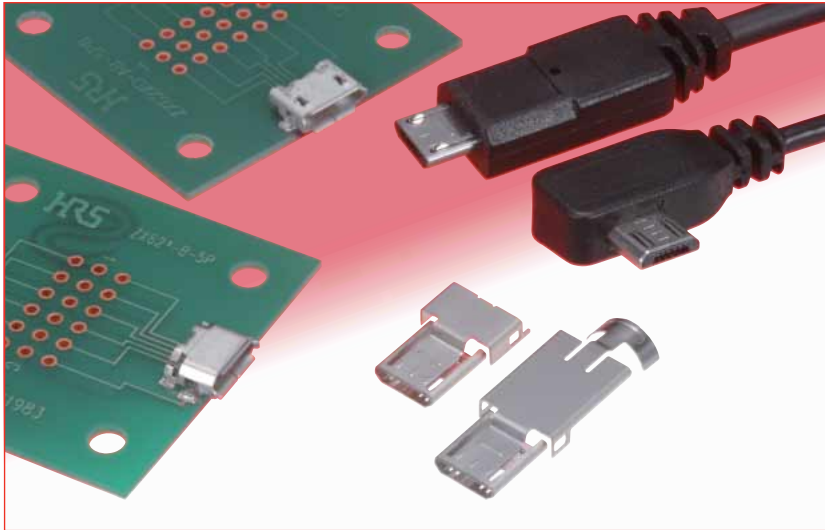


Micro-USB connectors meeting requirements of USB 2.0 Standard

ZX Series



Note: Contact us to ascertain whether a TID number has been acquired for an individual product.

■ Overview

Extremely small high reliability connectors complying with physical, electrical and environmental requirements of Micro-USB standard (USB 2.0). Receptacles and plugs are available in a wide variety of mounting and termination configurations, permitting their use in various applications.

■ Features

1. Size reduction

Compared with the standard Mini-B connectors, the size of ZX connectors is reduced by approximately 60% while still allowing a high-speed data transfer of 480 Mbps, specified in USB 2.0.

2. Receptacle styles

Two interface configurations: Micro-B and Micro-AB in standard, mid-mount and reverse mounting styles. SMT and through-hole (shell) PCB board terminations

3. Plug styles

Corresponding to the receptacle styles, two interface configurations: Micro-B and Micro-A, with direct wire or PCB wire soldering. Several plug styles can be used for data transmission, earphone or charging applications.

4. High durability

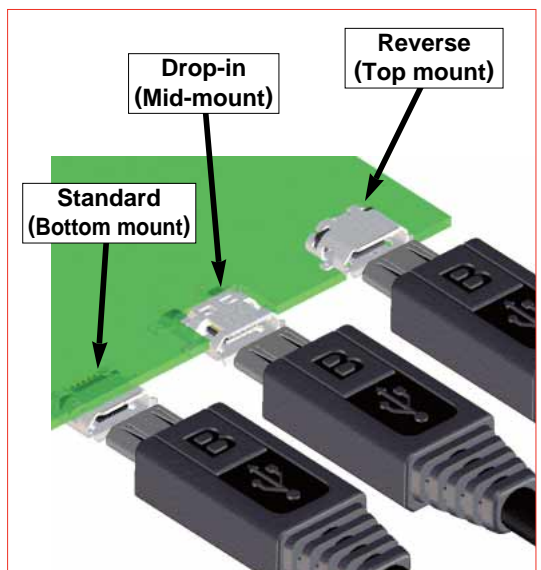
Unique contact and lock configuration assures high durability while maintaining easy insertion / disconnection. Fully mated condition (when mated with corresponding HRS connector) is confirmed by a definite tactile sensation

5. RoHS compliant

All components and materials comply with the requirements of EU directive 20/95/EC

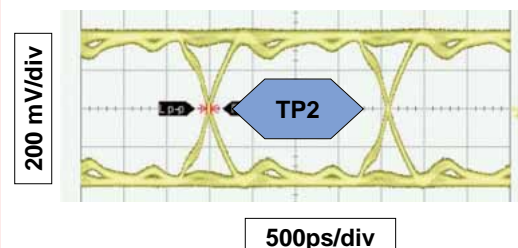
■ Applications

Mobile phones, PDA, portable music players, digital cameras, digital camcorders and other applications requiring high reliability Micro-B interface connectors.



USB 2.0 Hi-Speed (480 Mbps)

Eye pattern measurement results:
Measured with USB 2.0 cable 2.4 m long



ZX Series Micro-USB connectors meeting requirements of USB 2.0 Standard

Specifications

Ratings	Current rating	1 A (per contact) or 1.8 A (contacts No. 1 and 5) and 0.5 A (contacts No. 2, 3, and 4)	Voltage rating	30 V AC
			Operating temperature range	-30°C to +85 °C
			Storage temperature range	-30 °C to +85°C

Item	Specification	Conditions
1. Contact resistance	30 mΩ max.	100 mA
2. Withstanding voltage	No flashover or insulation breakdown	100 V AC / 1 minute
3. Capacitance	2 pF max.	Between adjacent contacts at 1,000 Hz (AC voltage)
4. Durability	Contact resistance: Rise from initial value of 10 mΩ max.	10,000 cycles
5. Total insertion/removal force	Insertion force: 35 N max., Removal force: 8 N min.	Mated with corresponding connector

Materials

Receptacles

Part	Material	Finish	Remarks
Insulator	LCP	Micro-B: Black, Micro-AB: Gray	UL94V-0
Contacts	Copper alloy	Selective gold plated	_____
Shell	Stainless steel	Tin alloy plating	_____

Plugs

Part	Material	Finish	Remarks
Insulator	Synthetic resin	Micro-A: White, Micro-B: Black	UL94V-0
Contacts	Copper alloy	Selective gold plated	_____
Lock spring	Stainless steel	_____	_____
Shell	Stainless steel	Nickel plated or unfinished	_____

Ordering information

Receptacles

ZX 62 RD - B - 5 P * 8
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

Plugs

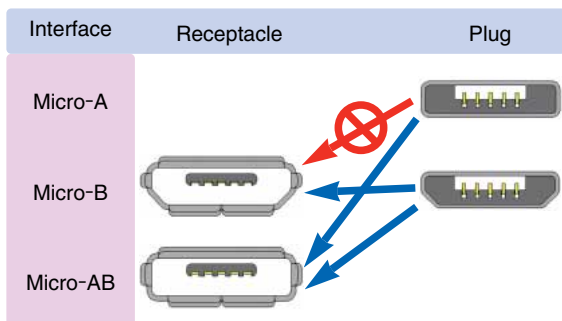
ZX 40 - B - 5 S * - UNIT
 ① ② ④ ⑤ ⑥ ⑦ ⑨

ZX 40 - B - SLDA
 ① ② ④ ⑨

① Series name		ZX
② Termination style		10's: Right-angle PCB wire, SMT 20's: Straight, PCB wire 40's: Direct wire 60's: Right-angle, PCB wire 80's: Cradle SMT
③ Board mounting style (Receptacles)	Blank D R RD M	Standard (Bottom mount) Standard (Bottom mount) through hole Reverse (Top mount) Reverse (Top mount) through hole Drop-in (Mid-mount)
④ Mating side configuration	A B AB	Micro-A Micro-B Micro-AB
⑤ Number of contacts		5
⑥ Contact type	P S	Receptacle- Male Plug – Female
⑦ Serial No.		
⑧ Shell termination style – Receptacles	Blank 8	SMT Through hole (solder tab length: 0.8mm)
⑨ Components-plugs	UNIT SLD*	Assembly (Insulator/contact/lock) Cover (Note 1)

Note 1: Classifiers such as A, B, and C are entered for *.

Product Styles Table



ZX Series Micro-USB connectors meeting requirements of USB 2.0 Standard

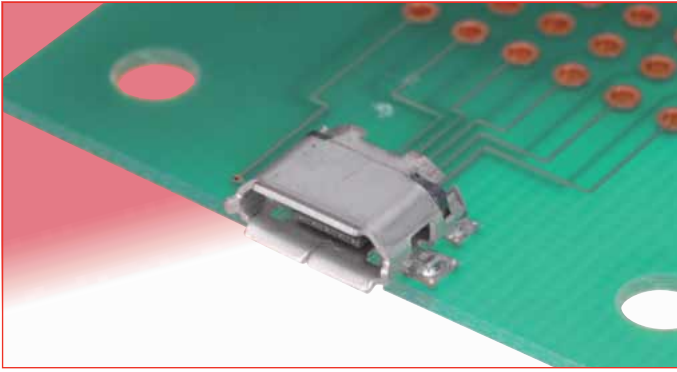
■ Configurations

	Mating side configuration	Application	Mounting, termination styles/wire attachment	Part Number	3D Image	Page	
R e c e p t a c l e s	Micro-B	Standard	SMT	ZX62-B-5PA		4	
			SMT + DIP	ZX62D-B-5P8		4	
		Reverse	SMT	ZX62R-B-5P		5	
		Drop-in	SMT	ZX62M-B-5P		5	
	Micro-AB	Standard	SMT	ZX62-AB-5PA		6	
			SMT + DIP	ZX62D-AB-5P8		6	
		Reverse	SMT	ZX62R-AB-5P		7	
			SMT + DIP	ZX62RD-AB-5P8		7	
	P l u g s	Micro-B	Data	Direct wire soldering	Assembly (insulator/contacts/lock) :ZX40-B-5S-UNIT(12) Cover-top :ZX40-B-SLDA Cover-bottom :ZX40-SLDB		9 and 10
				PCB wire soldering (right angle, through hole)	Assembly (insulator/contacts/lock) :ZX10-B-5S-UNIT(12) Cover-top :ZX10-B-SLDA Cover-bottom :ZX10-SLDB(3.3)		11 and 12
Earphone			PCB wire soldering (straight, through hole)	Assembly (insulator/contacts/lock) :ZX20-B-5S-UNIT(12) Cover :ZX20-B-SLDC		13	
Charging			PCB wire soldering (SMT)	Assembly (insulator/contacts/lock) :ZX64-B-5S-UNIT(14) Cover-top :ZX64-B-SLDA Cover-bottom :ZX64-SLDB		14 and 15	
Charging Earphone			PCB wire soldering (SMT)	Assembly (insulator/contacts/lock) :ZX64-B-5S-UNIT(14) Cover :ZX64-B-SLDC		14 and 16	
Micro-A		Data	Direct wire soldering	Assembly (insulator/contacts/lock) :ZX40-A-5S-UNIT Cover-top :ZX40-A-SLDA Cover-bottom :ZX40-SLDB		17 and 18	
C r a d l e s		Micro-B	Cradle	SMT + DIP	ZX80-B-5S	With lock	19
	SMT + DIP			ZX80-B-5SA	Without lock	19	

Note: 1. Part numbers in the Plugs section of the above table list the Assembly (insulator/contacts/locks) and the corresponding Shields/Covers.
 Note: 2. Optional Printed Circuit boards for the Plugs are shown for reference only. Not supplied with applicable connectors.
 Note: 3. The color of the insulators body in the Assembly (insulator/contacts/lock) shown in the 3D Image column above is blue for clarity. Refer to the Materials (Page 2) for correct colors.

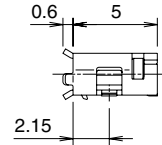
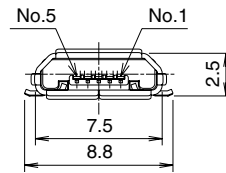
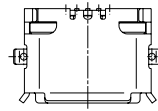
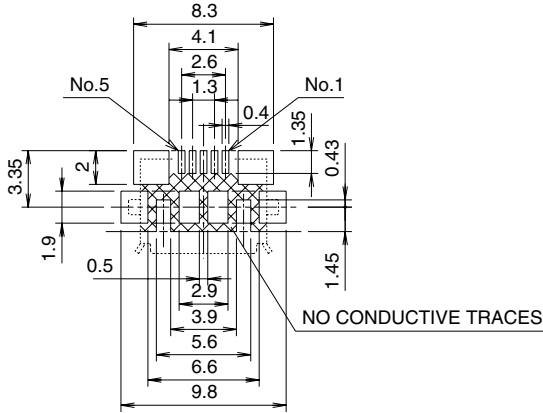
■ Receptacles

● Micro B - Reverse (Top mount) Shell SMT



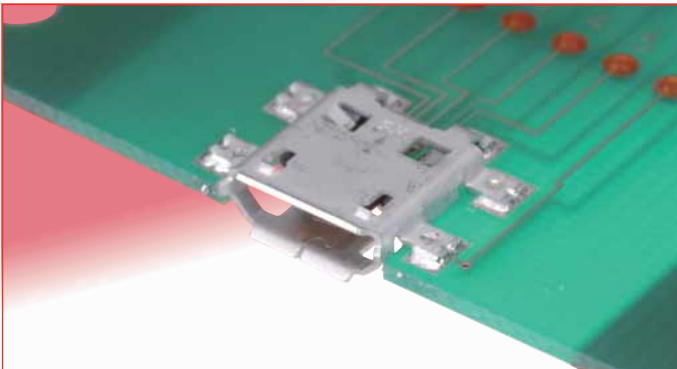
Part Number	CL No.	Packaging	RoHS
ZX62R-B-5P	242-0028-8	2,000 pieces per reel	YES

◆ Recommended PCB mounting pattern

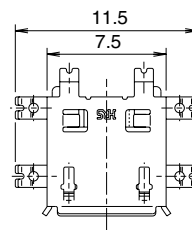


● Micro B - Drop-in (Mid-mount), Shell SMT

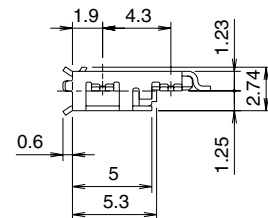
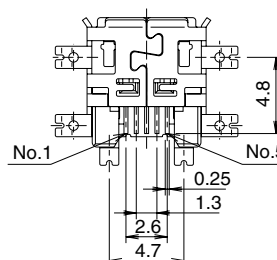
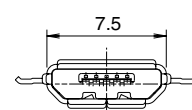
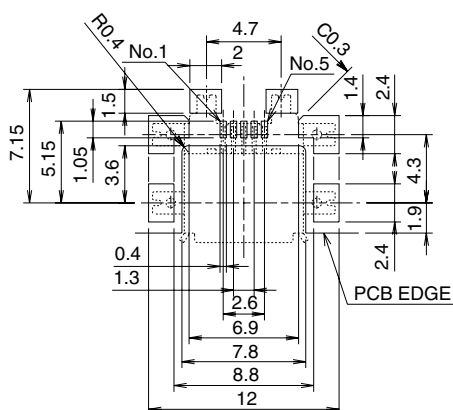
All dimensions: mm



Part Number	CL No.	Packaging	RoHS
ZX62M-B-5P	242-0024-7	2,000 pieces per reel	YES



◆ Recommended PCB mounting pattern

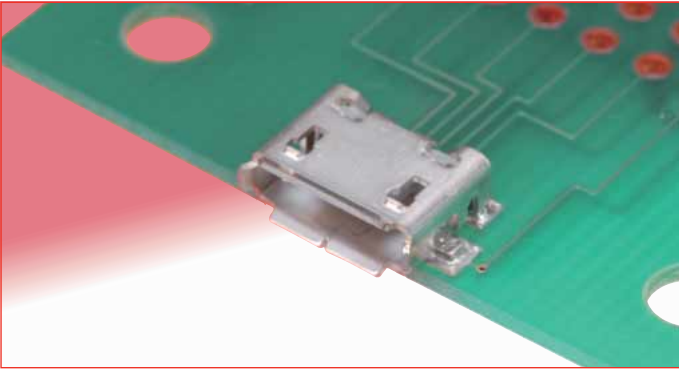


All dimensions: mm

ZX Series Micro-USB connectors meeting requirements of USB 2.0 Standard

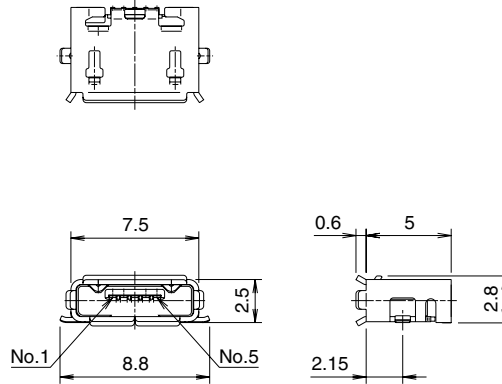
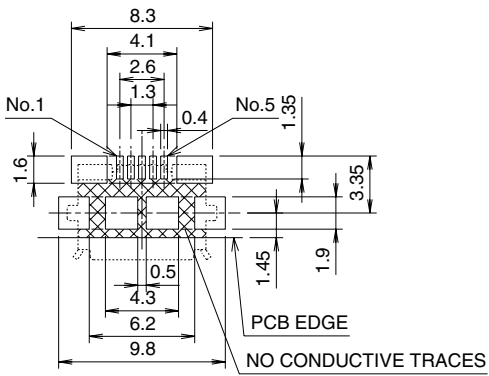
■ Receptacles

● Micro AB - Standard (Bottom mount), Shell SMT



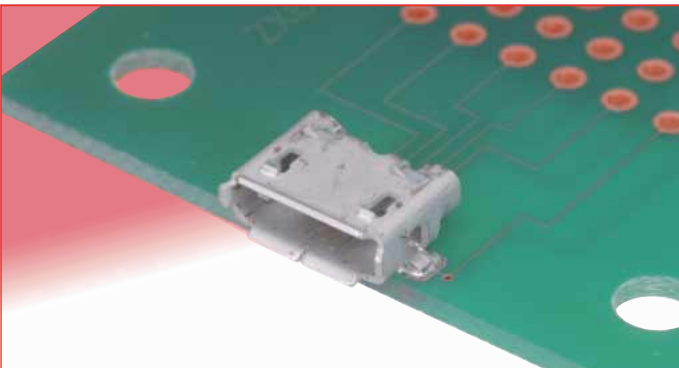
Part Number	CL No.	Packaging	RoHS
ZX62-AB-5PA	242-0045-7	2,000 pieces per reel	YES

◆ Recommended PCB mounting pattern



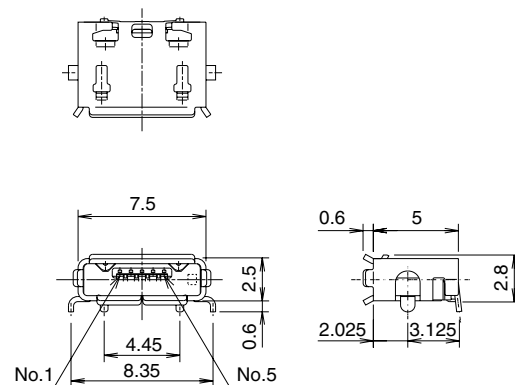
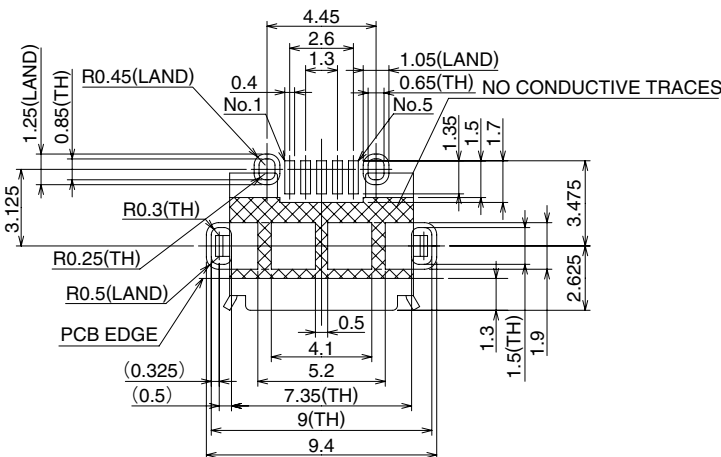
● Micro AB - Standard (Bottom mount), Shell through hole

All dimensions: mm




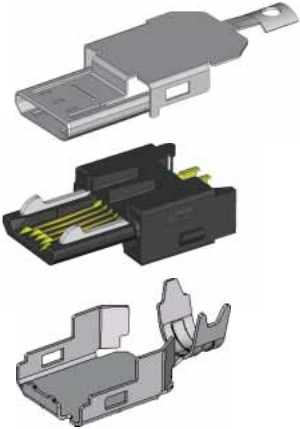

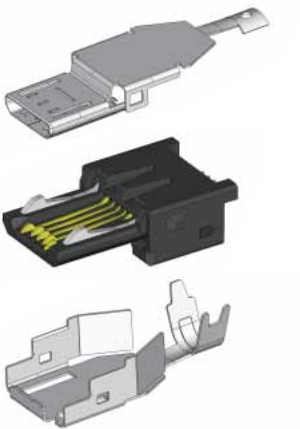

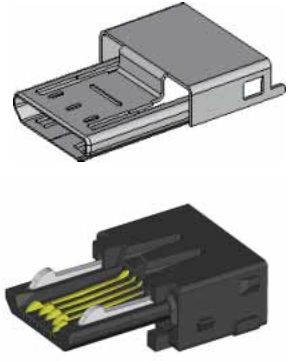

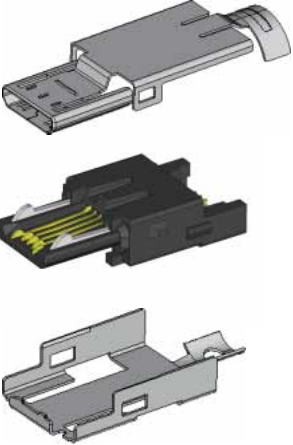
Part Number	CL No.	Packaging	RoHS
ZX62D-AB-5P8	242-0027-5	2,000 pieces per reel	YES

◆ Recommended PCB mounting pattern



All dimensions: mm

ZX Series Micro-USB connectors meeting requirements of USB 2.0 Standard

Plugs – assembled (not-terminated, without overmold)	Components
<p data-bbox="237 172 688 206">ZX40 - Direct wire soldering</p> 	 <p data-bbox="1227 242 1459 276">ZX40-*-SLDA</p> <p data-bbox="1227 283 1320 304">Cover-top</p> <p data-bbox="1227 374 1459 408">ZX40-*-5S-UNIT</p> <p data-bbox="1227 412 1459 480">Assembly (insulator/contacts/lock) *No PCB required</p> <p data-bbox="1227 517 1459 551">ZX40-SLDB</p> <p data-bbox="1227 555 1354 576">Cover-bottom</p>
<p data-bbox="237 644 688 678">ZX10 - PCB wire soldering</p> 	 <p data-bbox="1227 715 1459 749">ZX10-B-SLDA</p> <p data-bbox="1227 753 1320 774">Cover-top</p> <p data-bbox="1227 844 1459 878">ZX10-B-5S-UNIT</p> <p data-bbox="1227 883 1459 951">Assembly (insulator/contacts/lock) *SMT PCB termination</p> <p data-bbox="1227 987 1459 1021">ZX10-SLDB</p> <p data-bbox="1227 1025 1354 1046">Cover-bottom</p>
<p data-bbox="237 1117 688 1151">ZX20 - PCB wire soldering</p> 	 <p data-bbox="1227 1215 1459 1249">ZX20-*-SLDC</p> <p data-bbox="1227 1253 1284 1274">Cover</p> <p data-bbox="1227 1366 1459 1400">ZX20-*-5S-UNIT</p> <p data-bbox="1227 1404 1459 1491">Assembly (insulator/contacts/lock) *Straight through hole PCB termination</p>
<p data-bbox="237 1527 688 1561">ZX64 - PCB wire soldering</p> 	 <p data-bbox="1227 1608 1459 1642">ZX64-*-SLDA</p> <p data-bbox="1227 1647 1320 1668">Cover-top</p> <p data-bbox="1227 1738 1459 1772">ZX64-*-5S-UNIT</p> <p data-bbox="1227 1776 1459 1864">Assembly (insulator/contacts/lock) *Right angle through hole PCB termination</p> <p data-bbox="1227 1934 1459 1968">ZX64-SLDB</p> <p data-bbox="1227 1972 1354 1993">Cover-bottom</p>

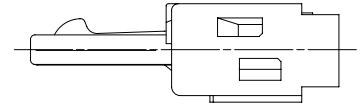
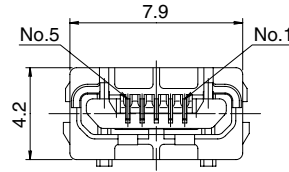
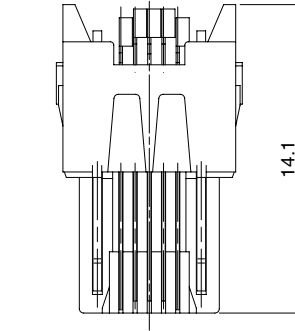
Plugs

Micro B - Assembly (insulator/contacts/lock) – Direct wire soldering



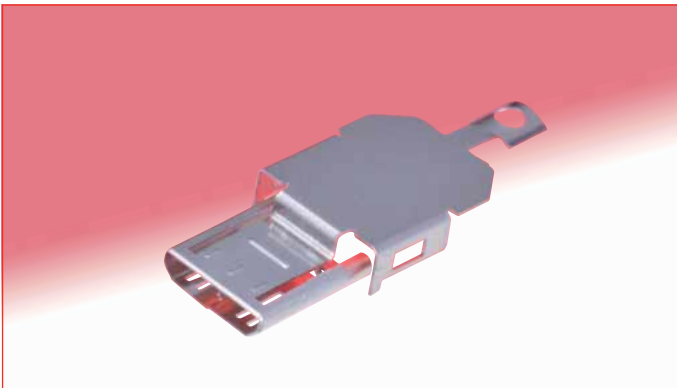
Part Number	CL No.	RoHS
ZX40-B-5S-UNIT(12)	242-0002-4-12	YES

Contact HRS for Cable Termination Procedure Manual.

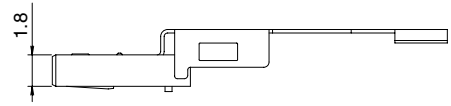
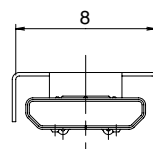
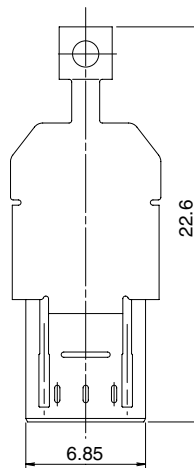


All dimensions: mm

Micro B - Component, Cover-top - Direct wire soldering



Part Number	CL No.	Packaging	RoHS
ZX40-B-SLDA	242-0003-7	4,000 pieces per reel	YES

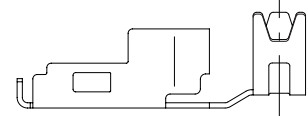
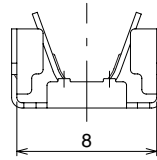
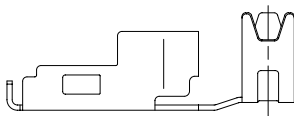
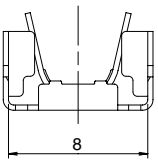
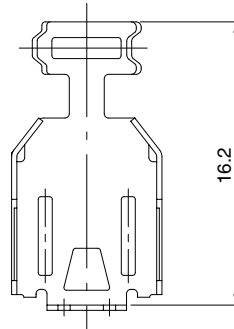
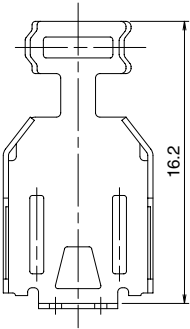
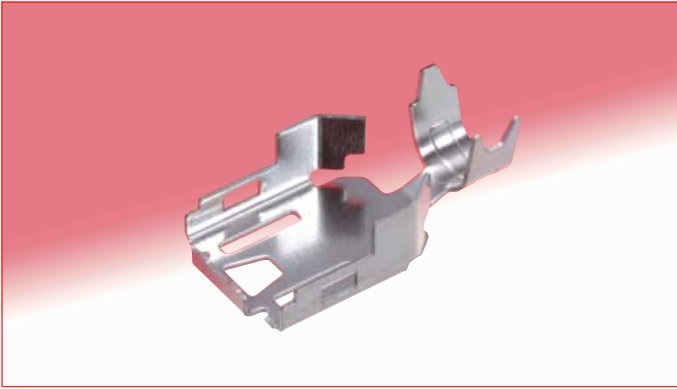


All dimensions: mm

ZX Series Micro-USB connectors meeting requirements of USB 2.0 Standard

■ Plugs

● Micro A, Micro B - Component, Cover-bottom - Direct wire soldering



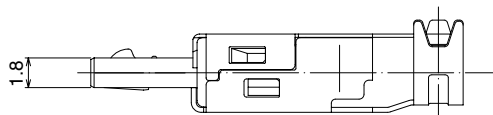
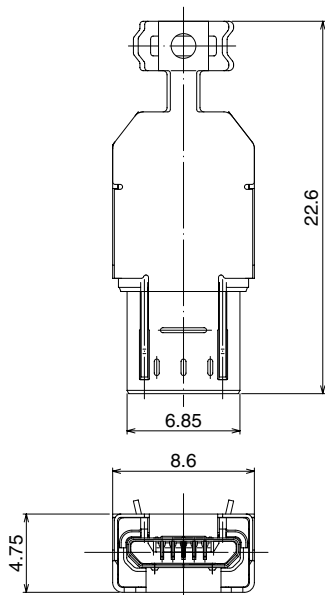
All dimensions: mm

ZX40-SLDB

ZX40-SLDB(3.3)

Part Number	CL No.	Packaging	Cable dia.	RoHS
ZX40-SLDB	242-0004-0	4,000 pieces per reel	φ3.8	YES
ZX40-SLDB(3.3)	242-0023-4		φ3.3	

● Assembled

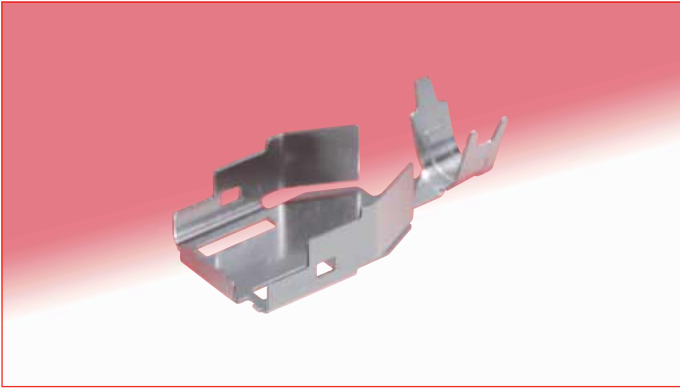


All dimensions: mm

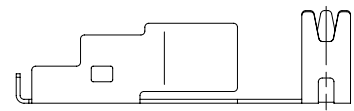
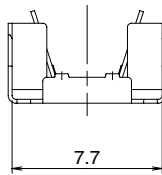
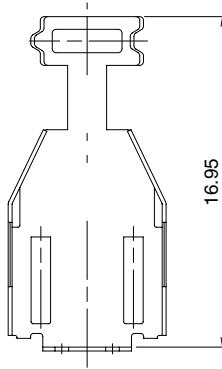
ZX Series Micro-USB connectors meeting requirements of USB 2.0 Standard

Plugs

Micro B - Component, Cover-bottom – Right angle through hole

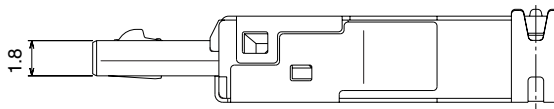
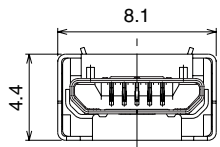
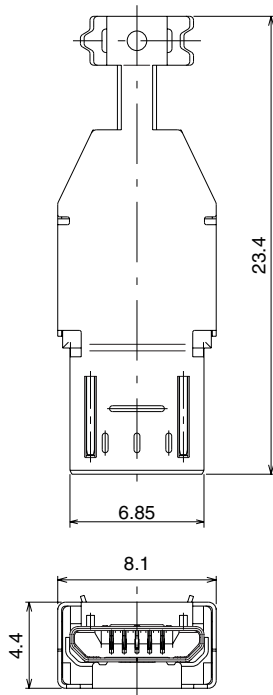


Part Number	CL No.	Packaging	RoHS
ZX10-SLDB(3.3)	242-0032-5	4,500 pieces per reel	YES



All dimensions: mm

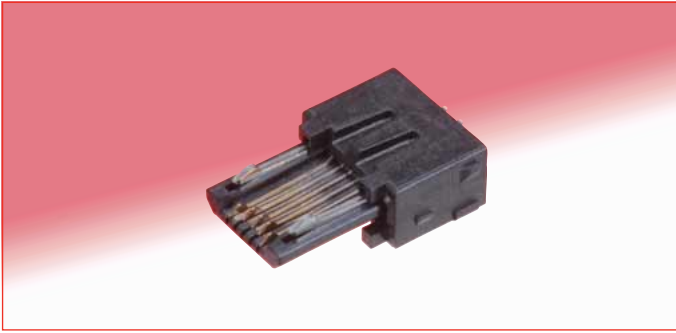
Assembled



All dimensions: mm

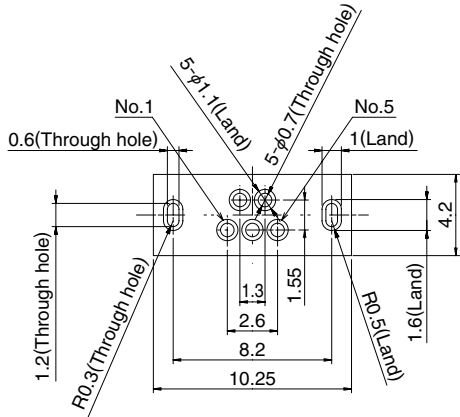
Plugs

Micro B - Assembly (insulator/contacts/lock) - Straight through hole PCB wire soldering (non-direct)



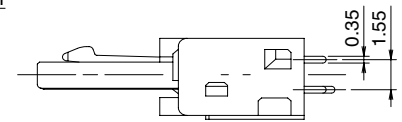
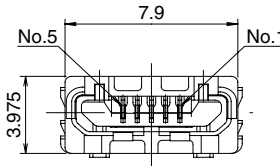
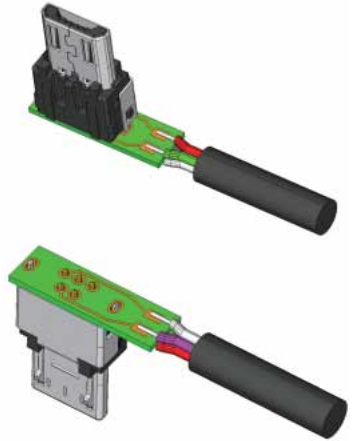
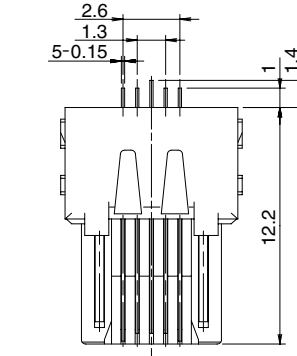
PCB mounting pattern

*PCB required (not supplied)
 Max. thickness: 0.6mm



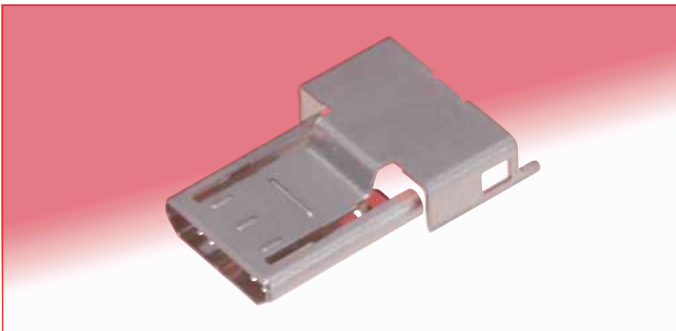
Part Number	CL No.	RoHS
ZX20-B-5S-UNIT(12)	242-0012-8-12	YES

Contact HRS for Cable Termination Procedure Manual.

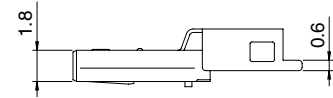
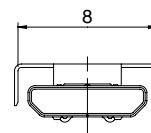
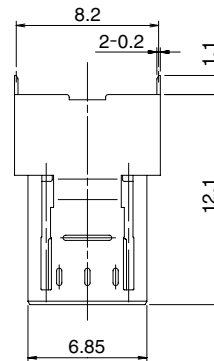


All dimensions: mm

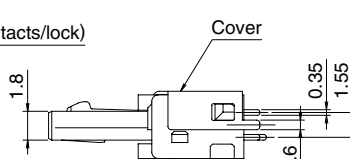
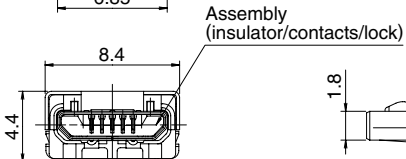
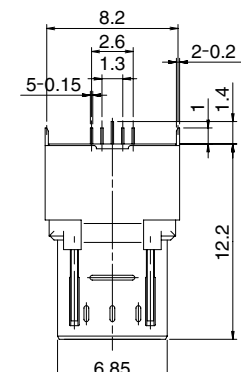
Micro B - Component, Cover - Straight, through hole



Part Number	CL No.	Packaging	RoHS
ZX20-B-SLDC	242-0022-1	4,000 pieces per reel	YES



Assembled



All dimensions: mm

ZX Series Micro-USB connectors meeting requirements of USB 2.0 Standard

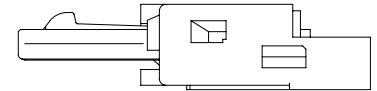
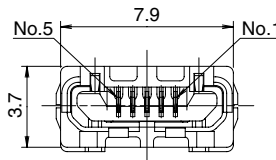
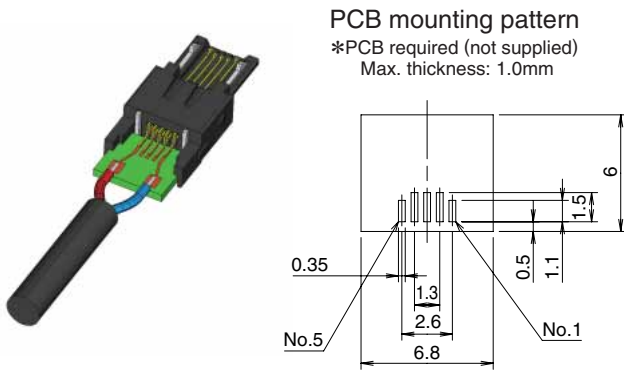
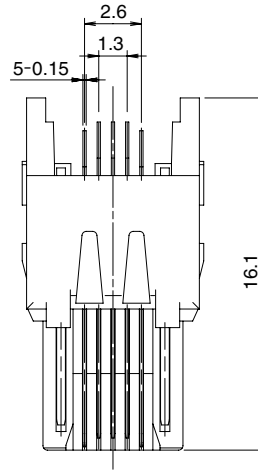
Plugs

●Micro B - Assembly (insulator/contacts/lock) - Right angle SMT



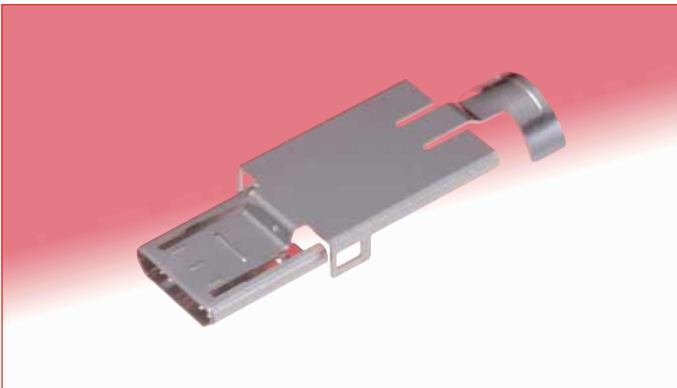
Part Number	CL No.	RoHS
ZX64-B-5S-UNIT(14)	242-0009-0-14	YES

Contact HRS for Cable Termination Procedure Manual.

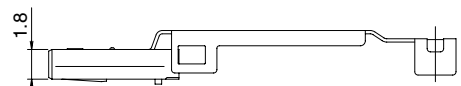
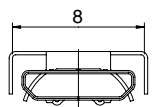
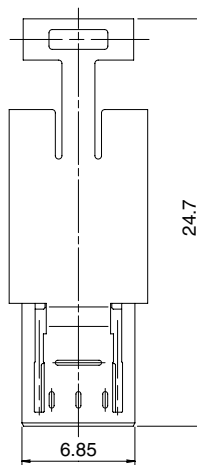


All dimensions: mm

●Micro B - Component, Cover-top – Right angle SMT



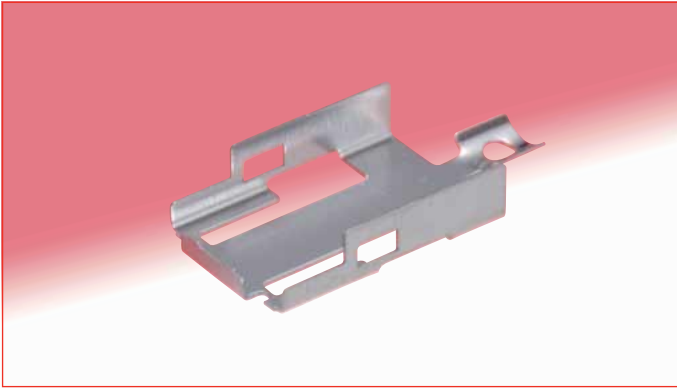
Part Number	CL No.	Packaging	RoHS
ZX64-B-SLDA	242-0013-0	4,000 pieces per reel	YES



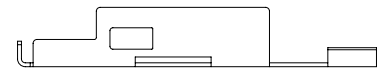
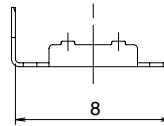
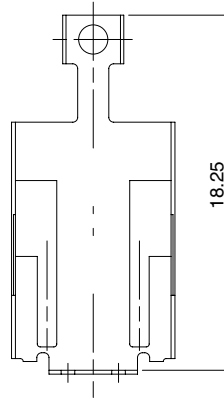
All dimensions: mm

Plugs

Micro B - Component, Cover-bottom - Right angle SMT

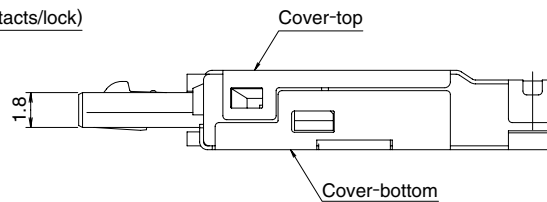
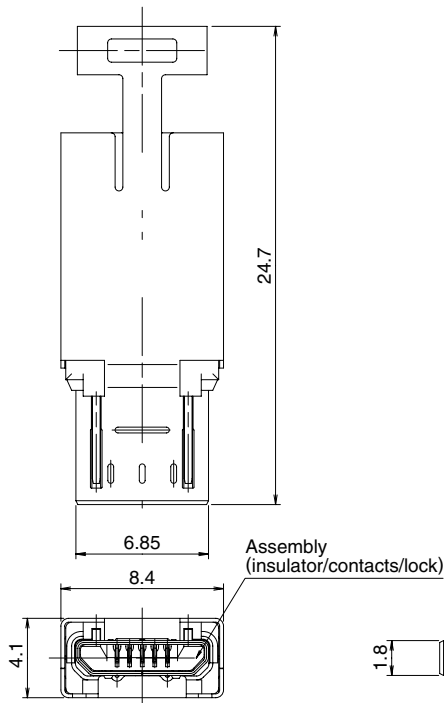


Part Number	CL No.	Packaging	RoHS
ZX64-SLDB	242-0049-8	4,000 pieces per reel	YES



Assembled

All dimensions: mm

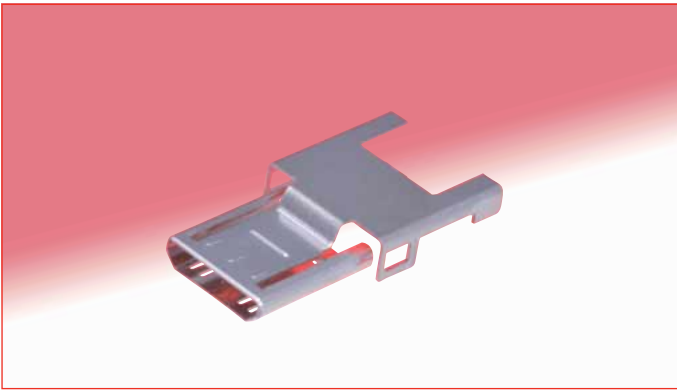


All dimensions: mm

ZX Series Micro-USB connectors meeting requirements of USB 2.0 Standard

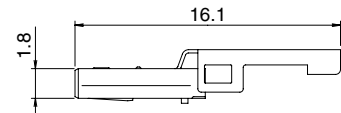
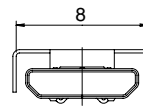
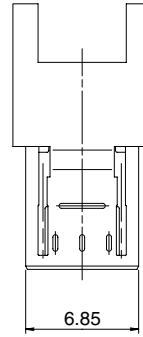
Plugs

Micro B - Component, Shell/cover – Right angle SMT

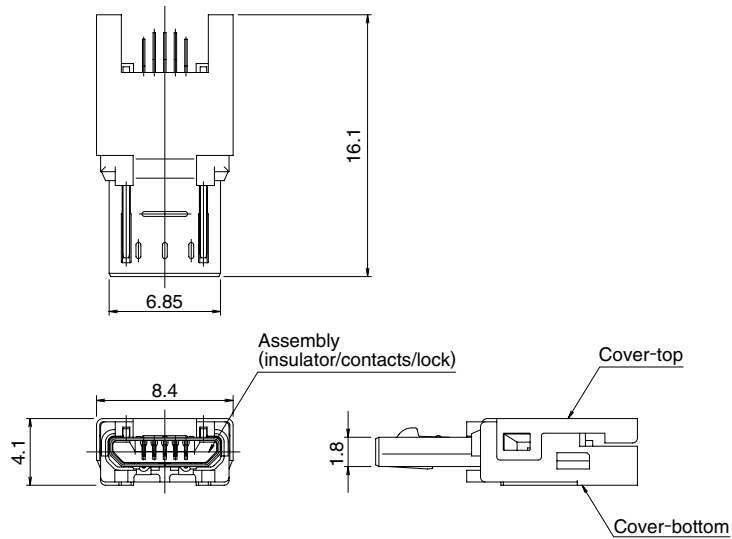


Shell/cover, without cable clamp
 This shell/cover does not require ZX64-SLDB.

Part Number	CL No.	Packaging	RoHS
ZX64-B-SLDC	242-0018-4	4,000 pieces per reel	YES



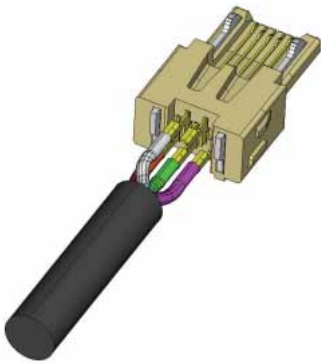
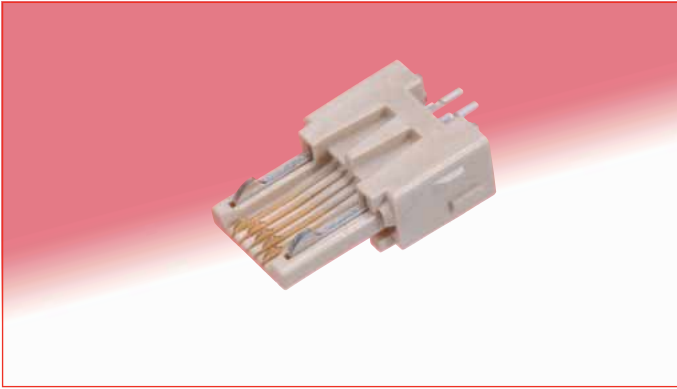
Assembled



All dimensions: mm

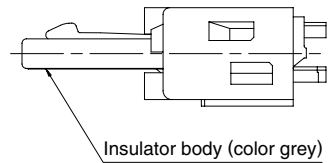
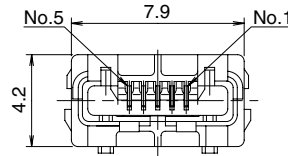
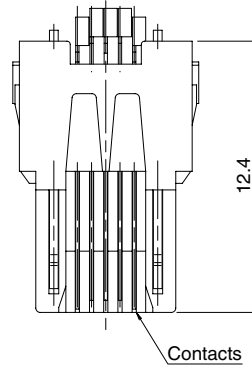
Plugs

Micro A - Assembly (insulator/contacts/lock) - Direct wire soldering



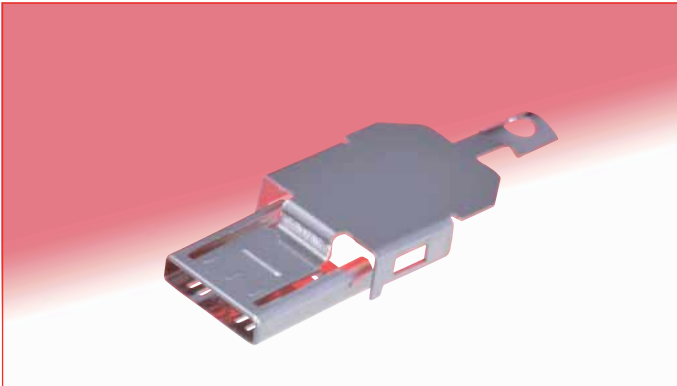
Part Number	CL No.	RoHS
ZX40-A-5S-UNIT	242-0010-2	YES

Contact HRS for Cable Termination Procedure Manual.

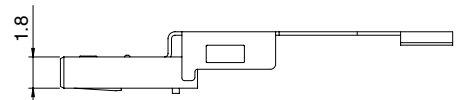
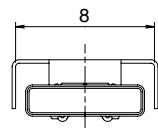
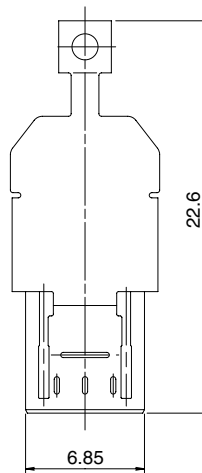


All dimensions: mm

Micro A - Component, Cover-top - Direct wire soldering



Part Number	CL No.	Packaging	RoHS
ZX40-A-SLDA	242-0011-5	4,000 pieces per reel	YES

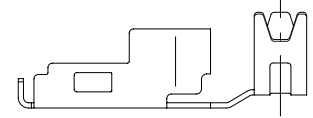
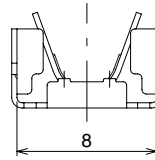
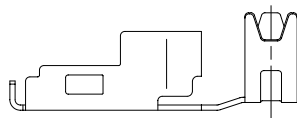
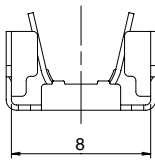
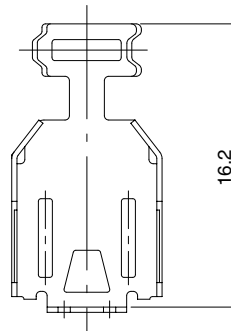
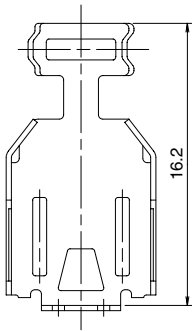
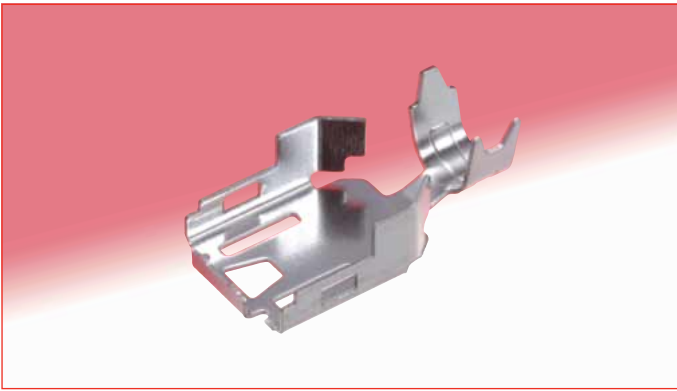


All dimensions: mm

ZX Series Micro-USB connectors meeting requirements of USB 2.0 Standard

■ Plugs

● Micro A, Micro B - Component, Cover-bottom - Direct wire soldering



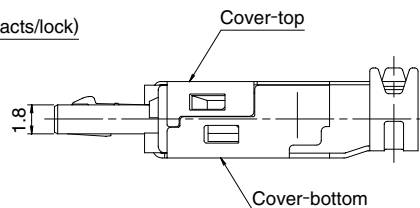
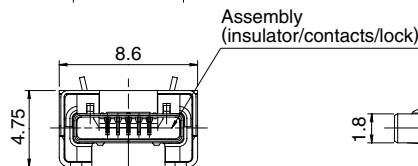
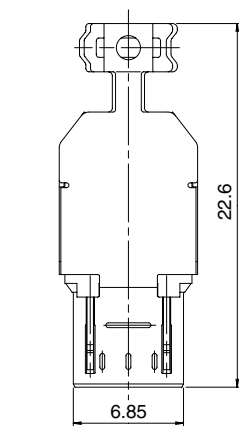
All dimensions: mm

ZX40-SLDB

ZX40-SLDB(3.3)

Part Number	CL No.	Packaging	Cable dia.	RoHS
ZX40-SLDB	242-0004-0	4,000 pieces per reel	φ3.8	YES
ZX40-SLDB(3.3)	242-0023-4		φ3.3	

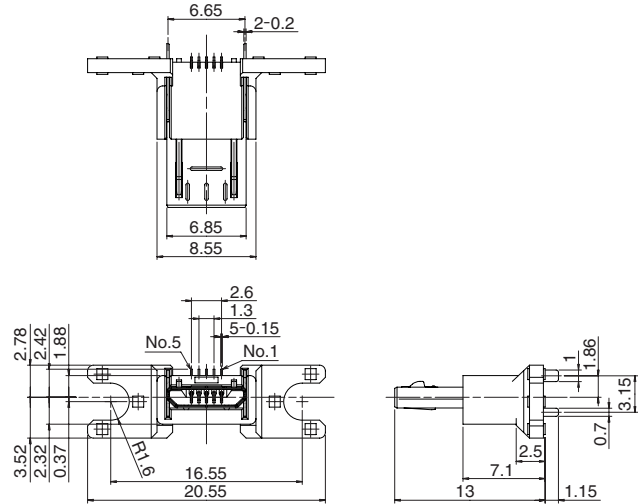
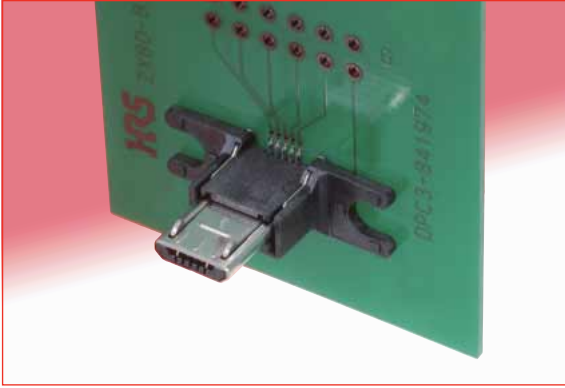
● Assembled



All dimensions: mm

■ Plug-Vertical, cradle mount, Shell through hole

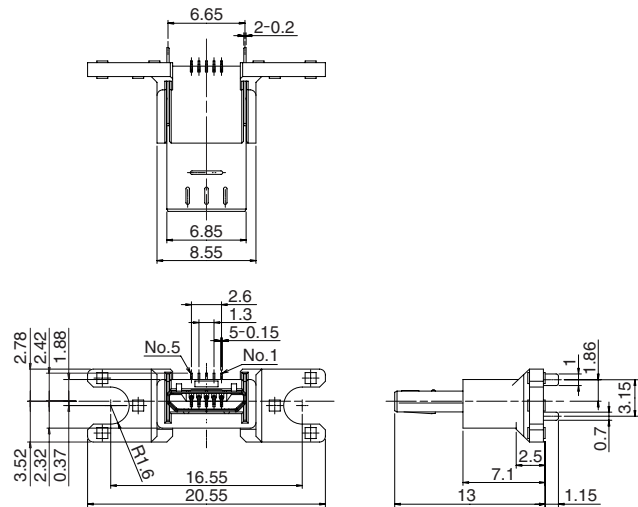
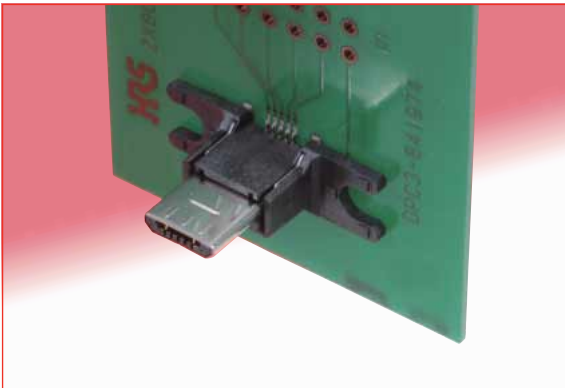
● Micro B, with lock



Part Number	CL No.	Packaging	RoHS
ZX80-B-5S	242-0017-1	100 pieces	YES

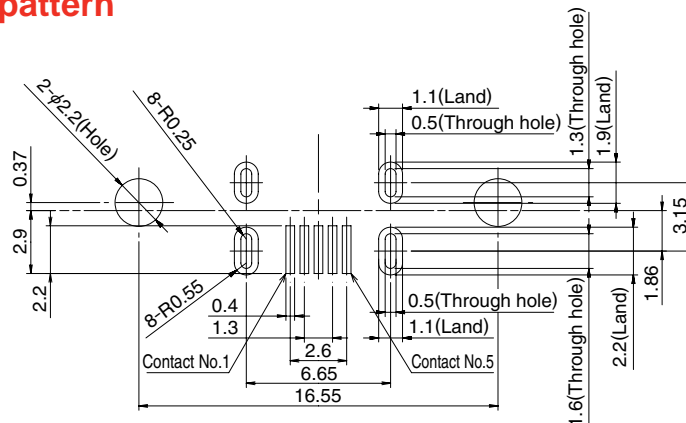
All dimensions: mm

● Micro B, without lock



Part Number	CL No.	Packaging	RoHS
ZX80-B-5SA	242-0019-7	100 pieces	YES

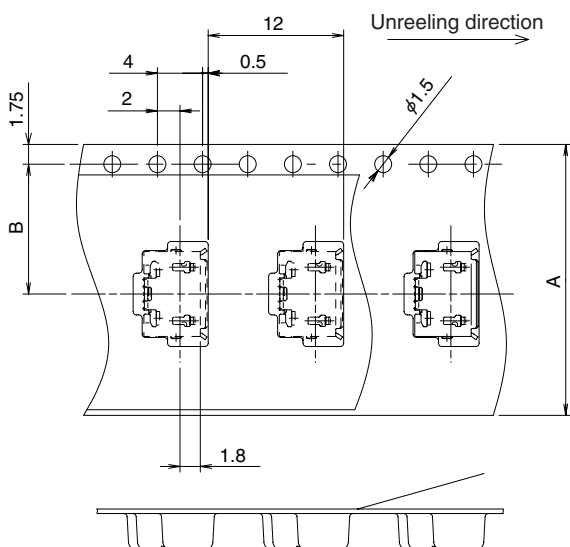
◆ PCB mounting pattern



All dimensions: mm

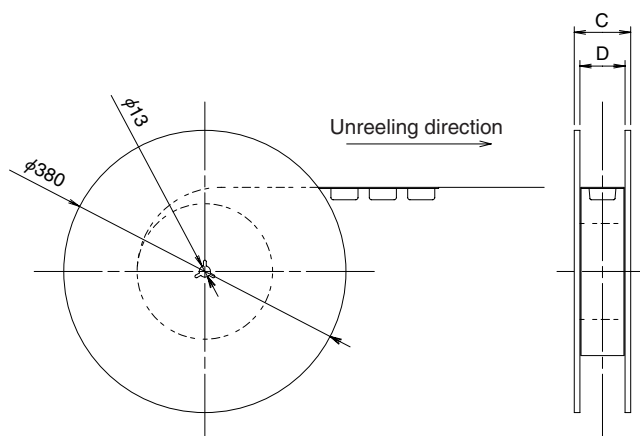
◆ Packaging Specifications

● Embossed carrier tape dimensions



Part Number	A dimension	B dimension
ZX62-B-5PA	24	11.5
ZX62-AB-5PA	24	11.5
ZX62M-B-5P	24	11.5
Other	16	7.5

● Reel Dimensions

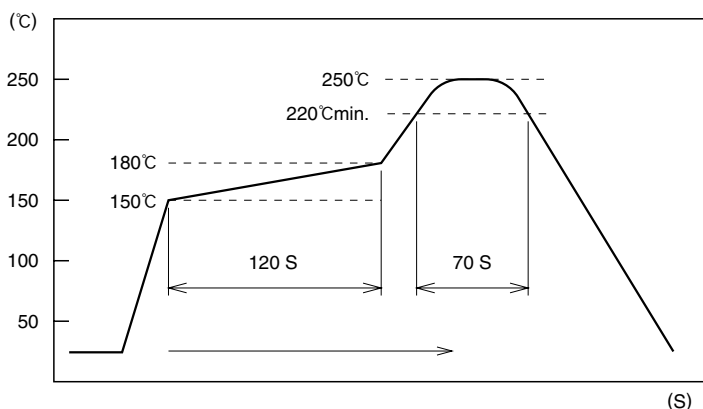


Part Number	C dimension	D dimension
ZX62-B-5PA	30.4	24.4
ZX62-AB-5PA	30.4	24.4
ZX62M-B-5P	30.4	24.4
Other	22.4	16.4

Note : Tape and reel packaging (2,000 pieces/reel).
 Order by number of reels.

◆ Recommended Temperature Profile - Receptacles

● Using lead-free solder paste



HRS test condition

Solder composition : Paste, 96.5%Sn/3.0%Ag/0.5%Cu

Test board : Glass epoxy 35mm×35mm×0.8mm thick

The temperature profile is based on the left conditions. In individual applications the actual temperature may vary, depending on solder paste type, volume/thickness and board size/thickness. Contact your solder paste and equipment manufacturer for specific recommendations.

Note 1: Up to 2 cycles of Reflow soldering are possible under the same conditions, provided that there is a return to normal temperature between the first and second cycle.

Note 2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.

◆ Precautions

1. Exercise care when handling the connectors. Do not subject them to excessive external forces when mating/un-mating.
2. Mate and un-mate as intended, holding by the overmolded body, in the correct direction. Do not un-mate by pulling on the cable.
3. Some tooling marks may be visible on the surfaces of receptacle (shell/cover). No form/fit or function is affected.
4. Appearance of the surface finishes on the receptacles may vary between production runs. No affect on form, fit or function.



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5-23, OSAKI 5-CHOME, SHINAGAWA-KU, TOKYO 141-8587, JAPAN

PHONE: 81-3-3491-9741, FAX: 81-3-3493-2933

<http://www.hirose.com>

<http://www.hirose-connectors.com>

COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE

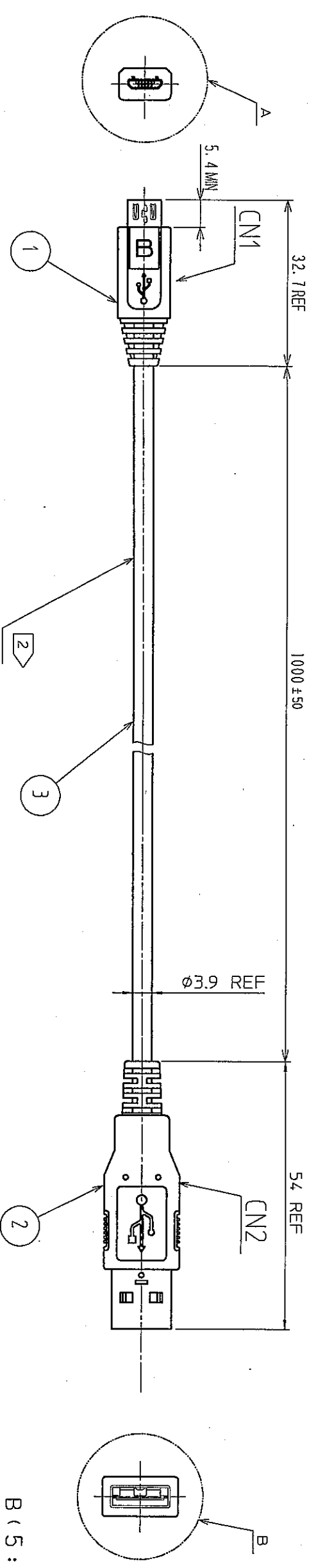
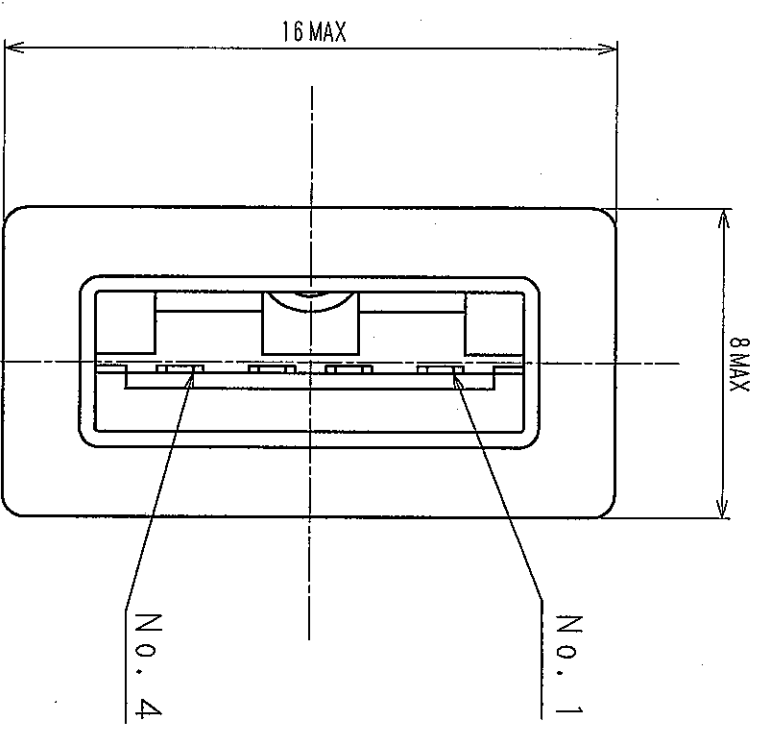
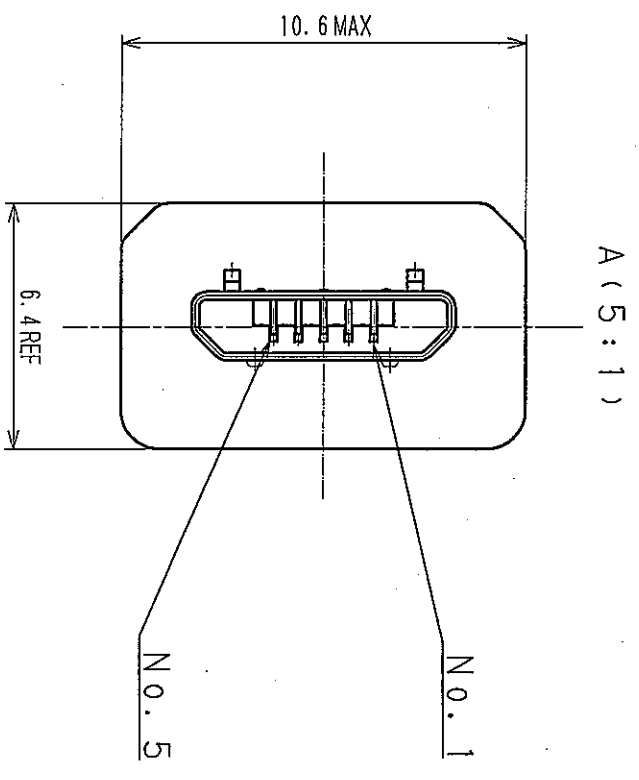


TABLE 1 WIRING DIAGRAM

CN1 CONTACT No.	1	2	3	4	5	SHELL
SIGNAL	VCC	DATA -	DATA +	NON WIRING	GND	BRAIDED WIRE + DRAIN WIRE
WIRING COLOR	RED	WHITE	GREEN		BLACK	
CN2 CONTACT No.	1	2	3		4	SHELL



NOTES
 1 REFER TO TABLE-1 FOR WIRING OF CN1 AND CN2.
 2 THIS PRODUCT IS USING THE USB CABLE(USB2.0 1PXAWG28 + 2CXAWG28)

1	CONNECTOR	ZX40-B-5S	FINISH, REMARKS	3	INTERFACE CABLE	2	CONNECTOR	STD A PLUG	2	BLACK	
NO.	MATERIAL			NO.	MATERIAL						
CODE NO.(OLD)		DRAWN		DESIGNED		CHECKED		APPROVED		RELEASED	
CL		Miyama		R. Koyama		S. Shimizu		S. Kato		ENG 07.1.11	
CL		This is subject to change without notice		07.1.11		07.1.11		07.1.11		DEPT	
SCALE 1:1		DRAWING NO. TEDC3-123632		PART NO.		CODE NO. ZX40-B-5S-1000-STDA		CL		1/1	
UNITS MM		HRS HIROSE ELECTRIC CO., LTD		CODE NO. CL		1/1					