

Meet requirements of USB 2.0

UX Series



■ Features

1. Certified to perform as required in USB 2.0 Standard

Tested and certified by USB Association approved laboratory the connectors will perform at transmission speeds up to 480Mbps.

2. Designed for Low Skew performance

The distance between twisted pairs conductors (i.e., contact nos. 2 and 3) is of equal electrical length, for receptacle and plug, resulting in zero theoretical skew.

3. Controlled Termination of Individual Conductors

The termination part of the contact is firmly attached in the molded insulator body. Hirose's Electric unique design of the metal shield prevents short circuits, allowing the overmold resin to flow in the terminated area.

By not using heat shrinkable tubing (or any other additional process), the non-twisted part of the conductors is very short, suppressing any unwanted impedance disturbances in the termination area.

4. Ease of mating and handling

Thin design of the plug assembly and the overmold section allows use in small spaces.

The plug also incorporates a build-in snap-lock feature, providing tactile verification of the full and secure mating of plug and receptacle.

5. Two types of metal shields

Two styles of the receptacle metal shield are available, depending on the customer's PCB design requirement:

- Surface Mount Termination
- Solder Dip Type

6. Printed Circuit Board placement features

Precise location on the board can be accomplished using receptacle assemblies with or without the positioning boss.

7. Board placement with Automatic Equipment

Receptacle assemblies are provided with a heat resistant flat surfaces, removable after completion of the soldering process and are supplied on the reels.

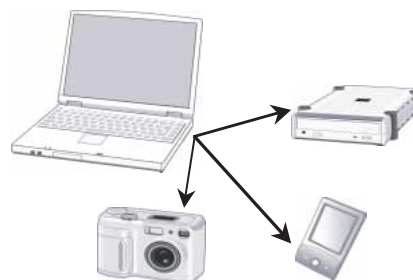
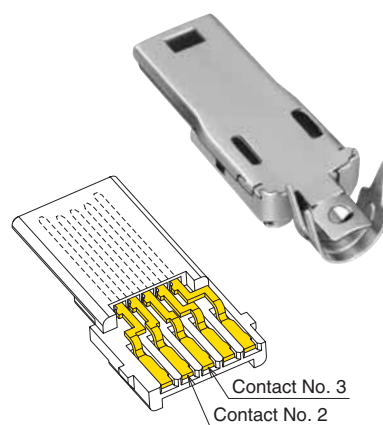
8. RoHS Compliant

All components and materials comply with the requirements of the EU Directive 2002/95/EC.

9. Support of Non-halogen Cable

Wiring harness can be arranged in non-halogen cable types.

Note: Non-halogen items are not covered in the current USB 2.0 Standard.



■ Applications

Personal and mobile computer peripheral equipment, data terminals, digital cameras, MP3 players, PDA's, GPS and other devices utilizing standard USB protocols

■Product Specifications

Ratings	Current rating	1 A	Operating temperature range	-30°C to +75°C (Note 1)
	Voltage rating	5 V AC		

Item	Specification	Conditions
1.Contact resistance	50 m ohms max.	Measured at 100 mA
2.Insulation resistance	100 M ohms min.	Measured at 100 V DC
3.Dielectric Withstanding Voltage	No flashover or insulation breakdown	100 V AC / one minute
4.Capacitance	2 pF min.	Measured at 1000 ± 10Hz between adjacent contacts
5.Mating/un-mating forces	Mating : 35N max. Un-mating : 7N min.	With corresponding connector.
6.Durability (mating / un-mating)	Contact resistance: 70 m ohms max. Un-mating force: 3N min.	5000 cycles
7.Vibration	No electrical discontinuity of 1 ms or more.	Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 2 hours in each of the 3 axis.
8.Shock		Frequency: 50 to 2000 Hz, 15 minutes in each of the 3 axis.
9.Shock		Acceleration of 490 m/s ² , 11 ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis
10.Thermal shock	Contact resistance: 70 m ohms max.	Temperature: -55°C → +20°C to +35°C → +85°C → +20°C to +35°C Time: 30 → 2 to 3 → 30 → 2 to 3 (Minutes) 10 cycles
11.Humidity	Insulation resistance: 10 M ohms min. (Dry state)	168 hours at -10°C to +65°C and Relative Humidity of 90% to 98% 7 cycles
12.Salt Spray	Contact resistance: 70 m ohms max.	Exposed to 5% salt water solution for 48 hours
13.Solderability	Wet state, with solder coverage area over 95%	Soldering temperature: 245°C Recommended solder immersion time: 2 to 3 seconds

■Materials

●Receptacles

Part	Material	Finish	Remarks
Insulator	Synthetic resin	Color: Black	UL94V-0
Contacts	Copper alloy	Contact area: Gold plating Termination area: Tin alloy plating	———
Metal shield	Copper alloy	Tin alloy plating	———
Pick-and-place flat plate	Polyamide	———	———

●Plugs

Part	Material	Finish	Remarks
Insulator	Synthetic resin	Color: Black	UL94V-0
Contacts	Copper alloy	Contact area: Gold plating Termination area: Tin alloy plating	———
Metal shield	Steel	Tin alloy plating	———
Over-mold compound (Note 1)	PVC	Black (Note 2)	———

Note 1: The over-mold compound is applied at the time of the termination of the plug with the cable and can not be ordered as a separate part.

Note 2: The over-molding and cables can be supplied in a wide range of colors.

Please contact your Hirose Electric account representative for details.

■Ordering information

●Receptacles

UX 60 A - MB - 5 S T
① ② ③ ④ ⑤ ⑥ ⑦

●Plugs

UX 40 A - MB - 5 P
① ② ③ ④ ⑤ ⑥

●Plug Harnesses

UX 40 A - MB - 5 P A - 1000 - 1001
① ② ③ ④ ⑤ ⑥ ⑨ ⑩ ⑪

①	Series name	UX
②	Contact wiring	60: SMT type 40: Solder wiring type
③	Receptacle serial indication	A: Without positioning post
④	Connector type	MB: Mini B type
⑤	Number of contacts	5
⑥	Contact type	S: Female contact P: Male contact
⑦	Metal shield termination	T: SMT type 8: Solder dip type (Dip length 0.8) (Note 1)
⑧	Plug serial indication	A: Type supporting thick cable
⑨	Reverse side connector type	A: Standard A type
⑩	Cable length	1000: 1000 mm (Note 2)
⑪	Serial number	(Note 3)

Note 1: Types with different dip style termination lengths can also be provided.

Note 2: Various cable lengths can be provided.

Note 3: Detailed specifications of the harness items can be supplied.

●Metal Shield SMT Type With Positioning Post

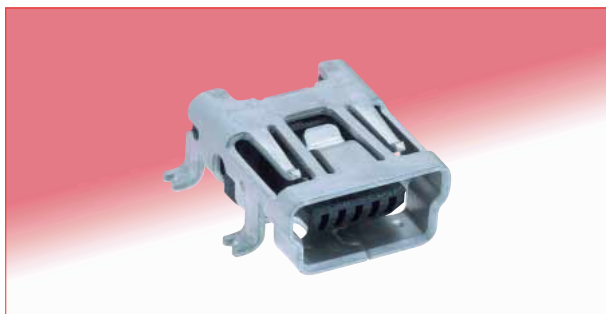
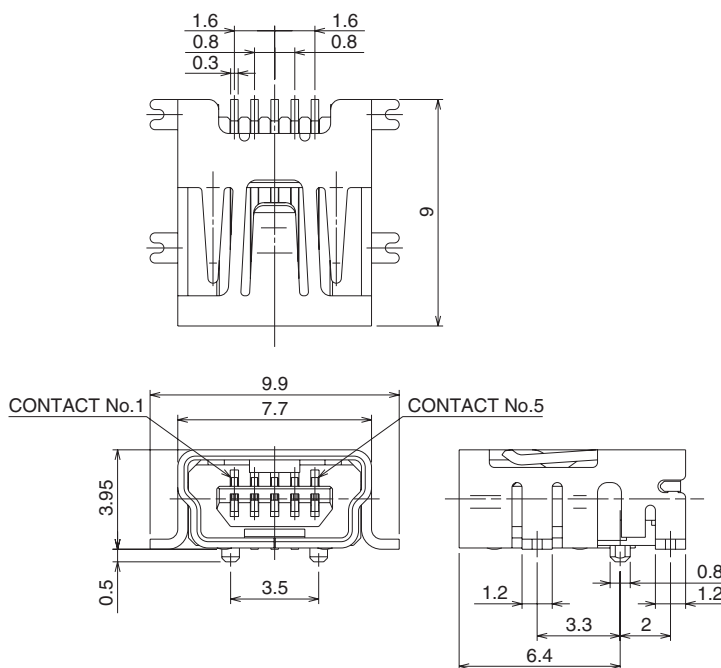


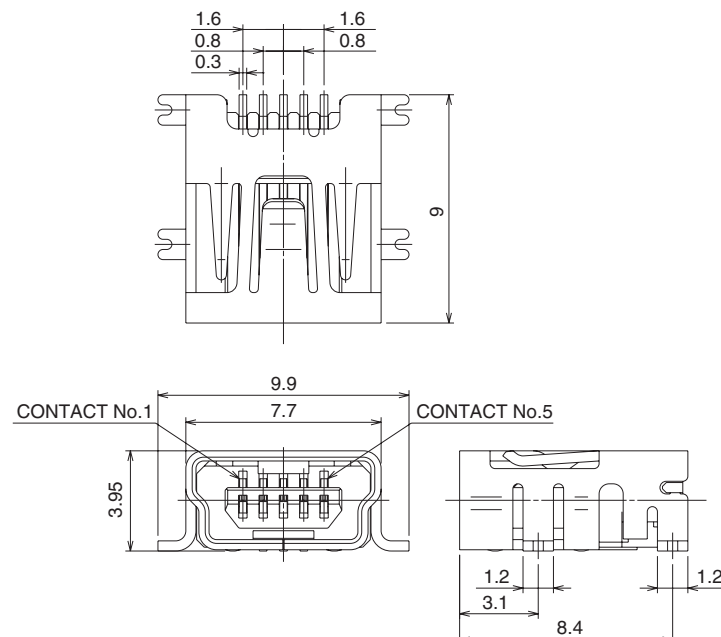
Figure 1: Dimensions of the connector. The diagram shows a cross-section of a connector assembly with the following dimensions and specifications:

- Overall Width:** 8.4
- Central Width:** 3.5
- Overall Height:** 6.4 min.
- Top Section Dimensions:**
 - Top width: 8.4
 - Top thickness: 0.4 max.
 - Top spacing: 3.5 min. (No conductive traces)
 - Top hole diameter: $\phi 0.9$ (hole)
 - Top hole spacing: 0.8, 1.6, 1.6, 0.8
 - Top hole diameter: 2.2
- Bottom Section Dimensions:**
 - Bottom width: 8.4
 - Bottom thickness: 0.4 max.
 - Bottom spacing: 3.5 min. (No conductive traces)
 - Bottom hole diameter: $\phi 0.9$ (hole)
 - Bottom hole spacing: 0.8, 1.6, 1.6, 0.8
 - Bottom hole diameter: 2.2
- Connector Outside Diameter:** 3.5
- Other Dimensions:**
 - 2.5 (top left)
 - 2 (top right)
 - 1.25 (bottom left)
 - 3.3 (bottom right)

Note : Embossed tape reel packaging(1,000 pieces/reel)
Order by the number of reels.



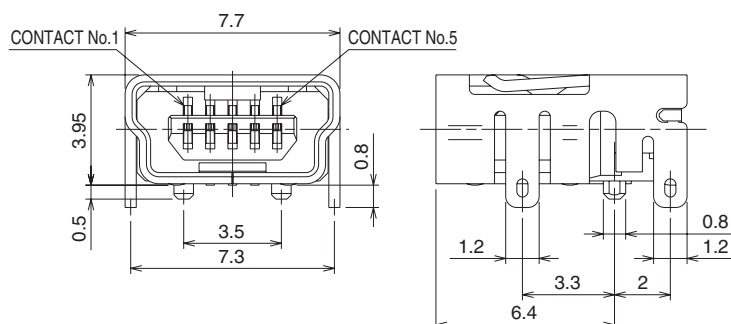
Note : Embossed tape reel packaging(1,000 pieces/reel)
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Technical drawing of a connector cross-section showing dimensions and material specifications:

- Top Dimensions:**
 - Overall width: 7.3
 - Left side width: 3.5 min.
 - Internal spacing: 0.8, 1.6, 1.6, 0.8
 - Right side width: 0.5
- Vertical Dimensions:**
 - Top section height: 0.4 max.
 - Section below top: 2
 - Section below that: 1.25
 - Section below that: 3.3
 - Section below that: 3.25
 - Section below that: 6.4 min.
 - Bottom section height: 7.7 min.
- Material and Surface Specifications:**
 - (No conductive traces) - Top surface
 - (No conductive traces) - Right side surface
 - (No conductive traces) - Bottom surface
 - Connector outside diameter - Left side surface
 - 7.7 min. (No conductive traces) - Bottom surface
- Other Features:**
 - Ø0.9(hole) - Hole in the left side
 - R0.4(Through hole) - Fillet radius on the right side

Technical drawing of a mechanical part. The top view shows a rectangular part with a central slot and four vertical pins. Dimensions are given in millimeters: 1.6, 0.8, and 0.3. The side view shows the profile of the part, including the pins and the central slot.



Technical drawings of the connector showing dimensions for the main body and the plug.

Main Body Dimensions:

- Overall width: 4.9
- Width of the top section: 2.3 mni.
- Width of the bottom section: 1 min.
- Height of the top section: 0.35 min.
- Height of the bottom section: 0.65 min.

Plug Dimensions:

- Overall width: 5.6 mni.
- Width of the top section: 1.1 max.

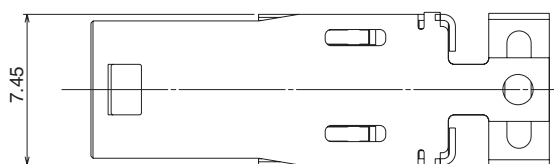
UX Series Meet requirements of USB 2.0

Plugs

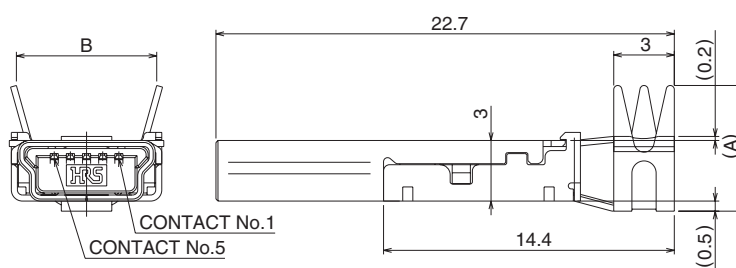
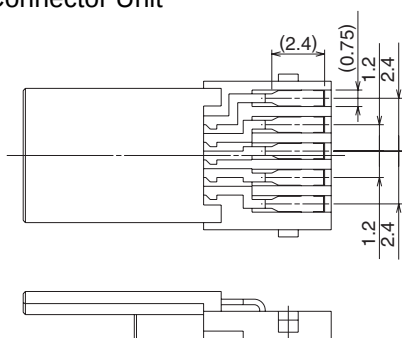


●Assembly Components

(non-terminated, without overmold)



●Connector Unit



Part No.	CL No.	Dimension A	Dimension B	Applicable Cable (Note)	RoHS
UX40-MB-5P	240-0004-7	6.2	6.95	$\phi 3.5 \sim 4.0$	YES
UX40A-MB-5P	240-0005-0	7.85	7.85	$\phi 4.1 \sim 4.6$	

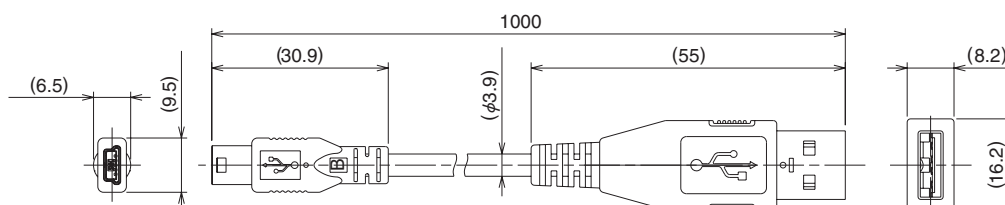
Note: Recommended cable diameters. Actual diameters may vary due to manufacturing process variations.

Contact Hirose for recommendations when using cables with different diameters than the recommended.

Plug Harnesses

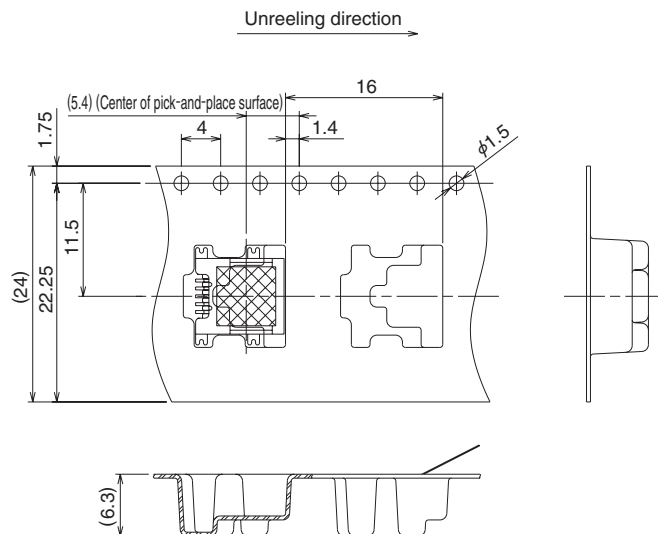


Part No.	CL No.	RoHS
UX40-MB-5PA-1000-2003	240-2003-5	YES



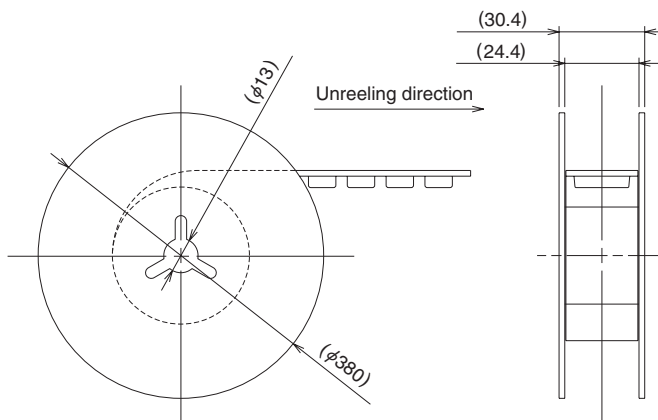
◆ Receptacles Packaging Specification

● Embossed Carrier Tape Dimensions

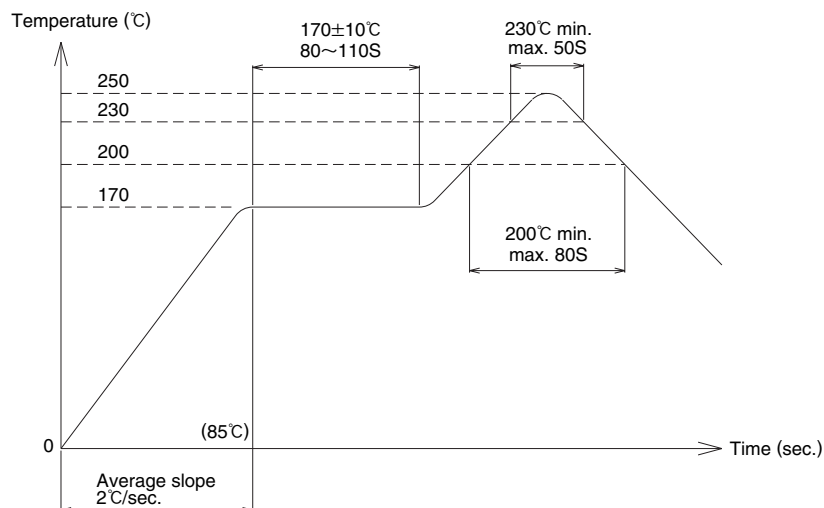


Note: Embossed tape reel packaging(1,000 pieces/reel) Order by the number of reels.

● Reel Dimensions



◆ Recommended Temperature Profile (Receptacles)



Recommended Conditions

Reflow :	IR
Solder:	Paste, 96.5 Sn/3.0 Ag/0.5 Cu
Test board:	Glass epoxy 35mm×35mm×0.8 mm thick.