High Wood Technology Development Co.,Ltd

Contact Email: mike@highwooddep.com
Phone: +86 13606178231（Wechat）
Website: www.highwooddep.com

XHW Series Rectangular Connector Specification



The rectangular connector is suitable for DC, AC (with the maximum working frequency of 3 MHz), and pulse current circuits; the rated working voltage is 150V, and the rated current of each contact is 1A.

It supports complete machine assembly and printed circuit board welding assembly, and achieves connection, locking and fixation through the threaded structure.

Appendix: Foreign Model Equivalents to Highwood Models

Customer model	Highwood model
ОНП-ЖИ-8-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-B38-n（C）	XHW-21（42,52,54,76）TJ-B38-n（C）
ОНП-ЖИ-8-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-B39-n（C）	XHW-21（42,52,54,76）TJ-B39-n（C）
ОНП-ЖИ-8Э-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-B40-n（C）	XHW-21（42,52,54,76）TJD-B40-n（C）
ОНП-ЖИ-8Э-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-B41-n（C）	XHW-21（42,52,54,76）TJD-B41-n（C）
ОНП-ЖИ-8Э-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-B42-n（C）	XHW-21（42,52,54,76）TJD-B42-n（C）
ОНП-ЖИ-8Э-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-B43-n（C）	XHW-21（42,52,54,76）TJD-B43-n（C）
ОНП-ЖИ-8Э-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-B58-n（C）	XHW-21（42,52,54,76）TJD-B58-n（C）
ОНП-ЖИ-8-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-P29-n（C）-Фm	XHW-21（42,52,54,76）ZK-P29-n(C)-Фm
ОНП-ЖИ-8Э-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-P291-n（C）-Фm	XHW-21（42,52,54,76）ZK-P291-n(C)-Фm
ОНП-ЖИ-8Э-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-P292-n（C）-Фm	XHW-21（42,52,54,76）ZKD-P292-n(C)-Фm
ОНП-ЖИ-8-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-P23-n（C）-Фm	XHW-21（42,52,54,76）ZK-P23-n(C)-Фm
ОНП-ЖИ-8Э-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-P231-n（C）-Фm	XHW-21（42,52,54,76）ZK-P231-n(C)-Фm
ОНП-ЖИ-8Э-21/46（42/46,52/54.5,54/54.5,76/69.5）x8-P232-n（C）-Фm	XHW-21（42,52,54,76）ZKD-P232-n(C)-Фm

Note: 1. "n" indicates anti-misinsertion key position; if not present, it is not marked, where n=1,2,...,11,12;

2. "C" indicates tin-plated pins; if not present, pins are gold-plated;

3. "Фm" indicates pin type, where m=1,2,3,4,5,6,7,8,1H,2H,3H,7H,8H; if not specified, the pin type is straight pin.

I.Product Description

1. Model Composition

Example:

XHW	-42	TJ/ZK	D	-B43	-1	C	-Ф6
①	②	③	④	⑤	⑥	⑦	⑧

① **Main series code name**

② **Number of contacts:** 21, 42, 52, 54, 76

③ **Product type:** TJ- Plug with Pin;
ZK- Socket mounting holes

④ **D-spring gasket :**No spring gasket - No marking

⑤ **Structural form:** B-plug; P-socket.
The meanings of the numbers are shown in Table 1

⑥ **Anti-misinsertion key codes** (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12)

⑦ **Contact plating:** C-Tin-plated ; Without the "C" mark- Gold-plated

⑧ **Pin type:** See Figures 1 to 5 in Appendix A. If not marked, it is a straight pin type

Contact Email: mike@highwooddep.com
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II. Type of construction

Table 1

B-plug	
38	Tail welding wire, aluminum alloy hard anodizing of the shell, anti-loosening screws, straight PA sheath
39	Tail welding wire, hard anodized aluminum alloy shell, joint/separation (plug and pull screw) connection piece, straight PA sheath
40	Tail welding wire, nickel-plated aluminum alloy shell, fixing screws, straight metal sheath (only for conductive metal shells)
41	The same as 40, with an additional wire clamp fixture
42	Tail welding wire, shell aluminum alloy nickel-plated, joint/separation connection parts, straight metal sheath (shielding type)
43	The same as 42, with an additional wire clamp fixture (shielded type)
58	Tail welding wire, nickel-plated aluminum alloy shell, straight metal sheath, no joint/separation connection parts (shielded type)
P-Socket	
23	The shell is made of aluminum alloy with hard anodizing. It is a panel-mounted type and is installed from the inner side of the equipment wall
29	The shell is made of aluminum alloy with hard anodizing. It is a panel-mounted type and is installed from the outside of the equipment wall
231	The same as 23, the shell is made of aluminum alloy with nickel plating (shielding type)
291	The same as 29, the shell is made of aluminum alloy with nickel plating (shielding type)
232	The same as 23, the shell is made of aluminum alloy with nickel plating + spring contacts (shielded type)
292	The same as 29, the shell is made of aluminum alloy with nickel plating + spring contacts (shielded type)

2. Product Features

a. In accordance with GJB 2446.

b. Plug connectors are used as free ends, receptacle connectors as fixed ends.

c. Connector termination method: straight printed circuit board (1.25 × 1.5) soldering.

d. Connector structures:

"23" and "231" accessories are rear panel mounting; panel thickness: 1.0–1.2 mm.
"29" and "291" accessories are front panel mounting; panel thickness: 1.5–2.5 mm.

e. Plug connectors are equipped with flexible pin contacts; receptacle connectors with rigid socket contacts.
Contacts are made of copper alloy; insulator plates made of engineering plastic.

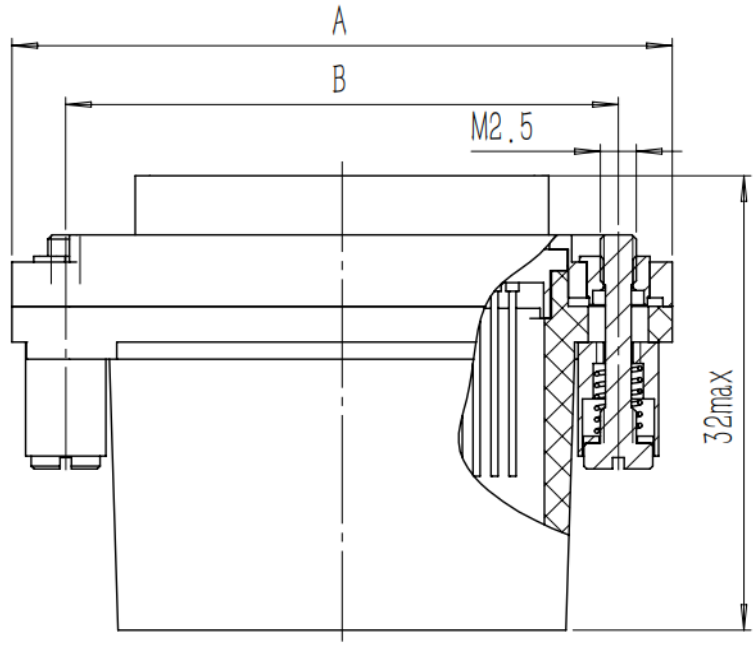
III. Principal Technical Parameters

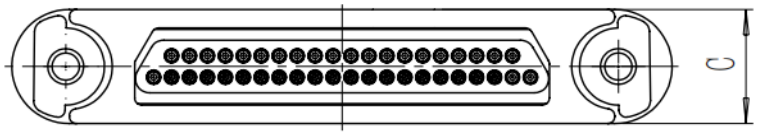
Electrical Performance	
Rated Current	3 A
Withstand Voltage	600V（50Hz a.c.）
Contact Resistance	≤10 mΩ
Insulation Resistance	≥5000 MΩ
Mechanical Performance	
Mechanical Life	500 cycles
Vibration	10Hz～5000Hz，400m/s²
Impact	Acceleration 15000m/s² 2ms
Environmental Performance	
Operating Temperature	-55℃～+95℃
Operating Humidity	≤95% at 40℃
Salt Spray	48h

IV. Product Dimensions and Installation Sizes

1. Product Dimensions

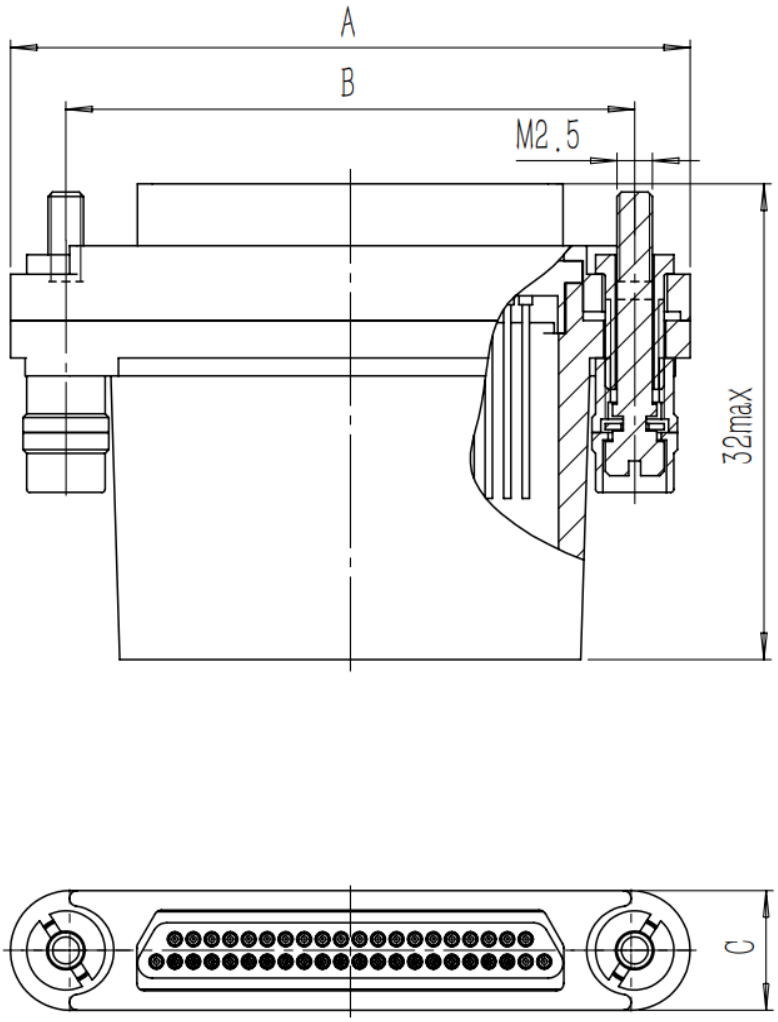
1) Rectangular connector Plug XHW-21 (42, 52, 54, 76) TJ-B38-1 (2...12)（C)





Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

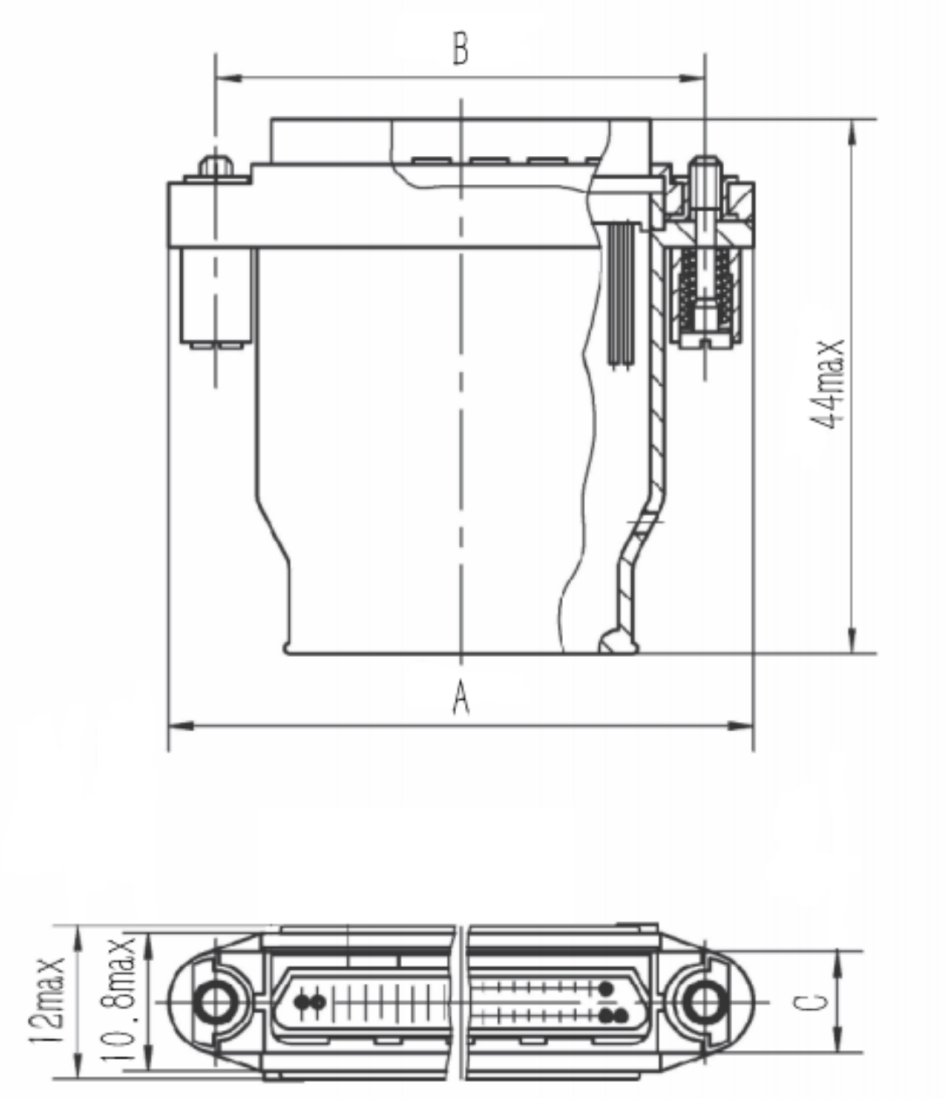
2) Rectangular connector plug XHW-21 (42, 52, 54, 76) TJ-B39-1 (2...12)（C)



Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

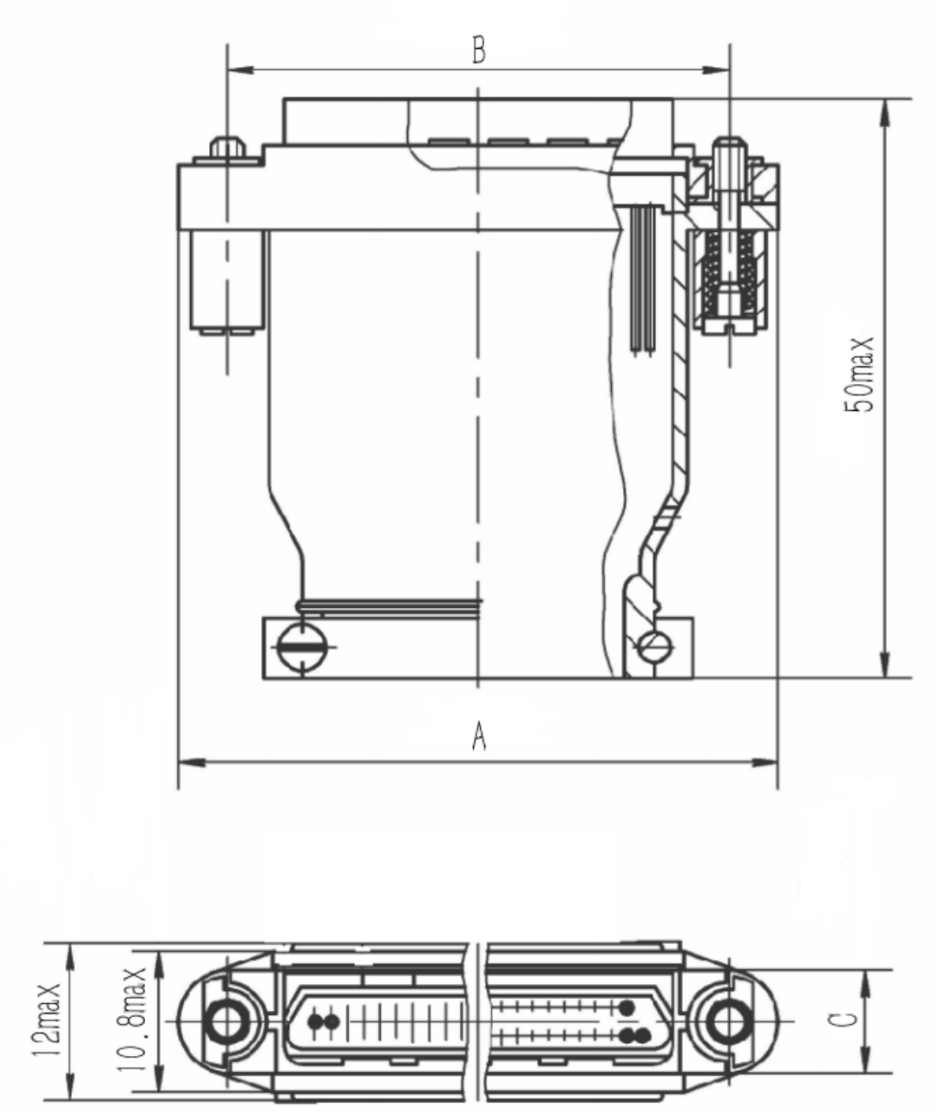
Contact Email: mike@highwooddep.com
Phone: +86 13606178231（Wechat）
Website: www.highwooddep.com

3) Rectangular connector plug XHW-21 (42, 52, 54, 76) TJ-B40-1 (2...12)（C)



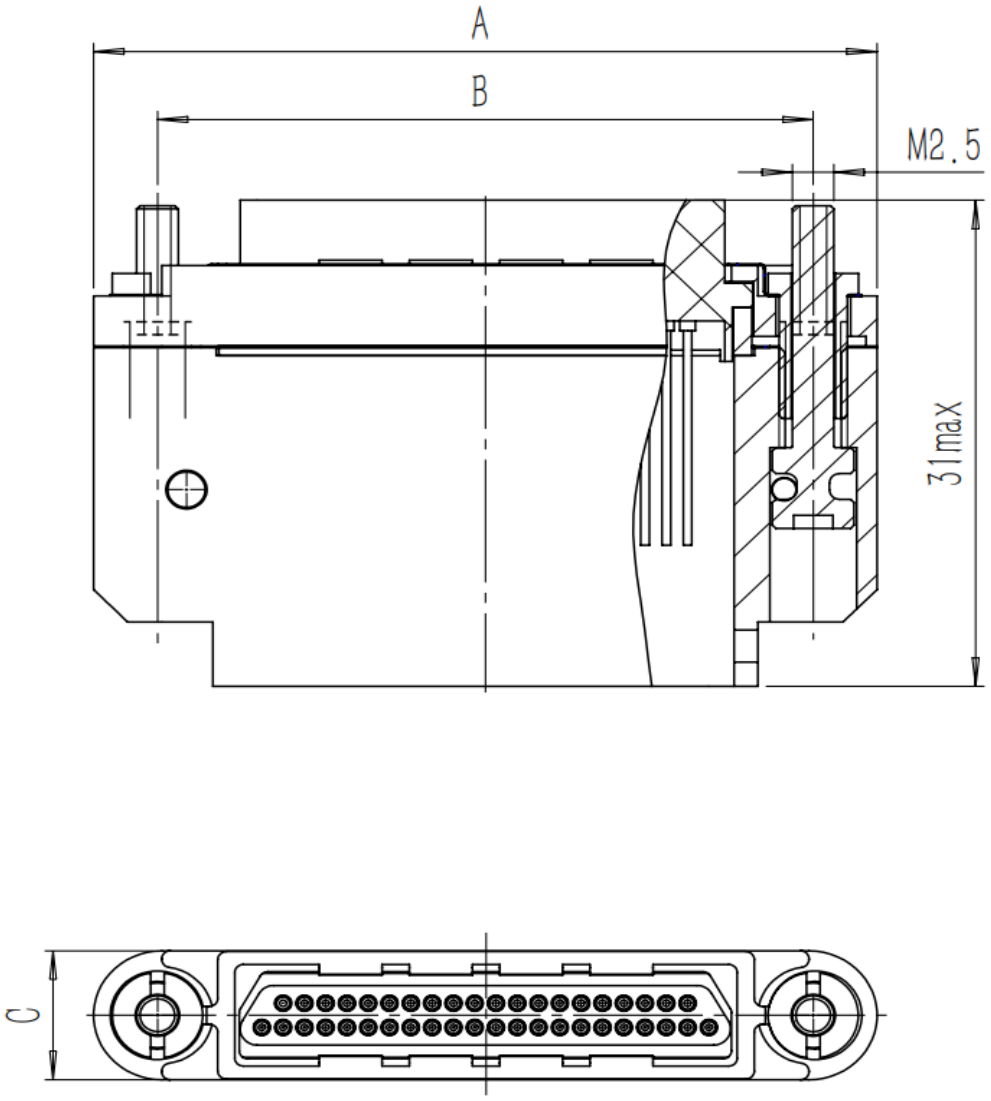
Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

4) Rectangular connector plug XHW-21 (42, 52, 54, 76) TJ-B41-1 (2...12)（C)



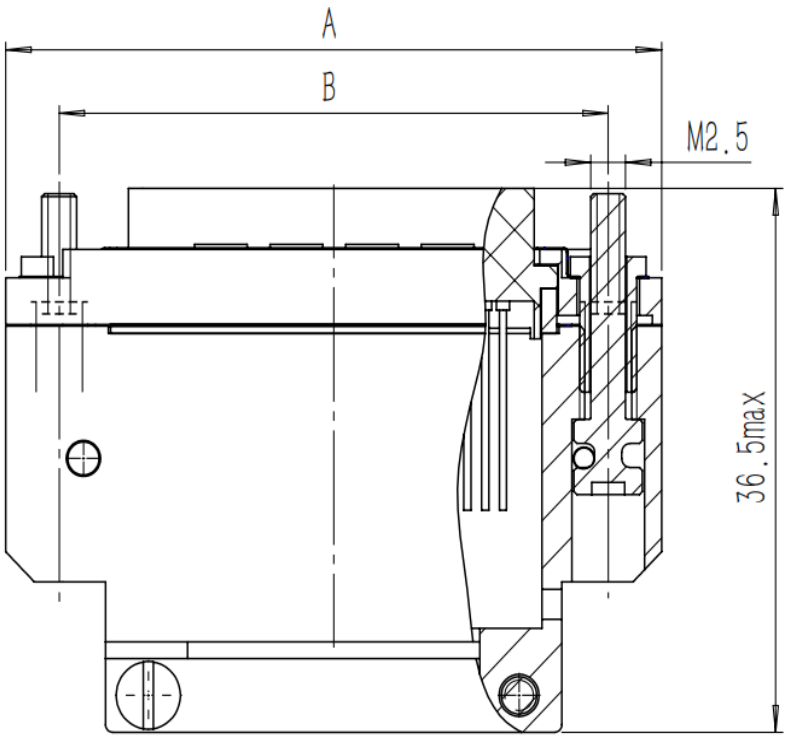
Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

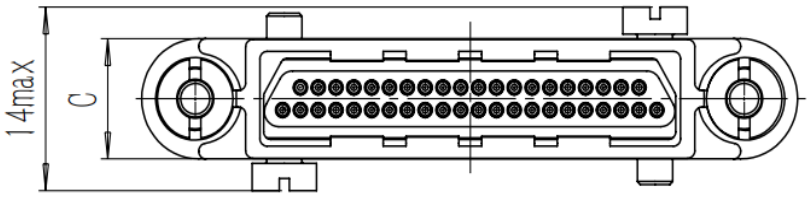
5) Rectangular connector plug XHW-21 (42, 52, 54, 76) TJ-B42-1 (2...12)（C)



Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

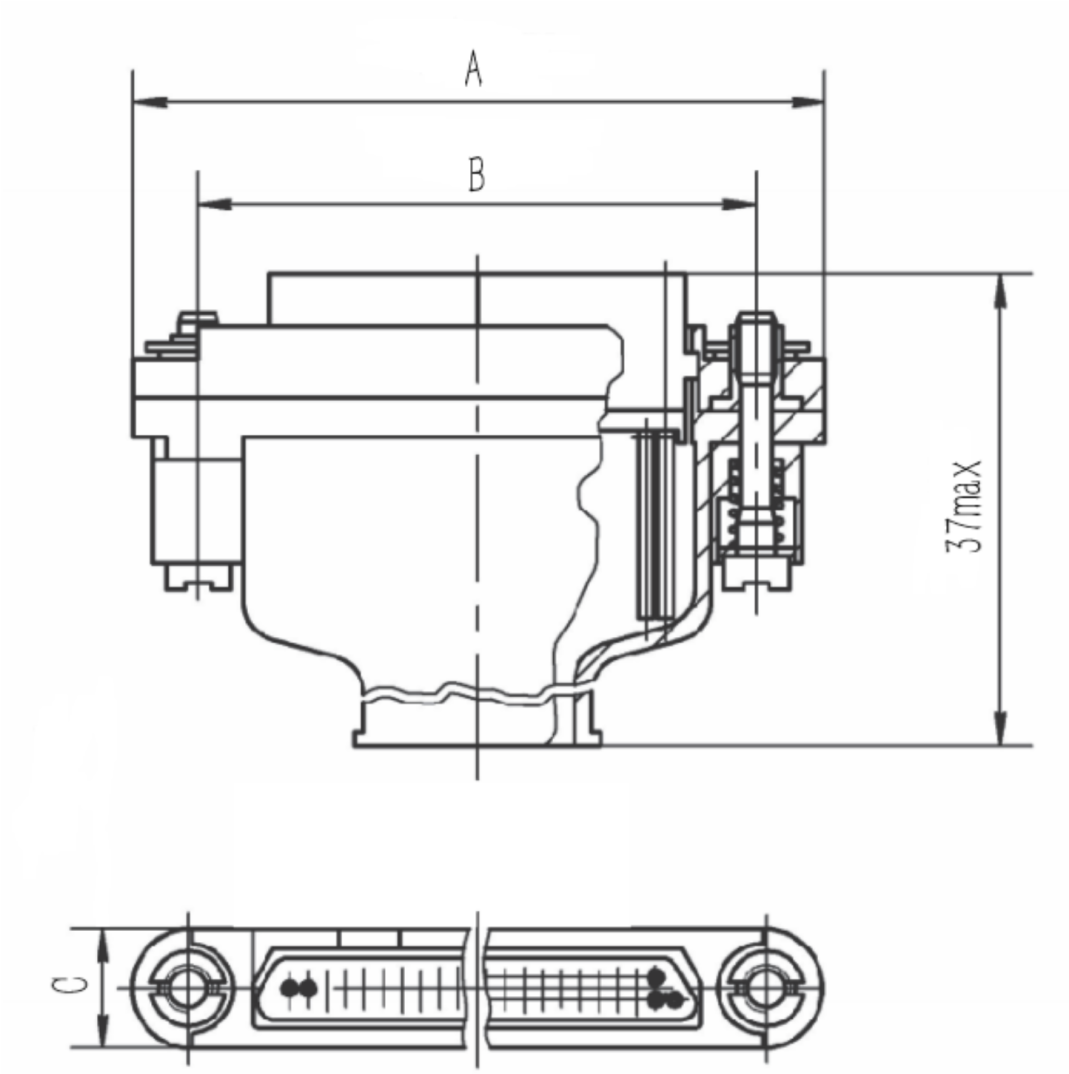
6) Rectangular connector plug XHW-21 (42, 52, 54, 76) TJ-B43-1 (2...12)（C)





Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

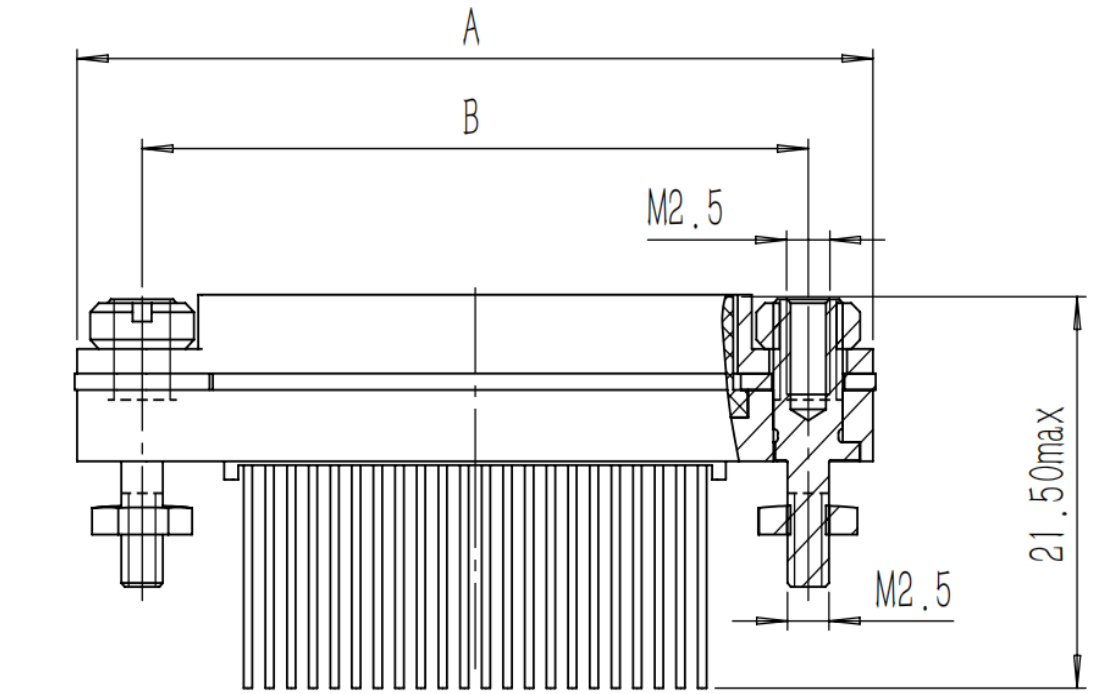
7) Rectangular connector plug XHW-21 (42, 52, 54, 76) TJ-B58-1 (2...12)（C)

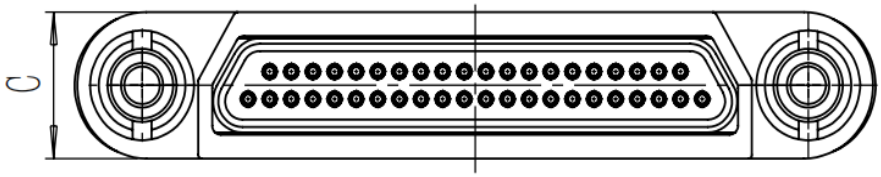


Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

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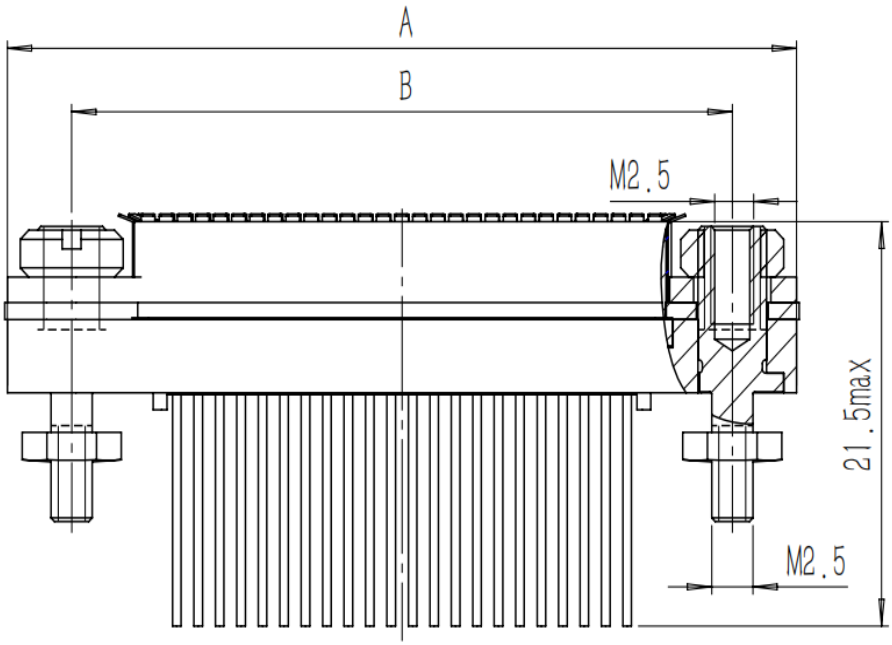
8) Rectangular connector socket XHW-21(42,52,54,76)ZK-P23-1(2...12)(C)
Rectangular connector socket XHW-21 (42,52,54,76) ZK-P231-1 (2...12)（C)

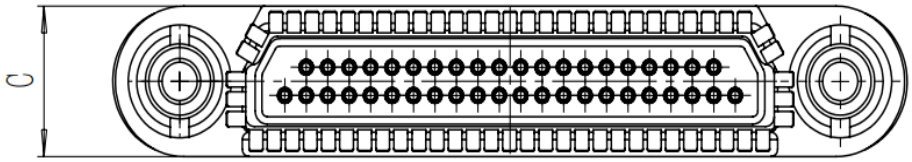




Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

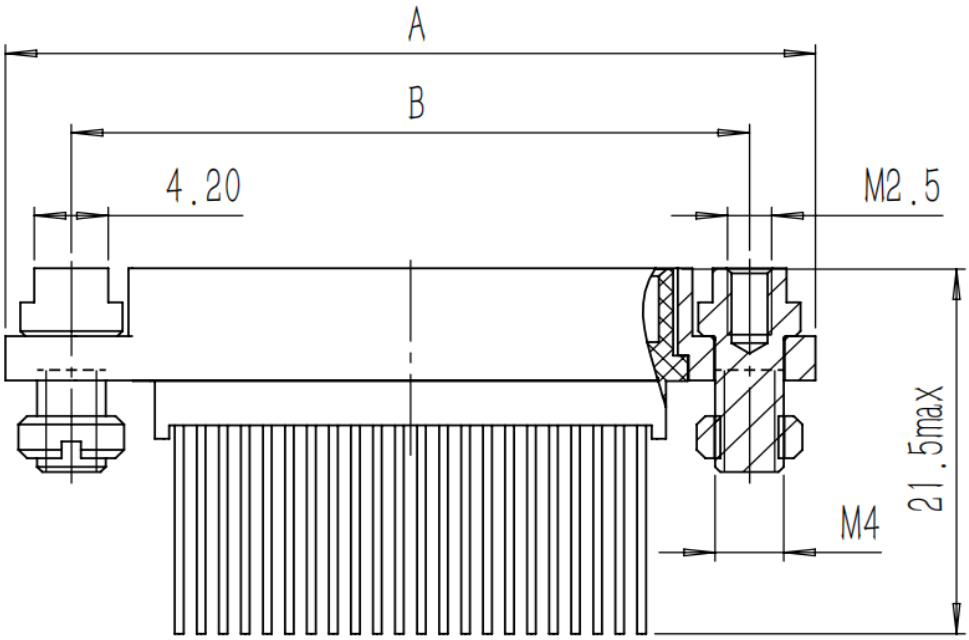
9) Rectangular connector socket XHW-21 (42, 52, 54, 76) ZK-P232-1 (2...12)（C)

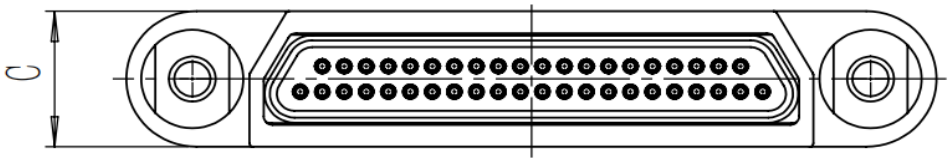




Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

10) Rectangular connector socket XHW-21(42,52,54,76)ZK-P29-1(2...12)(C)
Rectangular connector socket XHW-21 (42,52,54,76) ZK-P291-1 (2...12)(C)

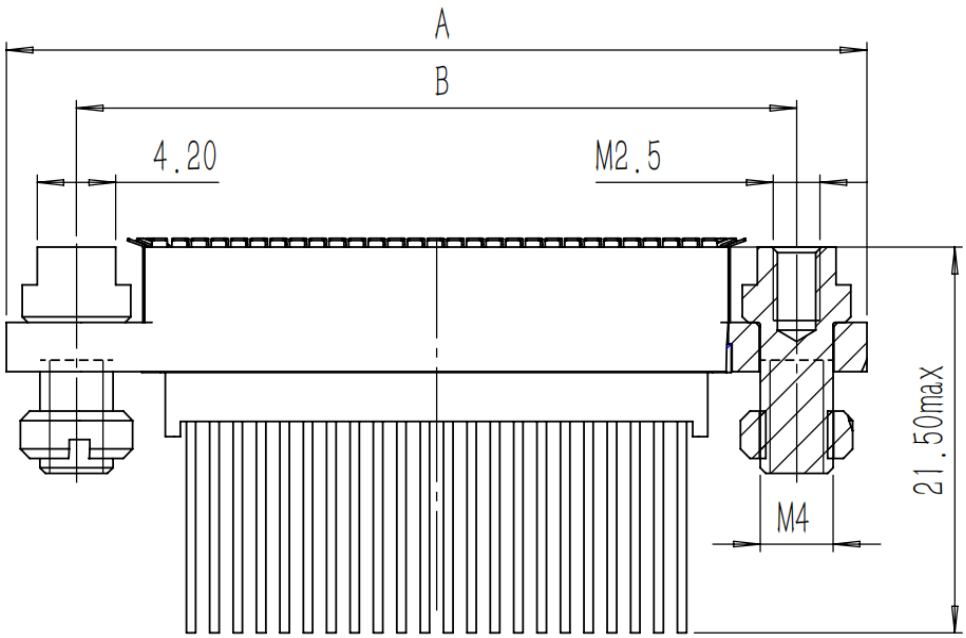


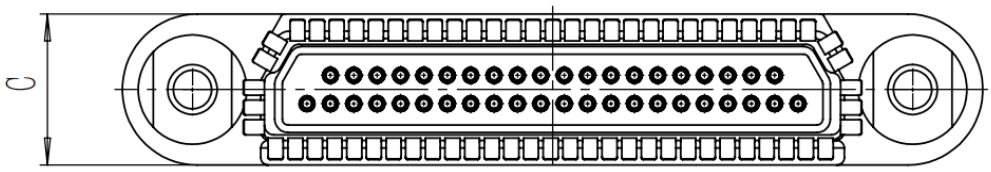


Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

Contact Email: mike@highwooddep.com
Phone: +86 13606178231（Wechat）
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11) Rectangular connector socket XHW-21 (42, 52, 54, 76) ZK-P292-1(2...12)(C)



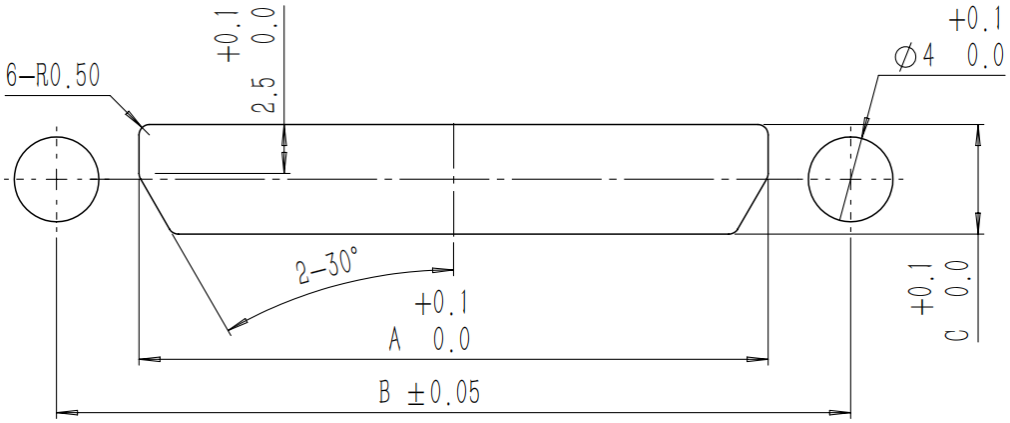


Pins	A	B	C
21	46	38.5	8
42	46	38.5	8
52	54.5	47	8
54	54.5	47	8
76	69.5	61.2	8.8

2. Recommended panel cut-out dimensions

1) Rectangular connector socket XHW-21 (42, 52, 54, 76) ZK-P23-1 (2...12)(C),

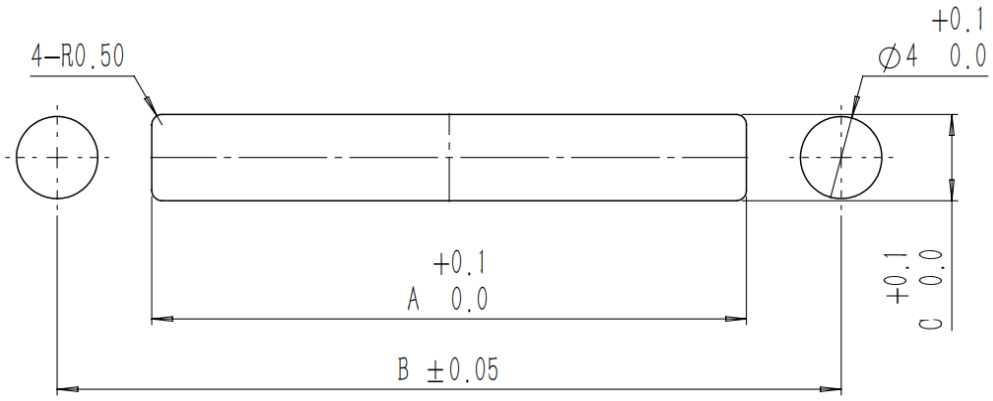
rectangular connector socket XHW-21 (42, 52, 54, 76) ZK-P231-1(2...12)(C)



Pins	A	B	C
21	30.5	38.5	5.3
42	30.5	38.5	5.3
52	39	47	5.3
54	39	47	5.3
76	52.7	61.2	5.8

2) Rectangular connector socket XHW-21 (42, 52, 54, 76) ZK-P29-1 (2...12)(C);

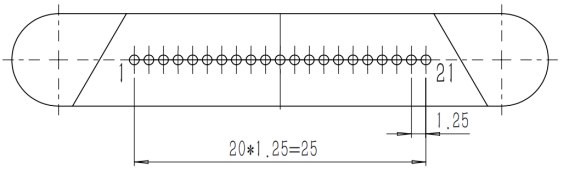
Rectangular connector socket XHW-21 (42, 52, 54, 76) ZK-P291-1 (2...12）(C)



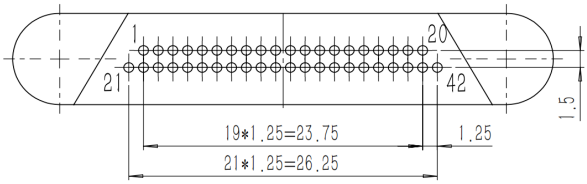
Pins	A	B	C
21	29.2	38.5	4.2
42	29.2	38.5	4.2
52	37.7	47	4.2
54	37.7	47	4.2
76	51.7	61.2	4.5

3. Contact layout diagrams viewed from plug mounting side (viewed from socket mating contact side)

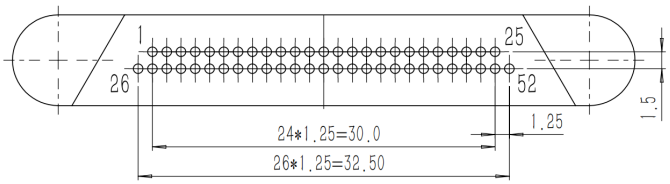
1) Rectangular connector socket XHW-21ZK-23(231,29,291)-1(2...12)(C)



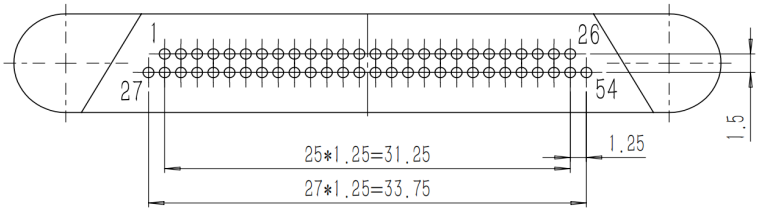
2) Rectangular connector socket XHW-42ZK-23(231,29,291)-1(2...12)(C)



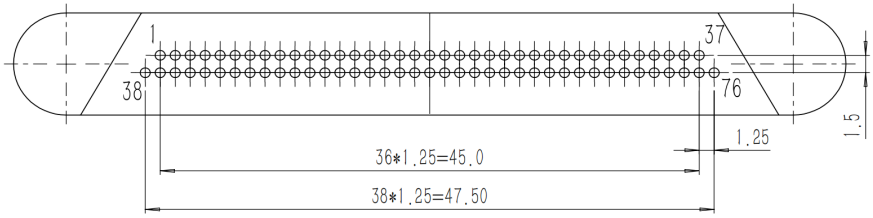
3) Rectangular connector socket XHW-52ZK-23(231,29,291)-1(2...12)(C)



4) Rectangular connector socket XHW-54ZK-23(231,29,291)-1(2...12)(C)



5) Rectangular connector socket XHW-76ZK-23(231,29,291)-1(2...12)(C)



V. Instructions for Use

Exercise care when handling, moving, or positioning the connector; ensure it is placed gently. Inspect the product prior to use and remove any foreign matter that may affect its performance.

VI. Precautions

The connector must only be used under the specified operating conditions and environment.

VII. Transportation and Storage

1. Storage temperature: -10°C to +40°C. Relative humidity not exceeding 75%. Ambient air free from corrosive gases such as acids or alkalis.

2. Products are packaged in dry, moisture-proof, dust-proof, and mould-resistant boxes. Packaging indicates product model, name, quantity, manufacturer's mark, and date. Boxed products may be transported by any means provided direct exposure to rain or snow is avoided.

Appendix A： The led end of the formed contact piece

Figure 1

XHW-42(21,52,54,76)(D)-P29(1)-1(2....12)(C)-Φ1(Φ2,Φ3,Φ7,Φ8)
XHW-42(21,52,54,76)(D)-P23(1)-1(2....12)(C)-Φ1(Φ2,Φ7)

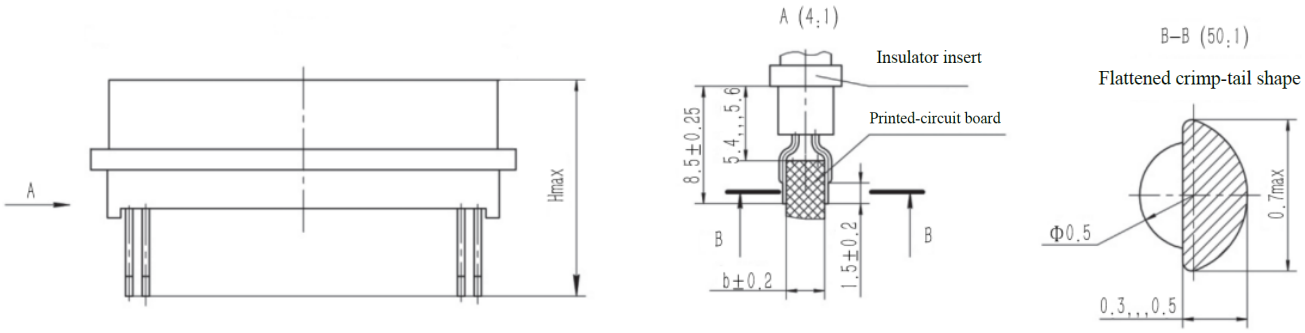


Figure 2

XHW-42(21,52,54,76)(D)-P29(1)-1(2....12)(C)Φ1H(Φ2H,Φ3H,Φ7H,Φ8H)
XHW-42(21,52,54,76)(D)-P23(1)-1(2....12)(C)-Φ1H(Φ2H,Φ7H)

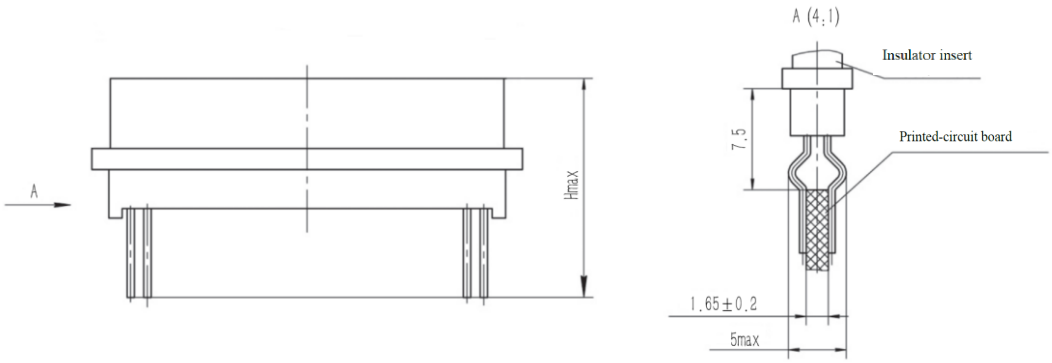


Figure 3

XHW-42(21,52,54,76)(D)-P29(1)-1(2....12)(C)-Φ6

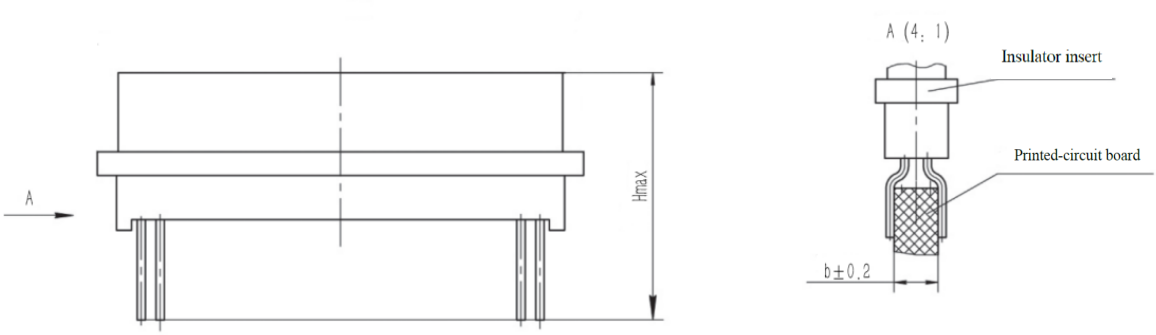


Figure 4

XHW-42(21,52,54,76)(D)-P29(1)-1(2....12)(C)-Φ4

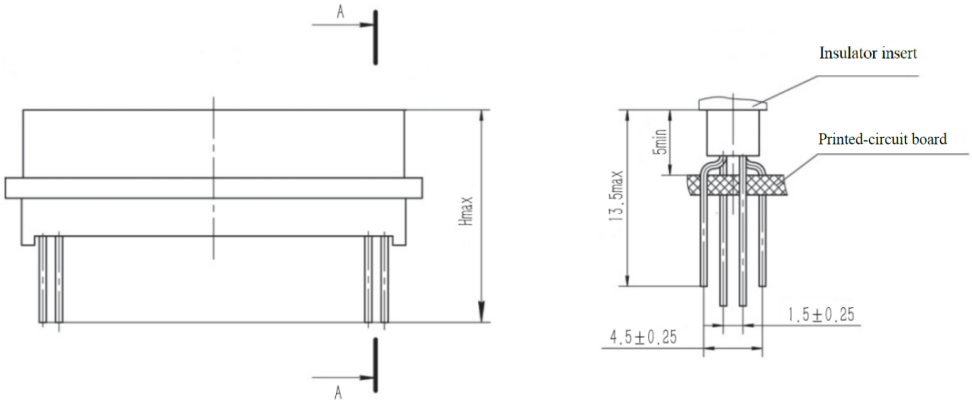
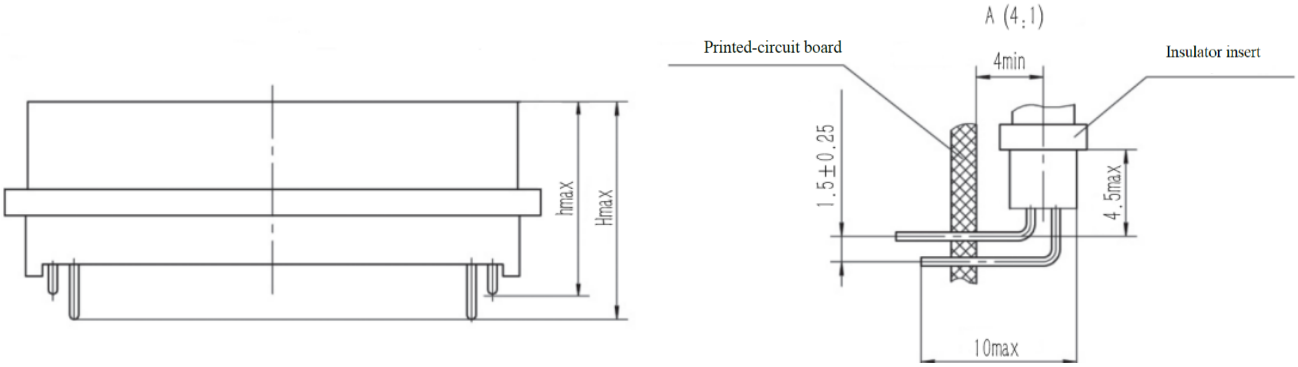


Figure 5

XHW-42(21,52,54,76)(D)-P29(1)-1(2....12)(C)-Φ5



Pin form symbol	Figure number	b（mm）	h max（mm）	H max（mm）
Φ1	figure 1	2	-	15.5
Φ1H	figure 2	2	-	15.5
Φ2	figure 1	2.8	-	15.5
Φ2H	figure 2	2.8	-	15.5
Φ3	figure 1	3.6	-	15.5
Φ3H	figure 2	3.6	-	15.5
Φ4	figure 4	-	-	21.5
Φ5	figure 5	-	12.2	13.8
Φ6	figure 3	-	-	20.5
Φ7	figure 1	2.4	-	15.5
Φ7H	figure 2	2.4	-	15.5
Φ8	figure 1	3.2	-	15.5
Φ8H	figure 2	3.2	-	15.5