The FM connector, a miniature connector with a thickness of only 3.0mm, was developed to connect flexible flat cables (FFC) or flexible printed circuits (FPC) with a lead pitch of 1.0mm to printed circuit boards. It is ideally suited for connections inside high-density equipment or between mechanical units. The contact is constructed to ensure a stable connection and high reliability even under vibration and impact. Connection is easy with a simple snap-in action.

Features

- **Compact**
  Having no complicated cam or slide mechanism, this connector is small with a mounting height of only 4.4mm and a width of 3.0mm.

- **Double-sided contact**
  This connector has highly resilient phosphor bronze contacts, each of which has two independent mating spring members that ensure continuity even when subjected to severe vibration. Because each of the contacts simultaneously mates with both sides of the FFC or FPC, the engineer has greater freedom in designing his circuitry.

- **Simple snap-in action**
  The FFC or FPC are securely connected by simply inserting their leads into the connector.

- **Surface mount model (SMT)**
  This connector is also available in a surface mount configuration. Its housing is made of heat resistant resin so that it is not adversely affected during reflow soldering. Because of its tiny size and ability to be surface mounted, this connector meets the demand for high-density mounting of components inside electronic products.

Specifications

- **Current rating:** 0.5A AC, DC
- **Voltage rating:** 50V AC, DC
- **Temperature range:** -25˚C to +85˚C (including temperature rise in applying electrical current)
- **Contact resistance:** Initial value/20m Ω max.
  After environmental testing/30m Ω max.
- **Insulation resistance:** 800M Ω min.
- **Withstanding voltage:** 500V AC/minute
- **Applicable FFC and FPC:**
  - Conductor pitch/1.0mm
  - Conductor width/0.7mm
  - Mating part thickness/0.33±0.03 mm
- **Applicable PC board thickness:** 0.8 to 1.6mm

*RoHS compliant products are published.*
*Refer to “General Instruction and Notice when using Terminals and Connectors” at the end of this catalog.*
*Contact JST for details.*

Standards

- Recognized E60389
- Certified LR20812
### Through-hole type connector

<table>
<thead>
<tr>
<th>Circuits</th>
<th>Model No. of Through-hole type</th>
<th>Dimensions (mm)</th>
<th>Qty / box</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Top entry type</td>
<td>Side entry type</td>
<td>A</td>
</tr>
<tr>
<td>3</td>
<td>03FM-1.0BT</td>
<td>03FM-1.0ST</td>
<td>2.0</td>
</tr>
<tr>
<td>4</td>
<td>04FM-1.0BT</td>
<td>04FM-1.0ST</td>
<td>3.0</td>
</tr>
<tr>
<td>5</td>
<td>05FM-1.0BT</td>
<td>05FM-1.0ST</td>
<td>4.0</td>
</tr>
<tr>
<td>6</td>
<td>06FM-1.0BT</td>
<td>06FM-1.0ST</td>
<td>5.0</td>
</tr>
<tr>
<td>7</td>
<td>07FM-1.0BT</td>
<td>07FM-1.0ST</td>
<td>6.0</td>
</tr>
<tr>
<td>8</td>
<td>08FM-1.0BT</td>
<td>08FM-1.0ST</td>
<td>7.0</td>
</tr>
<tr>
<td>10</td>
<td>10FM-1.0BT</td>
<td>10FM-1.0ST</td>
<td>9.0</td>
</tr>
<tr>
<td>11</td>
<td>11FM-1.0BT</td>
<td>11FM-1.0ST</td>
<td>10.0</td>
</tr>
<tr>
<td>12</td>
<td>12FM-1.0BT</td>
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</tr>
</tbody>
</table>

### SMT type connector on embossed-tape

<table>
<thead>
<tr>
<th>Circuits</th>
<th>Model No.</th>
<th>Dimensions (mm)</th>
<th>Qty / reel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Top entry type</td>
<td>Side entry type</td>
<td>A</td>
</tr>
<tr>
<td>3</td>
<td>–</td>
<td>03FM-1.0SP-1.9-TF</td>
<td>2.0</td>
</tr>
<tr>
<td>4</td>
<td>04FM-1.0BP-TF</td>
<td>04FM-1.0SP-1.9-TF</td>
<td>3.0</td>
</tr>
<tr>
<td>5</td>
<td>05FM-1.0BP-TF</td>
<td>05FM-1.0SP-1.9-TF</td>
<td>4.0</td>
</tr>
<tr>
<td>6</td>
<td>06FM-1.0BP-TF</td>
<td>06FM-1.0SP-1.9-TF</td>
<td>5.0</td>
</tr>
<tr>
<td>7</td>
<td>07FM-1.0BP-TF</td>
<td>07FM-1.0SP-1.9-TF</td>
<td>6.0</td>
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<tr>
<td>8</td>
<td>08FM-1.0BP-TF</td>
<td>08FM-1.0SP-1.9-TF</td>
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<tr>
<td>10</td>
<td>10FM-1.0BP-TF-A</td>
<td>10FM-1.0SP-1.9-TF</td>
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</tr>
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<td>12</td>
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### Material and Finish

(Through-hole type) Contact: Phosphor bronze, copper-undercoated, tin-plated (reflow treatment)
Housing: PBT, UL94V-0

(SMT type) Contact: Phosphor bronze, copper-undercoated, tin-plated (reflow treatment)
Housing: PPS, UL94V-0

RoHS compliance This product displays (LF)/(SN) on a label.


**Taping specifications**

### Top entry type

**Feeding direction**

**Carrier tape**

**Cover tape**

**Cover tape leader**

**(5 to 8 circuits)**

**Feeding direction**

**Carrier tape**

**Cover tape**

**Cover tape leader**

**The end part**

**Connector mounting part**

**160min.**

**400min.**

**Leader part**

**100min.**

### Side entry type

**Feeding direction**

**Carrier tape**

**Cover tape**

**Cover tape leader**

**(3 to 8 circuits)**

**Feeding direction**

**Carrier tape**

**Cover tape**

**Cover tape leader**

**The end part**

**Connector mounting part**

**120min.**

**240min.**

**Leader part**

**180min.**

### Circuits

<table>
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<tr>
<th>Circuits</th>
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<th>Reel dimensions (mm)</th>
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<tbody>
<tr>
<td></td>
<td>F</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>4</td>
<td>5.5</td>
<td>4.75</td>
<td>12.0</td>
</tr>
<tr>
<td>5 to 8</td>
<td>7.5</td>
<td>6.75</td>
<td>16.0</td>
</tr>
<tr>
<td>10</td>
<td>11.5</td>
<td>10.75</td>
<td>24.5</td>
</tr>
</tbody>
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**Note:**

1. Specifications conform to JIS C 0806. The tape width, connector recess dimensions, etc. are determined by the number of circuits and external shape of the connector to be loaded.
2. Specifications are subject to change without prior notice.

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</tr>
<tr>
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**FM CONNECTOR**

**Lead section dimensions of FFC and FPC**

(FPC)

- **Base layer**
  - 1.0 ± 0.1
- **Conductor**
  - 1.0(N+1) ± 0.12
- **Reinforcing layer**
  - 1.0 ± 0.15
- **Film cover layer**
  - 0.7 ± 0.1
- **3.0 min.**

(FFC)

- **Base layer**
  - 1.0 ± 0.1
- **Conductor**
  - 1.0(N+1) ± 0.12
- **Reinforcing layer**
  - 1.0 ± 0.15
- **Film cover layer**
  - 0.33 ± 0.02
- **0.33 ± 0.02**

**Note:**

- **N** — Number of circuits

**PC board layout and Assembly layout**

**Top entry type**

(Through-hole type) (viewed from soldering side)

- **Circuit No.1**
  - 2.0 ± 0.05
  - 1.0 ± 0.05
  - 0.75 ± 0.05
  - 0.9 min.
  - 2.0 min.

(SMT type) (viewed from component side)

- 1.0 ± 0.05
- 1.5 min.
- 0.6 ± 0.05
- 2.0
- 3.0
- 4.4
- 2.9
- 4.4

**Side entry type**

(Through-hole type) (viewed from soldering side)

- **Circuit No.1**
  - 2.0 ± 0.05
  - 1.0 ± 0.05
  - 0.75
  - 0.9 min.
  - 2.0 min.

(SMT type) (viewed from component side)

- 1.0 ± 0.05
- 1.5 min.
- 0.6 ± 0.05
- 1.9
- 4.4
- 2.0
- 3.0
- 4.4

**Note:**

1. Tolerances are non-cumulative: ±0.05mm for all centers.
2. Hole dimensions differ according to the kind of PC board and piercing method. The dimensions above should serve as a guideline.
3. It is recommended that surface mount connectors be secured using thermosetting resin or something similar. Contact JST for details.