DX07 Series
USB Type-C™ Connector

Product Information Module
JAE DX07 Series
USB Type-C™ Connector

Application Examples

• Smartphones
• Tablets
• PCs
• Monitors/TVs
• Digital cameras
• Other consumer devices
DX07 Series Overview

The next-generation USB Type-C™ interface has been defined by the USB-IF\(^{(\text{Note})}\) for connecting current and future consumer and industrial devices such as mobile phones, various PCs, imaging devices, etc. 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-C™ Cable and Connector Specification Rev 1.2
- Compatible with SuperSpeed Plus USB 3.1 Gen 2 communication (10Gbps)
- 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 some SMT variants

Optional rear shell for extra shielding
## General Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</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 1 minute</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>

![Slim Plug](image1.png)

![Receptacle (Dual Row SMT On-Board)](image2.png)

![Receptacle (Dual Row SMT Vertical)](image3.png)

![Receptacle (Hybrid On-Board)](image4.png)

![Receptacle (Dual Row SMT Mid-Mount)](image5.png)

![Receptacle (Dual Row SMT Vertical)](image6.png)

![Receptacle (Hybrid Mid-Mount)](image7.png)
Basic Dimensions

*All units in mm

Slim Plug

p/n: DX07P024AJ1

- Shell: 8.19 mm
- Insulator: 8.25 mm
- Paddle card (not included): 2.4 mm
- Shell: 3.2 mm
- Insulator: 10.15 mm
Basic Dimensions (continued)

*All units in mm

**Slim Plug**

p/n: DX07P024AJ1

Paddle card (not included)
Basic Dimensions
*All units in mm

Receptacle
(Dual Row SMT Vertical Mount)

p/n: DX07S024WJ1

4.7 (Mating Depth)

12.0

7.0

12.0

12.0

1.9

1.0

GND plate

(Dual Row SMT Vertical Mount)
Basic Dimensions (continued)

*All units in mm

Receptacle
(Dual Row SMT Vertical Mount)

p/n: DX07S024WJ1

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

Receptacle
(Dual Row SMT Vertical Mount)

p/n: DX07S024WJ3
Basic Dimensions (continued)

*All units in mm

Receptacle
(Dual Row SMT Vertical Mount)

p/n: DX07S024WJ3

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

*All units in mm*

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

p/n: DX07B024JJ3

- 0.07 (Center height)
- 8.94
- 8.9
- 3.14
- 0.7
- 12.0
- 4.45 (Mating Depth)
- 3.14
- 0.7
- (1.5)
Receptacle (Dual Row SMT Mid-Mount)

p/n: DX07B024JJ3

Footprint will be on the Type C™ spec for dual row SMT mid mount.

*All units in mm
Basic Dimensions

*All units in mm

Receptacle
(Dual Row SMT Mid-Mount)

p/n: DX07B024JJ1/2

GND plate

0.47 (Center height)

4.7
(Mating Depth)

8.17
8.94
12.0
3.14
0.8

JAE's USB Type-C™ Connector, the DX07 Series
Basic Dimensions (continued)

*All units in mm

Receptacle
(Dual Row SMT Mid-Mount)

p/n: DX07B024JJ1/2

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: DX07S024JJ2/3

- **GND plate**
  - Center height: 1.57 mm
  - GND plate width: 8.94 mm
  - Height: 8.17 mm
  - Mating Depth: 4.7 mm
  - Width: 0.6 mm
Basic Dimensions (continued)

*All units in mm

Receptacle
(Dual Row SMT On-board)

p/n: DX07S024JJ2/3

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

*All units in mm

Receptacle
( Hybrid On-board )

p/n: DX07S024XJ1

(3.34)

1.57 (Center height)

Rear shield

9.4

9.65

8.94

5.5
(Mating Depth)

0.7

GND plate

JAE's USB Type-C™ Connector, the DX07 Series
Basic Dimensions (continued)

*All units in mm

Receptacle
(Hybrid On-board)

p/n: DX07S024XJ1

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)

9.65

8.94

11.8

5.5

(Mating Depth)

3.14

0.9

GND plate

Rear shield

JAE's USB Type-C™ Connector, the DX07 Series
Basic Dimensions (continued)

*All units in mm

**Receptacle**
( Hybrid Mid-Mount)

p/n: DX07B024XJ1

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 (No plating for DX07S024WJ3)</td>
</tr>
<tr>
<td>Contacts</td>
<td>Copper Alloy w/ Contact area: Gold Flash plating over Palladium-Nickel 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</td>
</tr>
</tbody>
</table>
## Materials and Finishes (continued)

### Slim Plug

<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: Palladium over Nickel Plating - Gold Flash Plating over Nickel alloy 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 w/ Nickel Plating</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 (Halogen-free)</td>
</tr>
<tr>
<td><strong>Inner Insulator</strong></td>
<td>Heat Resistant Resin / Black (Halogen-free)</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 (Halogen-free)</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>Receptacles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slim Plug</td>
<td>DX07P024AJ1R1500</td>
<td>-</td>
<td>SJ116680 / SJ116681</td>
</tr>
<tr>
<td>Mid-mount type</td>
<td>DX07B024JJ1R1500</td>
<td>Yes</td>
<td>SJ115850 / SJ115851</td>
</tr>
<tr>
<td></td>
<td>DX07B024JJ2R1500</td>
<td>No</td>
<td>SJ115996 / SJ115997</td>
</tr>
<tr>
<td></td>
<td>DX07B024JJ3R1600</td>
<td>No</td>
<td>SJ117601 / SJ117602</td>
</tr>
<tr>
<td></td>
<td>DX07B024XJ1R1300</td>
<td>Yes</td>
<td>SJ116121 / SJ116122</td>
</tr>
<tr>
<td>On-board type</td>
<td>DX07S024JJ1R1500</td>
<td>Yes</td>
<td>SJ115946 / SJ115947</td>
</tr>
<tr>
<td></td>
<td>DX07S024JJ2R1300</td>
<td>No</td>
<td>SJ115994 / SJ115995</td>
</tr>
<tr>
<td></td>
<td>DX07S024JJ3R1300</td>
<td>No</td>
<td>SJ116123 / SJ116124</td>
</tr>
<tr>
<td></td>
<td>DX07S024XJ1R1100</td>
<td>Yes</td>
<td>SJ116121 / SJ116122</td>
</tr>
<tr>
<td>Vertical type</td>
<td>DX07S024WJ1R1300</td>
<td>Yes</td>
<td>SJ117219 / SJ117220</td>
</tr>
<tr>
<td></td>
<td>DX07S024WJ3R400</td>
<td>N/A</td>
<td>SJ117928 / SJ117929</td>
</tr>
</tbody>
</table>

**Series: DX07**  
* - 024  
*J*  
R****

**Modification Code**  
B: Mid-mount type  
S: On-board type  
P: Plug type

**No. of Contacts**

**Reel Amount**

**Modification Code**  
JJ*: SMT Receptacle  
WJ*: Vertical Receptacle  
XJ*: Hybrid Receptacle  
AJ1: Slim Plug
Summary

- USB 3.1 high speed signaling supported up to 10Gbps
- Mid-mount, on-board and vertical type receptacles available
- User-friendly – Reversible insertion
- Friction lock equipped
- Enhanced EMI performance
- Power Delivery supported (3A/5A)