In case of consideration for using Automotive equipment/device which demand high reliability, kindly contact our sales window correspondents.

**Embosed Carrier Tape Dimension (2:1)**

- **24mm Max**
  - (1.45) [5]
  - (0.3) [6]

- **32mm Min**
  - (1.45) [7]
  - (3.1) [8]

**Reel Dimension (Free)**

- (Ø 1.3)
- (L ±0.1)
- (Ø Ø.8)
- (M ±0.1)

**Leader-Trailer Dimension (Free)**

- 480mm(Ø8) (Leader)
- 30mm(Ø8) (Trailer Empty)

**Note:** Per reel: 5000 connectors.
12 Refer to JIS C 0606 and JEC 60286-3
(Packaging of components for automatic handling.)
<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>CODE NUMBER</th>
<th>NUMBER OF CONTACTS</th>
<th>DIMENSION OF CONNECTOR, FPC, PCB MOUNTING PATTERN AND STENCIL</th>
<th>DIMENSION OF DRAWING FOR PACKING</th>
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This connector features small size and back flip design, requiring delicate and careful handling.

To prevent connector/FPC breakage and contact failure (wetting failure, FPC pattern breakage, etc.), read through the instructions shown below and handle the connector properly.

Each value indicating here are for reference and may differ from standard value.

[Operation and Precautions]

1. Initial condition
   Actuator does not have to be operated before inserting FPC as the connector is delivered with the actuator opened.

   [Caution]
   - Do not close the actuator before inserting FPC. Closing the actuator without FPC could make the contact gap smaller, which could increase the FPC insertion force. Do not insert FPC or operate actuator before mounting.

2. How to insert FPC
   Insert the FPC into the connector opening horizontally to the PCB plane.
   Insert it properly to the very end.

   [Caution]
   - Insert the FPC with the actuator opened.
   - Do not twist the FPC to up and down, right and left or an angle.

3. FPC insertion check (for using contacts on the top for FPC pattern only applicable to FH454)
   Incorrect operation modes are prevented by visual check comparing positions of housing opening end line and FPC pattern line.

   [Caution]
   - Do not insert the FPC at an angle and/or stop it before insertion is completed.
4. How to lock

Apply load to rotate the actuator by 90 degree after inserting the PRC.

**Caution:**
- The actuator rotates around the rotational axis as shown below.
- Do not rotate the actuator to the counter direction.
- Do not pinch or pick the actuator to lift.
- Operate the actuator by hand without using sharp tool such as Tweezers.
- To close the actuator operate at the center of the actuator.
- To close the actuator do not operate the actuator at one end only.
- Do not apply excess force to the housing during the operation.
Precautions for design:

1. During FPC wiring, ensure that stress is not applied directly to the connector. Do not bend the FPC excessively near the connector during use, as it may cause contact failure or FPC breakage.

2. Keep a sufficient FPC insertion space in the stage of the layout in order to avoid incorrect FPC insertion. Appropriate FPC length and component layout are recommended for assembly ease. Too short FPC length makes assembly difficult.

3. Follow the recommended PCB mounting patterns, stencil opening design, and the FPC design.

4. Make adjustments with the FPC manufacturer for FPC bending performance and wire breakage.

5. Keep spaces for the actuator movement and its operation for PCB design and component layout.

FPC routing after connection:

Depending on a FPC rounding, a load is applied to the connector, and a contact failure may occur. To prevent a failure, take the following notes into consideration during mechanism design.

Cautions:
- Avoid applying forces to FPC in vertical or horizontal directions.
- In addition, avoid pulling up and down on the FPC.
- When fixing FPC after FPC cabling, avoid pulling FPC and route the wire FPC with slack.
- In this regard, the stiffener is parallel to the PCB.
- Do not mount other components touching to the FPC underneath the FPC stiffener.

Instructions for mounting on the PCB:

Warp of PCB
- WARN: Warp of the PCB as much as possible.
- Lead compensation including reinforced metal fittings is 0.1 mm or less. Too much warp on the PCB may result in a short-circuit failure.

Flexible board design:
- Make sure to put a stiffener on the backside of the flexible board. We recommend a glass epoxy material with the thickness of 0.3 mm MIN.

负载 to Connector:
- Do not add 0.5N or greater external force when insert or pull and place the connector or it may get broken.
- In addition, do not insert the FPC or operate the connector before mounting.

Heat temperature profile:
- Apply a lower temperature profile within the specified conditions.
- In specific applications, the actual temperature may vary depending on solder paste type, volume/thickness, and PCB size/thickness.
- Consult your solder paste and equipment manufacturer for specific recommendations.

Instructions for PCB handling after mounting the connector:

Load to PCB:
- Avoid breaking a large PCB into several pieces.
- Screw the PCB.
- Avoid the handling described above so that no force is exerted on the PCB during the assembly process.
- Otherwise, the connector may become defective.

Warp of PCB:
- Ensure a warp of 0.1 mm wide PCB should be 0.5 mm or less.
- The warp of PCB has stress on connector and the connector may become defective.

Other instructions:

Instructions on manual soldering:
Follow the instructions shown below when soldering the connector manually during repair work etc.

1. Do not perform manual soldering with the FPC inserted into the connector.

2. Do not heat the connector excessively. Be very careful not to let the soldering iron contact any parts other than connector leads. Otherwise, the connector may be deformed or melt.

3. Do not supply excessive solder or flux. If excessive solder or flux is supplied on the terminals, solder or flux may adhere to the contacts or rotating parts of the actuator, resulting in poor contact or a rotation failure of the actuator. Supplying excessive solder to the metal fittings may hinder actuator rotation resulting in breakage of the connector.

<INSTRUCTION MANUAL (4)>

EDC-159714-50-04
FH34SRJ+X5-0.5SHC50D
CL580