DX07 Series
USB Type-C™ Connector

Connector Training Module
JAE DX07 Series
USB Type-C™ Connector

Application Examples

• Smartphones
• Tablets
• PCs
• Monitors/TVs
• Digital cameras
• Other consumer devices
The next-generation USB Type-C™ interface has been defined by the USB-IF(Note) for connecting current and future consumer and industrial devices such as mobile phones, various PCs, and imaging devices. It features a reversible plug that enables insertion and removal in the right side up, or up side down orientation. It also supports USB 3.1 transmission speeds of up to 10Gbps, and a maximum of 5A of power. JAE’s new family of Type-C™ connectors, the DX07 Series, includes plugs, receptacles, and harnesses.

*Note* - USB Implementers Forum, Inc. is a non-profit corporation founded by the group of companies that developed the Universal Serial Bus specification.
**DX07 Series Features**

*User friendly – Reversible insertion*

- Compatible with Universal Serial Bus (USB) Type-CTM Cable and Connector Specification
- Compatible with SuperSpeed USB 3.1 communication
- Supports a maximum of 5A and 20V of power for charging
  - Compatible with USB Power Delivery
- Reversible plug allows for easy insertion and removal
- Superior EMI / EMC characteristics with multiple ground contact points
- Friction lock included within plug connector
- Rear shell option available for SMT variants

![Without rear shell](image1)

![With rear shell](image2)

Optional rear shell for extra shielding
### General Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Contacts</td>
<td>24</td>
</tr>
<tr>
<td>Rated Current</td>
<td>Terminal No. A1, A4, A9, A12, B1, B4, B5, B9, B12 are DC 1.25A (maximum), Others are DC 0.25A</td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>AC 20V r.m.s.</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>40mΩ max. (initial)</td>
</tr>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>AC 100V r.m.s. for 1minute</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>100MΩ min. (initial)</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-30 Deg. C ~ +80 Deg. C</td>
</tr>
<tr>
<td>Mating Durability</td>
<td>10,000 cycles</td>
</tr>
</tbody>
</table>

![Images of JAE's USB Type-C™ Connector, the DX07 Series](image_url)

**Plug**

**Receptacle (Dual Row SMT On-Board)**

**Receptacle (Hybrid On-Board)**

**Receptacle (Dual Row SMT Mid-Mount)**

**Receptacle (Hybrid Mid-Mount)**
Basic Dimensions
*All units in mm

Plug

p/n: DX07P024MJ1

9.8

14.72

8.25

2.4

3.15

Paddle card (not included)

Shell

Insulator

JAE's USB Type-C™ Connector, the DX07 Series

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Basic Dimensions (continued)

*All units in mm

Plug
Basic Dimensions
*All units in mm

**Receptacle**
*(Dual Row SMT Mid-Mount)*

p/n: DX07B024JJ*

- **Center height**: 0.47 mm
- **Dimensions**: (2.04) mm

**GND plate**

**Dimensions**:
- Width: 12.0 mm
- Height: 8.94 mm
- Depth: 8.17 mm

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JAE's USB Type-C™ Connector, the DX07 Series

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Basic Dimensions (continued)

*All units in mm

Receptacle (Dual Row SMT Mid-Mount)

Footprint will be on the Type C™ spec for dual row SMT mid mount.
Basic Dimensions
*All units in mm

Receptacle
*(Dual Row SMT On-board)*

p/n: DX07S024JJ*

1.57
*(Center height)*

8.94

8.17

GND plate

(Dual Row SMT On-board)
Basic Dimensions (continued)

*All units in mm

**Receptacle**
(Dual Row SMT On-board)

---

**Not compatible with reference footprint on the Type C™ spec.**
Basic Dimensions

*All units in mm

Receptacle
(Hybrid On-board)

p/n: DX07S024XJ1

1.57
(Center height)

(3.34)

GND plate

Rear shield

Locator

9.65

9.4
Basic Dimensions (continued)

*All units in mm

Receptacle
(Hybrid On-board)

Not compatible with reference footprint on the Type C™ spec.
Basic Dimensions
*All units in mm

Receptacle
( Hybrid Mid-Mount )

p/n: DX07B024XJ1

(2.37)

0.7
(Center height)

GND plate

Rear shield

Locator

9.65

11.8
Basic Dimensions (continued)

*All units in mm

Receptacle
(Hybrid Mid-Mount)

Not compatible with reference footprint on the Type C™ spec.
# Materials and Finishes

## Dual Row SMT Receptacle

<table>
<thead>
<tr>
<th>Component</th>
<th>Material / Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulators</td>
<td>Synthetic Resin</td>
</tr>
<tr>
<td>Rear Shield (optional)</td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td>Shell</td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td>Ground Plate</td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td>Mid Plate</td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td>Contacts</td>
<td>Copper Alloy w/ Contact area: Gold Flash plating over Palladium-Nickel over Nickel Solder tails: Gold Flash plating over Nickel</td>
</tr>
</tbody>
</table>

## Hybrid Receptacle

<table>
<thead>
<tr>
<th>Component</th>
<th>Material / Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulator</td>
<td>Synthetic Resin</td>
</tr>
<tr>
<td>Rear Shield</td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td>Bracket</td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td>Shell</td>
<td>Stainless Steel w/ Black Nickel Plating</td>
</tr>
<tr>
<td>Ground Plate</td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td>Mid Plate</td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td>Contacts</td>
<td>Copper Alloy w/ Contact area: Gold Flash plating over Palladium-Nickel over Nickel Solder tails: Gold Flash plating over Nickel</td>
</tr>
</tbody>
</table>
## Materials and Finishes (continued)

<table>
<thead>
<tr>
<th>Component</th>
<th>Material / Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contact</strong></td>
<td>Copper Alloy w/ Contact area: Gold Flash plating over Palladium-Nickel over Nickel</td>
</tr>
<tr>
<td></td>
<td>Solder tails: Gold Flash plating over Nickel</td>
</tr>
<tr>
<td><strong>Ground Spring</strong></td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td><strong>Friction Lock</strong></td>
<td>Stainless Steel</td>
</tr>
<tr>
<td><strong>Shell</strong></td>
<td>Stainless Steel w/ Nickel Plating</td>
</tr>
<tr>
<td><strong>Insulator</strong></td>
<td>Heat Resistant Resin / Black</td>
</tr>
<tr>
<td><strong>Inner Insulator</strong></td>
<td>Heat Resistant Resin / Black</td>
</tr>
<tr>
<td><strong>Insulation Tape</strong></td>
<td>Polyimide</td>
</tr>
<tr>
<td><strong>Protection Cap</strong></td>
<td>Heat Resistant Resin / Black</td>
</tr>
</tbody>
</table>
# Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Part Number</th>
<th>Rear Shield</th>
<th>SJ Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plug</strong></td>
<td>DX07P024MJ1R1500</td>
<td>-</td>
<td>SJ115803 (Individual Connector)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SJ115804 (Reeled Product)</td>
</tr>
<tr>
<td><strong>Mid-mount type</strong></td>
<td>DX07B024JJ1R1500</td>
<td>Yes</td>
<td>SJ115850 (Individual Connector)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SJ115851 (Reeled Product)</td>
</tr>
<tr>
<td></td>
<td>DX07B024JJ2R1500</td>
<td>No</td>
<td>SJ115996 (Individual Connector)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SJ115997 (Reeled Product)</td>
</tr>
<tr>
<td></td>
<td>DX07B024XJ1R1300</td>
<td>Yes</td>
<td>SJ116121 (Individual Connector)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SJ116122 (Reeled Product)</td>
</tr>
<tr>
<td><strong>On-board type</strong></td>
<td>DX07S024JJ2R1300</td>
<td>Yes</td>
<td>SJ115946 (Individual Connector)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SJ115947 (Reeled Product)</td>
</tr>
<tr>
<td></td>
<td>DX07S024JJ3R1300</td>
<td>No</td>
<td>SJ115994 (Individual Connector)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>SJ115995 (Reeled Product)</td>
</tr>
<tr>
<td></td>
<td>DX07S024XJ1R1100</td>
<td>Yes</td>
<td>SJ116123 (Individual Connector)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SJ116124 (Reeled Product)</td>
</tr>
</tbody>
</table>

**Series**

**Modification Code**

- B: Mid-mount type
- S: On-board type
- P: Plug type

**No. of Contacts**

**Reel Amount**

**Modification Code**

- JJ1: SMT w/ rear shield
- JJ2 (B-type): SMT no rear shield
- JJ2 (S-type): SMT w/ rear shield
- JJ3: SMT no rear shield
- XJ1: hybrid w/ rear shield
- MJ1: Plug
Summary

• USB 3.1 high speed signaling supported
• Mid-mount and On-board type receptacles available
• User-friendly – Reversible insertion
• Optional rear shell
• Friction lock equipped
• Enhanced EMI performance
• Power delivery supported (3A/5A)