■ Features

1. Contact pitch : 0.8mm
2. Stacking Height : 22mm Min.
   - Adjustable height by selecting different PCB interposer heights.
3. Pin Varieties : 40/60/80/100/120
4. Floating Range : 0.6mm Max.
   - in X and Y directions
   - Floating range by using two FX27 connectors is ±1.2mm max.
5. High-speed Transmission : 2.5Gbps (PCle-Gen.1)
6. Customizable interposer PCB
7. Current capacity : 0.5A/pin
8. Pick & Place Mounting (suction tape attached as standard)
9. Large guide post for excellent mating performance
   - Easy mating operation due to large self-alignment range.

Stacking height : 22mmMIN

Single floating : ±0.6mm
Double floating : ±1.2mm

(Ex.) Equipping with Electrical chips
(Ex.) Power Source Board Use

Customizable PCB interposer

Taper : 0.7mm

Large self-alignment

In cases where the application will demand a high level of reliability, such as automotive, please contact a company representative for further information.
## Product Specifications

<table>
<thead>
<tr>
<th></th>
<th>Specifications</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ratings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Current</td>
<td>0.5A</td>
<td></td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>100V AC</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-55 to 105°C (Note 1)</td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-10 to 60°C (Note 2)</td>
<td></td>
</tr>
<tr>
<td>Operating/storage</td>
<td>85% or less relative humidity</td>
<td></td>
</tr>
<tr>
<td>humidity range</td>
<td>(No dew condensation is allowed)</td>
<td></td>
</tr>
</tbody>
</table>

### Items Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contact resistance</td>
<td>30mΩ Max. (Note 3)</td>
<td>Measured at 100mA</td>
</tr>
<tr>
<td>2. Insulation resistance</td>
<td>1,000MΩ or more</td>
<td>Measured at 250V DC</td>
</tr>
<tr>
<td>3. Withstanding Voltage</td>
<td>No flashover or breakdown</td>
<td>Energized at 300V AC for 1 minute</td>
</tr>
<tr>
<td>4. Mating durability</td>
<td>Contact Resistance 40mΩ Max. (Note 3)</td>
<td>100 Insertion/Extraction cycles</td>
</tr>
<tr>
<td>5. Vibration proof</td>
<td>No electrical discontinuity of 1µ or more</td>
<td>Frequency 10-55Hz, half amplitude 0.75mm, 10 cycles in each of the 3-axis directions each for 5 minutes per cycle</td>
</tr>
<tr>
<td>6. Shock resistance</td>
<td>No electrical discontinuity of 1µ or more</td>
<td>Acceleration of 490m/s²; duration 11ms, sine half-wave, 3 cycles in each of the 3 axes each in both directions.</td>
</tr>
<tr>
<td>7. Moisture resistance</td>
<td>Contact Resistance 40mΩ max. (Note 3)</td>
<td>Insulation Resistance 1,000MΩ max.</td>
</tr>
<tr>
<td>8. Temperature cycle</td>
<td>Contact Resistance 40mΩ max. (Note 3)</td>
<td>Insulation Resistance 1,000MΩ max.</td>
</tr>
<tr>
<td></td>
<td>Temperature -55 → 85°C</td>
<td>Time 30 → 30min. for 5 cycles</td>
</tr>
</tbody>
</table>

**Note 1:** Includes the temperature rise caused by current flow.

**Note 2:** The term storage refers to the long-term storage condition of unused products prior to mounting on PCB.

**Note 3:** Contact resistance for 1 connector. Does not include the conductor resistance of the PCB interposer when mated.

## Materials / Finish

<table>
<thead>
<tr>
<th>Part</th>
<th>Materials</th>
<th>Finish/Remarks</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulator</td>
<td>Polyamide resin</td>
<td>Black</td>
<td>UL94V-0</td>
</tr>
<tr>
<td>Contact</td>
<td>Copper alloy</td>
<td>Contact part : gold plating</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mounting part : gold plating</td>
<td></td>
</tr>
<tr>
<td>Solder tab</td>
<td>Brass</td>
<td>Reflow tin plating</td>
<td></td>
</tr>
</tbody>
</table>

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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.

- Straight receptacle
  FX27 - 120 S - 0.8 SV

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series Name</td>
<td>FX27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of pos.</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connector type</td>
<td>S: Receptacle type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact pitch</td>
<td>0.8mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product type</td>
<td>SV: Straight type</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

High-speed transmission property
- Pin assignment
  The following pin arrangement is recommended to match the 100Ω differential impedance and to contain cross-talk.

- Insertion Loss

- Intra-pair skew
● Return loss

Connector 1

Connector 2

● Near End Cross-Talk (NEXT)

Connector 1

Connector 2

FX27-**S-0.8SV(②) ※

FX27-**S-0.8SV(①) ※

Simulation Tool : HFSS Ver.2016.1.0
Standard Impedance : 100Ω

※Simulation performed using the same FX27 connector for connector 1 and connector 2
FX27 Series 0.8mm Pitch Floating Card Edge Connector

Floating Range

X Direction: ±0.6mm Max.
Y Direction: ±0.6mm Max.

Fastened portion
Floating portion

Can have a floating range up to ±1.2mm Max. when using 2 FX27 connectors

Number of contacts variations

40pos. 60pos. 80pos. 100pos. 120pos.

Fastened portion
Floating portion

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Product Dimensions

Straight Receptacle

<table>
<thead>
<tr>
<th>Part No.</th>
<th>HRS No.</th>
<th>No. of contacts</th>
<th>Packaging Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX27-40S-0.8SV</td>
<td>577-1002-0000</td>
<td>40</td>
<td>300/RL</td>
</tr>
</tbody>
</table>
FX27 Series 0.8mm Pitch Floating Card Edge Connector

<table>
<thead>
<tr>
<th>Part No.</th>
<th>HRS No.</th>
<th>No. of contacts</th>
<th>Packaging Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX27-80S-0.8SV</td>
<td>577-1004-0 00</td>
<td>80</td>
<td>300/RL</td>
</tr>
</tbody>
</table>
FX27 Series 0.8mm Pitch Floating Card Edge Connector

<table>
<thead>
<tr>
<th>Part No.</th>
<th>HRS No.</th>
<th>No. of contacts</th>
<th>Packaging Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX27-100S-0.8SV</td>
<td>577-1005-0 00</td>
<td>100</td>
<td>150/RL</td>
</tr>
</tbody>
</table>
FX27 Series 0.8mm Pitch Floating Card Edge Connector

<table>
<thead>
<tr>
<th>Part No.</th>
<th>HRS No.</th>
<th>No. of contacts</th>
<th>Packaging Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX27-120S-0.8SV</td>
<td>577-1001-0 00</td>
<td>120</td>
<td>150/RL</td>
</tr>
</tbody>
</table>
### FX27 Series

#### 0.8mm Pitch Floating Card Edge Connector

#### Embossed Packaging Diagram

<table>
<thead>
<tr>
<th>Part No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX27-40S-0.8SV</td>
<td>56</td>
<td>52.4</td>
<td>26.2</td>
<td>382</td>
<td>102</td>
<td>55.9</td>
<td>56.4</td>
<td>62.4</td>
</tr>
<tr>
<td>FX27-60S-0.8SV</td>
<td>72</td>
<td>68.4</td>
<td>34.2</td>
<td>382</td>
<td>102</td>
<td>71.9</td>
<td>72.4</td>
<td>78.4</td>
</tr>
<tr>
<td>FX27-80S-0.8SV</td>
<td>72</td>
<td>68.4</td>
<td>34.2</td>
<td>382</td>
<td>102</td>
<td>71.9</td>
<td>72.4</td>
<td>78.4</td>
</tr>
<tr>
<td>FX27-100S-0.8SV</td>
<td>88</td>
<td>84.4</td>
<td>42.2</td>
<td>332</td>
<td>152</td>
<td>87.9</td>
<td>88.4</td>
<td>94.4</td>
</tr>
<tr>
<td>FX27-120S-0.8SV</td>
<td>88</td>
<td>84.4</td>
<td>42.2</td>
<td>332</td>
<td>152</td>
<td>87.9</td>
<td>88.4</td>
<td>94.4</td>
</tr>
</tbody>
</table>

Unit : mm
Recommended PCB Interposer Dimensions

CL indicates the center of 17.25

40S

P=0.8±0.03

17.25±0.1

15.2±0.05

0.55±0.05

1.6±0.16

0.45

60S

P=0.8±0.03

25.25±0.1

23.2±0.05

0.55±0.05

1.6±0.16

0.45

CL indicates the center of 36.45

80S

P=0.8±0.03

36.45±0.1

34.4±0.05

20.8±0.05

16.8±0.05

1.6±0.1

2.4±0.1

0.55±0.05

1.6±0.16

0.45

100S

P=0.8±0.03

44.45±0.1

42.4±0.05

24.8±0.05

20.8±0.05

1.6±0.1

2.4±0.1

0.55±0.05

1.6±0.16

0.45

CL indicates the center of 52.45

120S

P=0.8±0.03

52.45±0.1

50.4±0.05

28.8±0.05

24.8±0.05

1.6±0.1

2.4±0.1

0.55±0.05

1.6±0.16

0.45

Customer supplied PCB interposer.
FX27 Series
0.8mm Pitch Floating Card Edge Connector

**Recommended Temperature Profile**

Polarity Mark : No.1

FX27-***S-0.8SV : ①
Ex. For 60pos : 
No.60/2+1=No.31

FX27-***S-0.8SV : ②
Ex. For 60pos : 
No.60/2+1=No.31

(Peak Temperature : 250°C Max.)

<Applicable conditions>
- Test PCB Dimensions : 110x60x1.6mm
- Material : Glass epoxy
- Solder composition : Sn-3Ag-0.5Cu
- Flux content : 11wt%
- Metal mask thickness : 0.12mm, 0.15mm
- Number of reflow times : 2 times max.

*The temperature profile is a reference under the condition of the above settings. Temperature profile may change depending on the conditions such as solder paste types, manufacturers, PCB size, and other soldering materials. We confirmed there is no issue on the 2nd reverse mounting, but please use after thoroughly confirming the mounting state.*

**Cleaning Conditions**

- **Cleaning with organic solvent**
  
<table>
<thead>
<tr>
<th>Solvent</th>
<th>Normal Temperature Cleaning</th>
<th>Heated cleaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPA (Isopropyl alcohol)</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

- **Cleaning with water**
  When water-type cleaning agents (terpene, alkaline saponification agents) are used, select cleaning agents based on the ‘table of influence’ on metals and resins issued by the cleaning agent manufacturer.
  Caution : Do not leave with any water content left.

- **Cleaning Precautions**
  When cleaning the parts with organic solvents and water-type agents, if flux or cleaning agents remain in the connector, it could cause the deterioration of electric performance.
  Please be sure to check if adequate cleaning has been completed.

**Usage Precautions**

- **Pin Assignment**
  When the connector is connected as shown in the figure on the left, polarity marks 1 and 2 of the FX27-***S-0.8SV are inverted.
  Please pay attention to board circuit pin assignment.
Securing Boards
Using only connectors is not recommended. The board is designed to be secured with a spacer. If the board is supported only by the connector, an excessive load may be applied to the connector which may result in damage or contact failure. Take measures to secure the board other than using the connector.

Mating Precautions
- The self-alignment range is ±0.7mm in the X and Y directions. Insert the connector straight in without applying excessive load during mating.

- It is recommended that the connector be inserted and removed straight without tilting the connector.

Misalignment allowance in Mated Condition (Floating Amount)
Since this connector has a floating structure, the maximum allowable PCB misalignment amount is ±0.6mm in the X and Y directions when mated. When two FX27 connectors are used for stacking connections, they have a double floating capability, allowing for a maximum PCB misalignment of ±0.12mm in the X and Y directions. However, this product cannot be used to absorb misalignment when there are constant changes due to vibration, etc. Be sure to secure the boards after mating. The floating operation can be repeated 100 times max. based on the connector durability (insertion/extraction times).

Supplementary
Friction Lock during Initial Insertion/Extraction
Ex. FX27-60S-0.8SV

The notched sides of the PCB interposer remain when removed. Connector Lock-hooking design in the notches of the interposer.