SH: Right-angle type

- **Right-angle header**
  - **FX22 - 80 P - 0.5 SH**
    - Series name: FX22
    - Number of contacts
    - Connector type S: Receptacle type
    - P: Header type
    - Contact pitch: 0.5mm
    - Product style SH: Right-angle type
### Right-angle receptacle
**[ FX22-**S-0.5SH ]**

![Image]

- **Part No.**
  - FX22-40S-0.5SH
  - FX22-50S-0.5SH
  - FX22-60S-0.5SH
  - FX22-80S-0.5SH

- **HRS No.**
  - 572-3100-6
  - 572-3101-9
  - 572-3102-1
  - 572-3103-4

- **No. of contacts**
  - 40
  - 50
  - 60
  - 80

- **Dimensions (mm):**
  - A: 28.5
  - B: 19.5
  - C: 27.25
  - D: 40

- **Unit:** mm

### Right-angle header
**[ FX22-**P-0.5SH ]**

![Image]

- **Part No.**
  - FX22-40P-0.5SH
  - FX22-50P-0.5SH
  - FX22-60P-0.5SH
  - FX22-80P-0.5SH

- **HRS No.**
  - 572-3000-4
  - 572-3002-7
  - 572-3003-0
  - 572-3004-2

- **No. of contacts**
  - 40
  - 50
  - 60
  - 80

- **Dimensions (mm):**
  - A: 28.5
  - B: 19.5
  - C: 27.25
  - D: 40

- **Unit:** mm
**Recommended PCB layout dimensions**
(PCI thickness : t = 1.6mm / Stencil thickness : t = 0.12mm)

### Right-angle receptacle

[FX22-**S-0.5SH]

- **Contact No.1**
  - PCB edge: 2.6±0.05
  - 4-Ø1.6 1/3 (Land)
  - 4-Ø1.2 5/3 (Through hole)

<table>
<thead>
<tr>
<th>Unit : mm</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 contacts</td>
<td>19.5</td>
<td>27.25</td>
</tr>
<tr>
<td>50 contacts</td>
<td>24.5</td>
<td>32.25</td>
</tr>
<tr>
<td>60 contacts</td>
<td>29.5</td>
<td>37.25</td>
</tr>
<tr>
<td>80 contacts</td>
<td>39.5</td>
<td>47.25</td>
</tr>
</tbody>
</table>

### Right-angle header

[FX22-**P-0.5SH]

- **Contact No.1**
  - PCB edge: 2.6±0.05
  - 4-Ø1.6 1/3 (Land)
  - 4-Ø1.2 5/3 (Through hole)

<table>
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<td>40 contacts</td>
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<td>24.5</td>
<td>32.25</td>
</tr>
<tr>
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<td>37.25</td>
</tr>
<tr>
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<td>39.5</td>
<td>47.25</td>
</tr>
</tbody>
</table>
**Embossed tape packaging dimensions**

- **Right-angle receptacle**

  ![Reel dimension diagram](image)

  **Unit : mm**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX22-40S-0.5SH</td>
<td>44</td>
<td>40.4</td>
<td>20.2</td>
<td>44.4</td>
<td>50.4</td>
</tr>
<tr>
<td>FX22-50S-0.5SH</td>
<td>56</td>
<td>52.4</td>
<td>26.2</td>
<td>56.4</td>
<td>62.4</td>
</tr>
<tr>
<td>FX22-60S-0.5SH</td>
<td>72</td>
<td>68.4</td>
<td>34.2</td>
<td>72.4</td>
<td>78.4</td>
</tr>
<tr>
<td>FX22-80S-0.5SH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  (00) Embossed packaging : 700pcs/reel

- **Right-angle header**

  ![Reel dimension diagram](image)

  **Unit : mm**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<tr>
<td>FX22-40P-0.5SH</td>
<td>44</td>
<td>40.4</td>
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<td>FX22-80P-0.5SH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  (00) Embossed packaging : 500pcs/reel
Recommended Temperature Profile

This temperature profile is based on the setting conditions shown below and is for reference only. For individual applications, the temperature profile may vary in accordance with the conditions. Please confirm the profile before mounting.

![Temperature profile graph]

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Preheating time (150 to 200°C)</th>
<th>Soldering time (220°C min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>150°C</td>
<td>(90 to 120 sec)</td>
<td></td>
</tr>
<tr>
<td>200°C</td>
<td></td>
<td>260°C</td>
</tr>
<tr>
<td>220°C</td>
<td>(5 to 10 sec)</td>
<td></td>
</tr>
</tbody>
</table>

(Peak temperature: 250°C max.)

Recommended Temperature Profile

- **Cleaning conditions**
  - **Organic Solvent-based cleaning**
    - **Solvent type**
      | Room temperature cleaning | Heated cleaning |
      |--------------------------|-----------------|
      | IPA (Isopropyl alcohol)   | Yes             |
      |                          | Yes             |
  - **Water based cleaning**
    - When using water based cleaning agents (including terpene, and alkali saponifiers), pay special attention to how the cleaning agent will react to specific metals and plastics before selecting one of them. Various cleaning agent manufacturers publish reaction tables for their cleaning agents. Do not leave connectors with moisture remaining on them.
  - **Caution when washing**
    - The electrical performance may deteriorate if the flux or cleaning detergent is left on the connector after the cleaning. Check thoroughly to ensure that there is no residue left on any of the surfaces.

- **Precautions**
  - Avoid supporting the PCB only by the connectors. Please make sure to support the PCBs with screws, bolts, or other types of anchors as the primary means of support.
  - When using low profile connectors, care should be taken not to use excessive prying or rotating forces during mating/unmating operations. This could cause damage and contact failure. Please handle with care.

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http://www.hirose.com
http://www.hirose-connectors.com

The characteristics and the specifications contained herein are for reference purpose. Please refer to the latest customer drawings prior to use. The contents of this catalog are current as of date of 03/2016. Contents are subject to change without notice for the purpose of improvements.