The FF12 series back-lock LIF connector allows for design flexibility by incorporating both an upper contact and a lower contact to interface with a 0.15mm thick FPC at a 0.3mm pitch. The low profile connector has a 0.9mm height, making it one of the smallest board mounted FPC ZIF connectors on the market.

**APPLICATIONS**

Mobile Phone, Digital Camera, MP3 Player, Portable PC, PDA and other Portable Device

**FEATURE**

- This connector utilize both an upper and lower contact to allow for all FPC insertion directions.
- DDK’s original cam-type back-lock system provides reliable operation and ensures retention from inadvertent upward pulling of the FPC.
- The FF12 connector has a low height of 0.9mm.
- Back-lock mechanism ensures retention from inadvertent from upward pulling of the FPC.
- These ZIF connectors are delivered with the lock lever opened for maximum production efficiency.
- This connector is available in contact counts ranging from 6 pins to 65 pins.
- Contacts utilize a nickel barrier to prevent solder wicking.
- The housing and lock lever are made of heat-resistant resin making possible lead-free reflow soldering.
- FF12 ZIF connectors are delivered in a tape and reel package for automated machine processes.

**SPECIFICATIONS**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>50V AC (r.m.s.)</td>
</tr>
<tr>
<td>Rated Current</td>
<td>0.2A / Contact</td>
</tr>
<tr>
<td>Dielectric Withstand Voltage</td>
<td>200V AC (r.m.s.) / 1 minute</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>50 MΩ (min.) at 250V DC</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>50m Ω (max.)</td>
</tr>
</tbody>
</table>

**MATERIAL//FINISH**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact</td>
<td>Copper Alloy / Au(Flash) over Ni Plating</td>
</tr>
<tr>
<td>Housing</td>
<td>LCP Resin (UL94V-0) / Ivory</td>
</tr>
<tr>
<td>Lock Lever</td>
<td>PPS Resin (UL94V-0) / Black</td>
</tr>
</tbody>
</table>

Caution: Regarding the handling this connector, please refer to the attached instruction manual.
## FF12 Series

### Short Lock Type

**FF12- □□ A-R11AL- □**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Number of Contact</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF12-2A-R11AL □</td>
<td>6</td>
<td>4.60</td>
<td>2.80</td>
<td>2.10</td>
<td>2.70</td>
</tr>
<tr>
<td>FF12-2A-R11AL □</td>
<td>8</td>
<td>5.20</td>
<td>3.40</td>
<td>2.70</td>
<td>3.30</td>
</tr>
<tr>
<td>FF12-2A-R11AL □</td>
<td>12</td>
<td>5.80</td>
<td>4.00</td>
<td>3.30</td>
<td>3.90</td>
</tr>
<tr>
<td>FF12-2A-R11AL □</td>
<td>13</td>
<td>6.10</td>
<td>4.30</td>
<td>3.60</td>
<td>4.30</td>
</tr>
<tr>
<td>FF12-17A-R11AL □</td>
<td>17</td>
<td>7.30</td>
<td>5.50</td>
<td>4.80</td>
<td>5.60</td>
</tr>
<tr>
<td>FF12-18A-R11AL □</td>
<td>18</td>
<td>7.60</td>
<td>5.80</td>
<td>5.10</td>
<td>5.70</td>
</tr>
<tr>
<td>FF12-21A-R11AL □</td>
<td>21</td>
<td>8.50</td>
<td>6.70</td>
<td>6.00</td>
<td>6.60</td>
</tr>
<tr>
<td>FF12-22A-R11AL □</td>
<td>22</td>
<td>8.80</td>
<td>7.00</td>
<td>6.30</td>
<td>6.90</td>
</tr>
<tr>
<td>FF12-27A-R11AL □</td>
<td>27</td>
<td>10.30</td>
<td>8.50</td>
<td>7.80</td>
<td>8.40</td>
</tr>
<tr>
<td>FF12-28A-R11AL □</td>
<td>29</td>
<td>10.90</td>
<td>9.10</td>
<td>8.40</td>
<td>9.00</td>
</tr>
<tr>
<td>FF12-32A-R11AL □</td>
<td>32</td>
<td>11.80</td>
<td>10.00</td>
<td>9.30</td>
<td>9.90</td>
</tr>
<tr>
<td>FF12-34A-R11AL □</td>
<td>34</td>
<td>12.40</td>
<td>10.60</td>
<td>9.90</td>
<td>10.50</td>
</tr>
<tr>
<td>FF12-39A-R11AL □</td>
<td>39</td>
<td>13.90</td>
<td>12.10</td>
<td>11.40</td>
<td>12.00</td>
</tr>
</tbody>
</table>

### Long Lock Type

**FF12- □□ A-R11BL- □**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Number of Contact</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF12-6A-R11BL □</td>
<td>6</td>
<td>4.00</td>
<td>2.20</td>
<td>1.50</td>
<td>2.10</td>
</tr>
<tr>
<td>FF12-8A-R11BL □</td>
<td>8</td>
<td>4.60</td>
<td>2.80</td>
<td>2.10</td>
<td>2.70</td>
</tr>
<tr>
<td>FF12-10A-R11BL □</td>
<td>10</td>
<td>5.20</td>
<td>3.40</td>
<td>2.70</td>
<td>3.30</td>
</tr>
<tr>
<td>FF12-12A-R11BL □</td>
<td>12</td>
<td>5.80</td>
<td>4.00</td>
<td>3.30</td>
<td>3.90</td>
</tr>
<tr>
<td>FF12-13A-R11BL □</td>
<td>13</td>
<td>6.10</td>
<td>4.30</td>
<td>3.60</td>
<td>4.20</td>
</tr>
<tr>
<td>FF12-16A-R11BL □</td>
<td>16</td>
<td>7.30</td>
<td>5.50</td>
<td>4.80</td>
<td>5.40</td>
</tr>
<tr>
<td>FF12-21A-R11BL □</td>
<td>21</td>
<td>8.50</td>
<td>6.70</td>
<td>6.00</td>
<td>6.60</td>
</tr>
<tr>
<td>FF12-22A-R11BL □</td>
<td>22</td>
<td>8.80</td>
<td>7.00</td>
<td>6.30</td>
<td>6.90</td>
</tr>
<tr>
<td>FF12-23A-R11BL □</td>
<td>23</td>
<td>9.10</td>
<td>7.30</td>
<td>6.60</td>
<td>7.20</td>
</tr>
<tr>
<td>FF12-25A-R11BL □</td>
<td>25</td>
<td>9.70</td>
<td>7.90</td>
<td>7.20</td>
<td>7.80</td>
</tr>
<tr>
<td>FF12-26A-R11BL □</td>
<td>26</td>
<td>10.00</td>
<td>8.20</td>
<td>7.50</td>
<td>8.10</td>
</tr>
<tr>
<td>FF12-27A-R11BL □</td>
<td>27</td>
<td>10.30</td>
<td>8.50</td>
<td>7.80</td>
<td>8.40</td>
</tr>
<tr>
<td>FF12-28A-R11BL □</td>
<td>29</td>
<td>10.90</td>
<td>9.10</td>
<td>8.40</td>
<td>9.00</td>
</tr>
<tr>
<td>FF12-31A-R11BL □</td>
<td>31</td>
<td>11.50</td>
<td>9.70</td>
<td>9.00</td>
<td>9.60</td>
</tr>
<tr>
<td>FF12-32A-R11BL □</td>
<td>32</td>
<td>11.80</td>
<td>10.00</td>
<td>9.30</td>
<td>9.90</td>
</tr>
<tr>
<td>FF12-37A-R11BL □</td>
<td>37</td>
<td>13.30</td>
<td>11.80</td>
<td>10.80</td>
<td>11.40</td>
</tr>
<tr>
<td>FF12-39A-R11BL □</td>
<td>39</td>
<td>13.90</td>
<td>12.10</td>
<td>11.40</td>
<td>12.00</td>
</tr>
<tr>
<td>FF12-40A-R11BL □</td>
<td>40</td>
<td>14.20</td>
<td>12.40</td>
<td>11.70</td>
<td>12.30</td>
</tr>
<tr>
<td>FF12-45A-R11BL □</td>
<td>45</td>
<td>15.70</td>
<td>13.90</td>
<td>13.20</td>
<td>13.80</td>
</tr>
<tr>
<td>FF12-51A-R11BL □</td>
<td>51</td>
<td>17.50</td>
<td>15.70</td>
<td>15.00</td>
<td>15.60</td>
</tr>
<tr>
<td>FF12-55A-R11BL □</td>
<td>55</td>
<td>18.70</td>
<td>16.90</td>
<td>16.20</td>
<td>16.80</td>
</tr>
<tr>
<td>FF12-60A-R11BL □</td>
<td>60</td>
<td>20.20</td>
<td>18.40</td>
<td>17.70</td>
<td>18.30</td>
</tr>
</tbody>
</table>

© Specifications and/or dimensions in this catalog are subject to change without notice. Please verify the latest specifications with our drawings.

http://www.ddkinet.co.jp
FF12 Series Mounting Dimensions

- **PCB Mounting Dimensions**

![Diagram of PCB Mounting Dimensions]

- **Recommended FPC Dimensions**

  **For Odd Number of Contact**

  ![Diagram of FPC Dimensions for Odd Number of Contact]

  **For Even Number of Contact**

  ![Diagram of FPC Dimensions for Even Number of Contact]

※ Regarding dimension C, please refer to the table on page 2.

※ Regarding dimensions C and D, please refer to the table on page 2.

Specifications and/or dimensions in this catalog are subject to change without notice. Please refer to the latest specifications with our drawings.

http://www.ddkinet.co.jp
**Package Specifications**

### Reel Dimensions

**FF12- □□ A-R11 □- □**

- **Number of Contact**
- **Lock Lever type**
  - A: Short Lock
  - B: Long Lock

<table>
<thead>
<tr>
<th>Material</th>
<th>No Digit : Non-Halogen Free</th>
<th>3H  : Halogen Free</th>
</tr>
</thead>
</table>

### Emboss Tape Dimensions

#### Type 1

- **Part Number**
- **Number of Contact**
- **A** 8
  - 4.9
- **B** 10
  - 5.5
- **C** 12
  - 8.1
- **D** 13
  - 6.4
- **E** 17
  - 7.8
- **F** 18
  - 9.9
- **G** 21
  - 8.8
- **H** 22
  - 9.1
- **A** 27
  - 10.6
- **B** 29
  - 11.2
- **C** 32
  - 12.1
- **D** 34
  - 12.7
- **E** 39
  - 14.2

#### Type 2

- **Part Number**
- **Number of Contact**
- **A** 6
  - 4.3
- **B** 8
  - 4.9
- **C** 10
  - 5.5
- **D** 12
  - 6.1
- **E** 13
  - 6.4
- **F** 17
  - 7.8
- **G** 18
  - 7.9
- **H** 21
  - 8.8
- **A** 22
  - 9.1
- **B** 23
  - 9.4
- **C** 25
  - 10.0
- **D** 26
  - 10.3
- **E** 27
  - 10.6
- **F** 29
  - 11.2
- **G** 31
  - 11.6
- **H** 32
  - 12.1
- **A** 37
  - 13.6
- **B** 39
  - 14.2
- **C** 40
  - 14.5
- **D** 45
  - 16.0
- **E** 51
  - 17.0
- **F** 55
  - 19.0
- **G** 60
  - 20.5
- **H** 65
  - 22.0

© Specifications and/or dimensions in this catalog are subject to change without notice.
Please verify the latest specifications with our drawings.

http://www.ddkinet.co.jp
**Recommended Reflow Temperature Profiles**

### for Leaded Solder Paste

- **Temperature Measurement Part:** Terminal lead part. But the temperature on the surface of the housing is 230°C (max.).
- **Metal Mask:** 0.1~0.12mm
- **Recommended Solder Paste:** Senju Metal Industry Co., Ltd. Sparkle Paste P/N: OZ63-221CM5-42-10
- **Reflow Cycle:** 2 times

### for Lead Free Solder Paste

- **Temperature Measurement Part:** Terminal lead part. But the temperature on the surface of the housing is 250°C (max.).
- **Metal Mask:** 0.1~0.12mm
- **Recommended Solder Paste:** Senju Metal Industry Co., Ltd. Eco Solder Paste P/N: NM705-GRN360-K2-V
- **Reflow Cycle:** 2 times

**Caution**

This reflow temperature profile is for your reference. It might be changed the temperature condition depend on the solder paste, volume and flux.

○ Specifications and/or dimensions in this catalog are subject to change without notice.
Please verify the latest specifications with our drawings.

http://www.ddkinet.co.jp