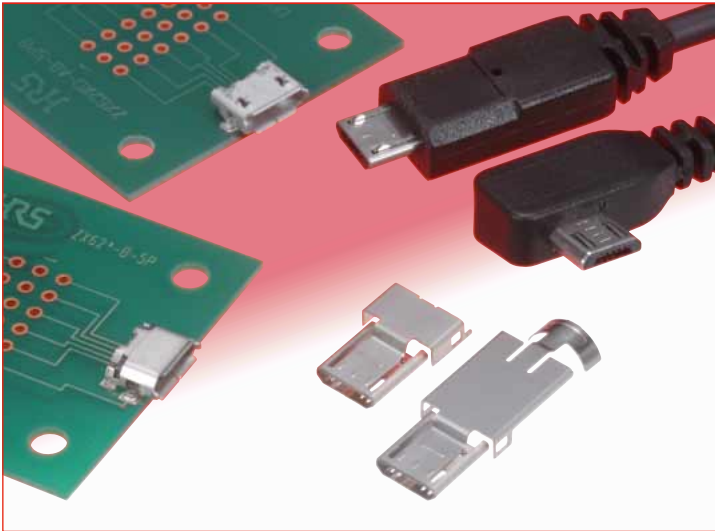


# Micro-USB connectors meeting USB 2.0 Standard

## ZX Series



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

Fig.1

### Overview

Extremely small highly reliable 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 styles, allowing their use in various applications.

### Features

#### 1. Size reduction

Compared with the standard Mini-USB 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) PC board terminations.

#### 3. Plug styles

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

#### 4. Smooth mating and unmating

A smooth mating and unmating operation results in less wear and a longer product life. The unique Hirose active latch mechanism produces a reliable and durable connector.

Even after repeated use, the user will experience a smooth click sensation when mating the connectors.

Note: The statement above only applies when using both plug and receptacles made by Hirose Electric.

#### 5. Hirose was the first company to obtain a Micro-USB certification (TID number).

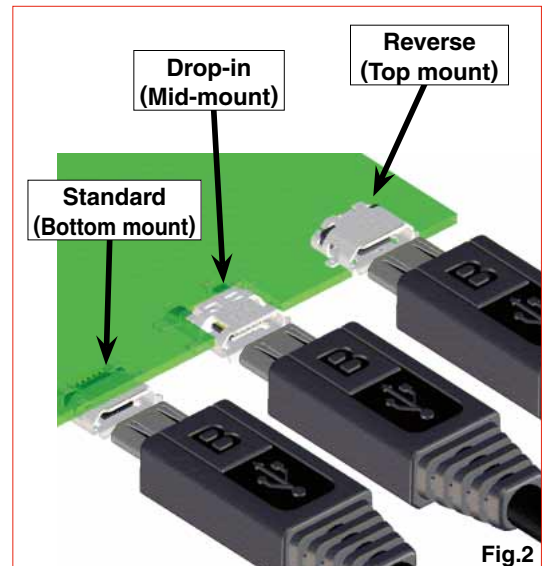


Fig.2

### USB 2.0 Hi-Speed (480 Mbps)

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

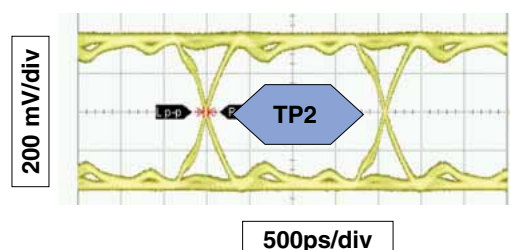


Fig.3

## ■ 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 (Note1)
			Storage temperature range	-30 °C to +60°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

Note1: Includes temperature rise caused by current flow.

Note2: Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.

## ■ 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	LCP	Micro-B: Black, Micro-AB: Gray	UL94V-0
Contacts	Copper alloy	Selective gold plated	————
Shell	Stainless steel	Tin alloy plating	————

## ■ Ordering information

### ● Receptacles

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

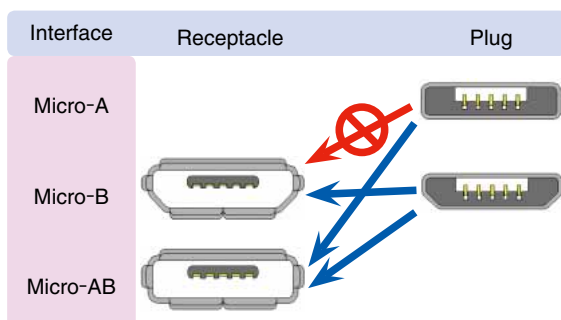
### ● Plugs

**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 Standard (Bottom mount) D Standard (Bottom mount) through hole R Reverse (Top mount) RD Reverse (Top mount) through hole M Drop-in (Mid-mount)
④ Mating side configuration	A Micro-A B Micro-B AB Micro-AB
⑤ Number of contacts	5
⑥ Contact type	P Receptacle- Male S Plug – Female
⑦ Serial No.	
⑧ Shell termination style – Blank Receptacles	SMT 8 Through hole (solder tab length: 0.8mm)
⑨ Components-plugs	UNIT Assembly (Insulator/contact/lock) Cover (Note 1)

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



## ■ Configurations

	Mating side configuration	Type	Part No.	3D Image	Page	
R e c e p t a c l e s	Micro-B	Standard	SMT	ZX62-B-5PA(11)		4
			SMT + DIP	ZX62D-B-5PA8		4
		Reverse	SMT	ZX62R-B-5P		5
		Drop-in	SMT	ZX62M-B-5P(01)		5
	Micro-AB	Standard	SMT	ZX62-AB-5PA(11)		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	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 (straight, through hole)	Assembly (insulator/contacts/lock) :ZX20-B-5S-UNIT Cover :ZX20-B-SLDC		11	
		PCB wire soldering (SMT)	Assembly (insulator/contacts/lock) :ZX64-B-5S-UNIT(14) Cover-top :ZX64-B-SLDA Cover-bottom :ZX64-SLDB		12 and 13	
		PCB wire soldering (SMT)	Assembly (insulator/contacts/lock) :ZX64-B-5S-UNIT(14) Cover :ZX64-B-SLDC		12 and 14	
	Micro-A	Direct wire soldering	Assembly (insulator/contacts/lock) :ZX40-A-5S-UNIT Cover-top :ZX40-A-SLDA Cover-bottom :ZX40-SLDB		15 and 16	
C r a d l e s	Micro-B	SMT + DIP	ZX80-B-5S	With lock	17	
			ZX80-B-5SA	Without lock	17	

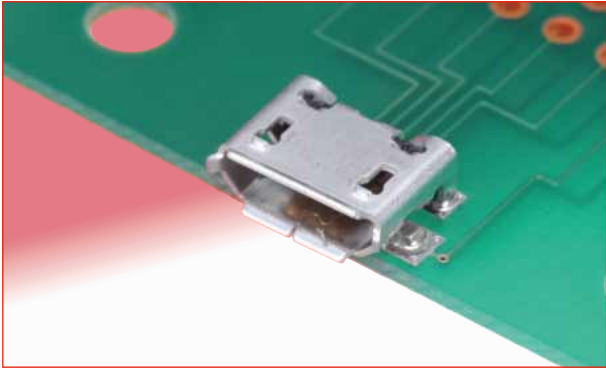
Note: 1. Part numbers in the Plugs section of the above table list the Assembly (insulator/contacts/locks) and the corresponding Shields/Covers.

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.

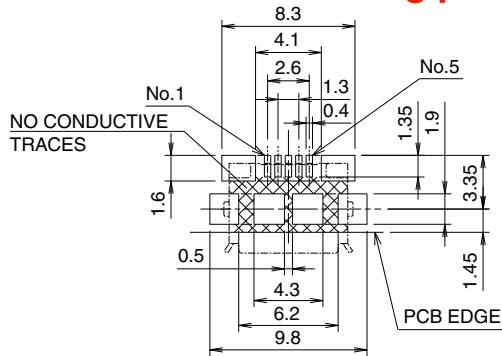
## ■ Receptacles

### ● Micro B - Standard (Bottom mount), Shell SMT



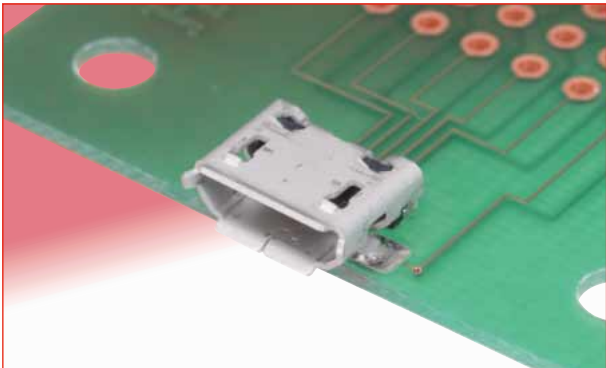
Part No.	HRS No.	Packaging
ZX62-B-5PA(11)	242-0033-8 11	3,500 pcs/reel

### ◆ Recommended PCB mounting pattern



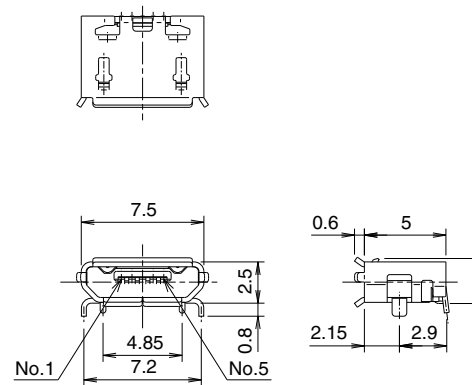
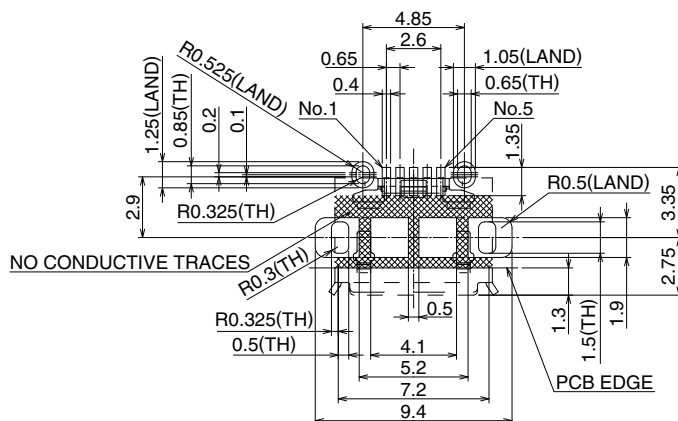
All dimensions: mm

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



Part No.	HRS No.	Packaging
ZX62D-B-5PA8	242-0056-3	2,000 pcs/reel

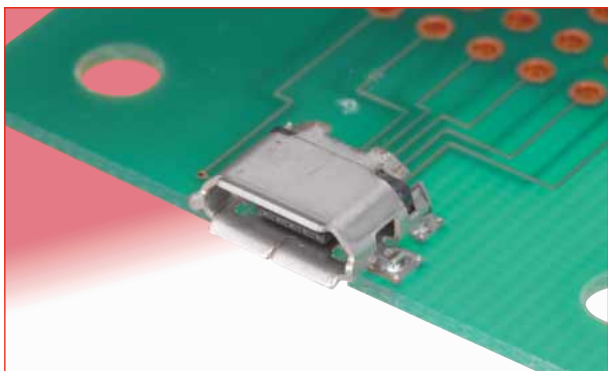
### ◆ Recommended PCB mounting pattern



All dimensions: mm

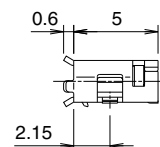
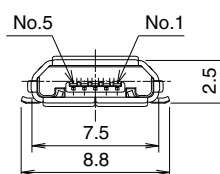
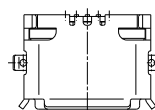
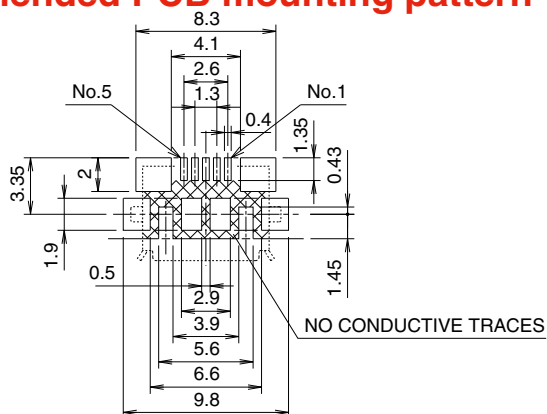
## ■ Receptacles

### ● Micro B - Reverse (Top mount) Shell SMT



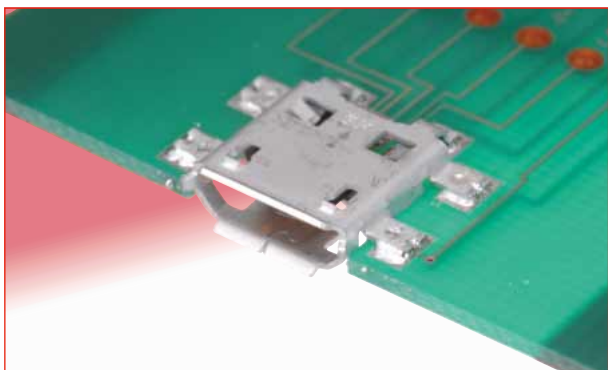
Part No.	HRS No.	Packaging
ZX62R-B-5P	242-0028-8	2,000 pcs/reel

### ◆ Recommended PCB mounting pattern

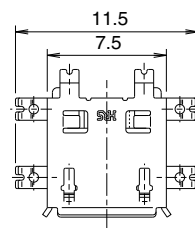


All dimensions: mm

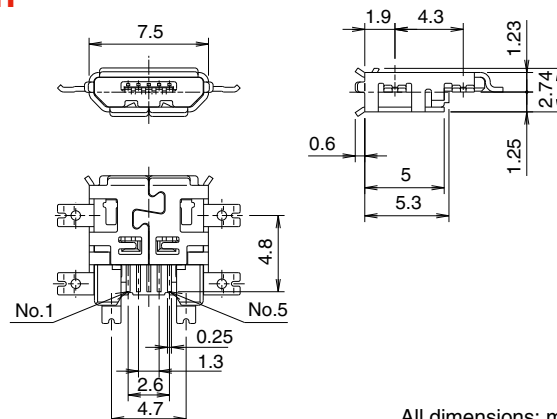
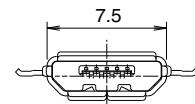
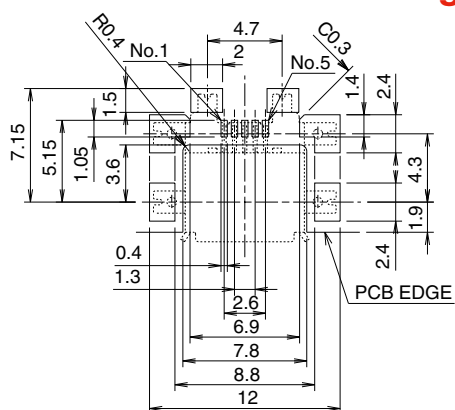
### ● Micro B - Drop-in (Mid-mount), Shell SMT



Part No.	HRS No.	Packaging
ZX62M-B-5P(01)	242-0024-7 01	1,500 pcs/reel



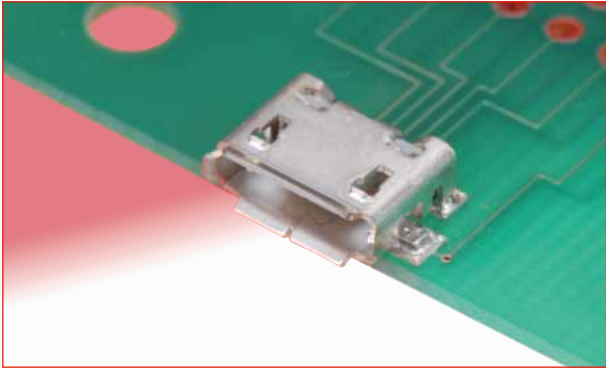
### ◆ Recommended PCB mounting pattern



All dimensions: mm

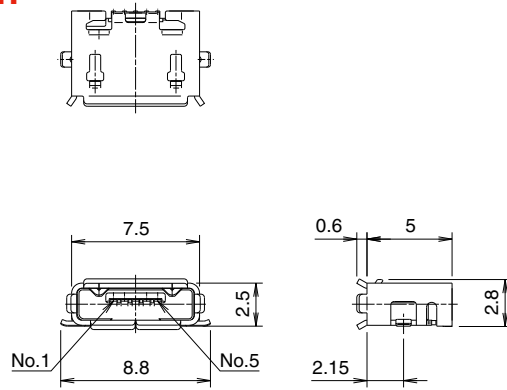
## ■ Receptacles

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



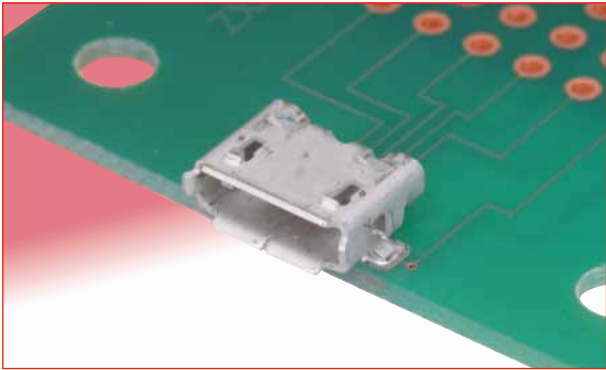
Part No.	HRS No.	Packaging
ZX62-AB-5PA(11)	242-0045-7 11	3,500 pcs/reel

### ◆ Recommended PCB mounting pattern



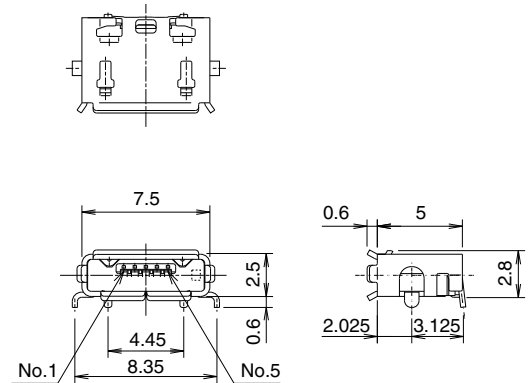
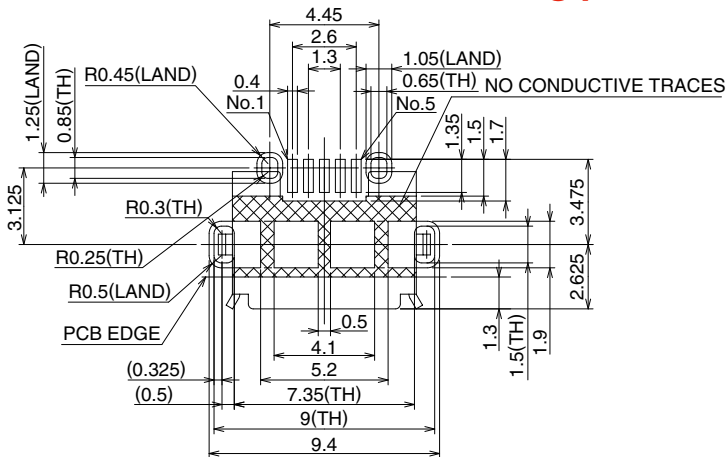
### ● Micro AB - Standard (Bottom mount), Shell through hole

All dimensions: mm



Part No.	HRS No.	Packaging
ZX62D-AB-5P8	242-0027-5	2,000 pcs/reel

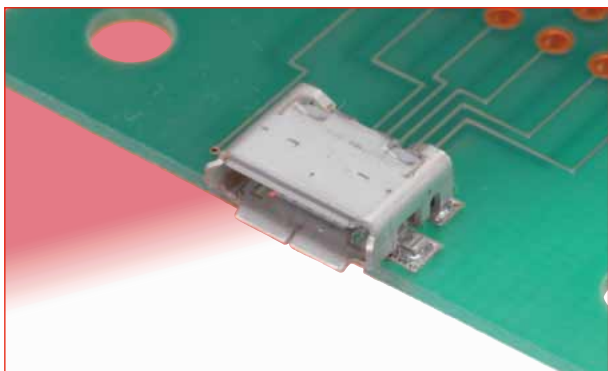
### ◆ Recommended PCB mounting pattern



All dimensions: mm

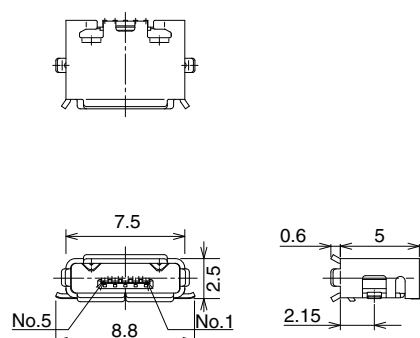
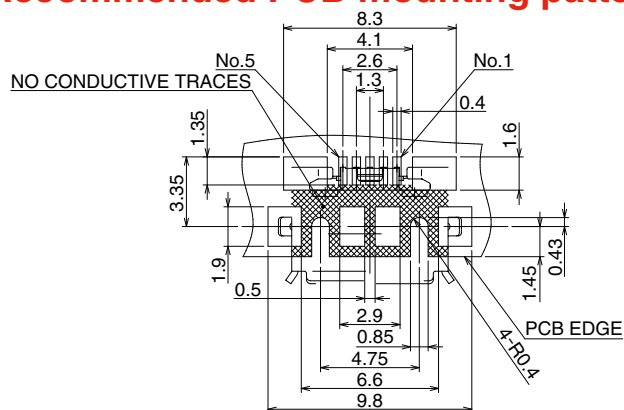
## ■ Receptacles

### ● Micro AB - Reverse (Top mount), Shell SMT



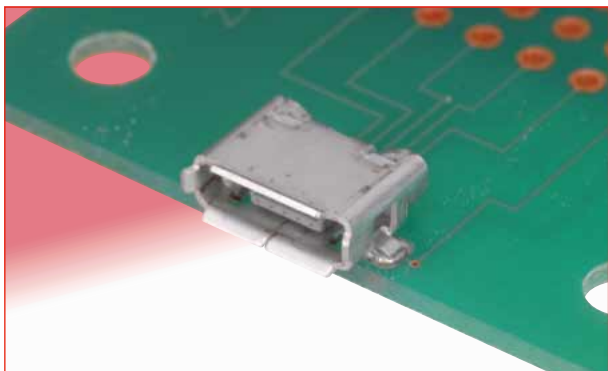
Part No.	HRS No.	Packaging
ZX62R-AB-5P	242-0035-3	2,000 pcs/reel

### ◆ Recommended PCB mounting pattern



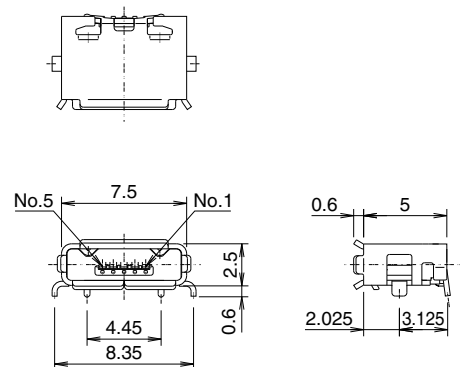
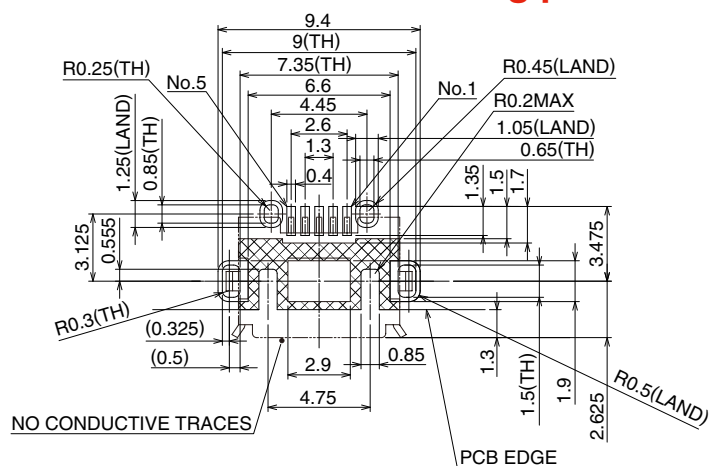
### ● Micro AB - Reverse (Top mount), Shell through hole

All dimensions: mm

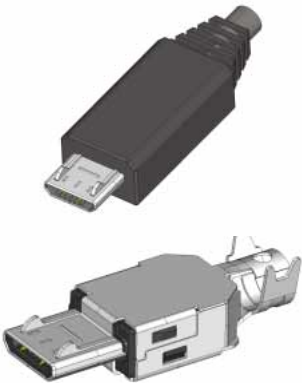
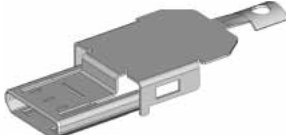

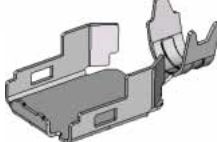

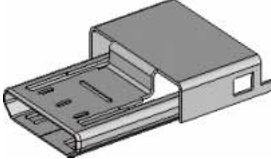

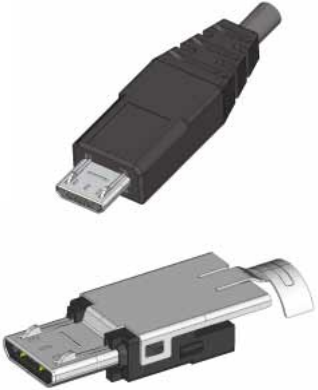
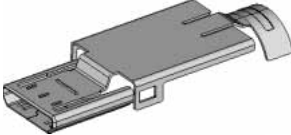

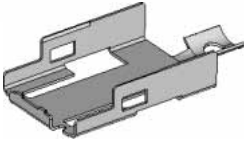


Part No.	HRS No.	Packaging
ZX62RD-AB-5P8	242-0025-0	2,000 pcs/reel

### ◆ Recommended PCB mounting pattern



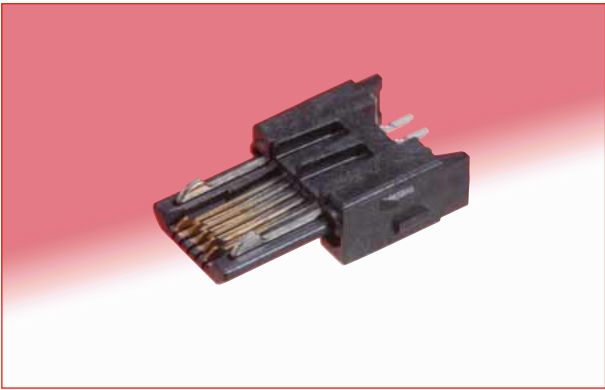
All dimensions: mm

Plugs – assembled (not-terminated, without overmold)	Components
<p data-bbox="240 197 695 230"><b>ZX40 - Direct wire soldering</b></p> 	 <p data-bbox="1177 271 1414 304"><b>ZX40-*SLDA</b></p> <p data-bbox="1177 309 1267 331">Cover-top</p>  <p data-bbox="1177 400 1414 434"><b>ZX40-*5S-UNIT</b></p> <p data-bbox="1177 439 1366 506">Assembly (insulator/ contacts/lock) *No PCB required</p>  <p data-bbox="1177 544 1414 577"><b>ZX40-SLDB</b></p> <p data-bbox="1177 582 1302 604">Cover-bottom</p>
<p data-bbox="240 674 695 707"><b>ZX20 - PCB wire soldering</b></p> 	 <p data-bbox="1177 768 1414 801"><b>ZX20-*SLDC</b></p> <p data-bbox="1177 806 1235 828">Cover</p>  <p data-bbox="1177 916 1414 949"><b>ZX20-*5S-UNIT</b></p> <p data-bbox="1177 954 1414 1043">Assembly (insulator/ contacts/lock) *Vertical through hole PCB termination</p>
<p data-bbox="240 1081 695 1115"><b>ZX64 - PCB wire soldering</b></p> 	 <p data-bbox="1177 1153 1414 1187"><b>ZX64-*SLDA</b></p> <p data-bbox="1177 1191 1267 1214">Cover-top</p>  <p data-bbox="1177 1283 1414 1317"><b>ZX64-*5S-UNIT</b></p> <p data-bbox="1177 1321 1414 1411">Assembly (insulator/ contacts/lock) *Right angle through hole PCB termination</p>  <p data-bbox="1177 1471 1414 1505"><b>ZX64-SLDB</b></p> <p data-bbox="1177 1509 1302 1532">Cover-bottom</p>



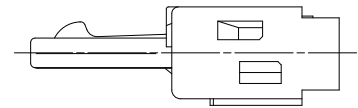
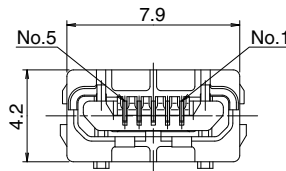
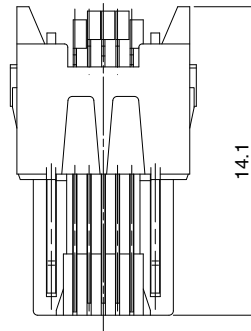
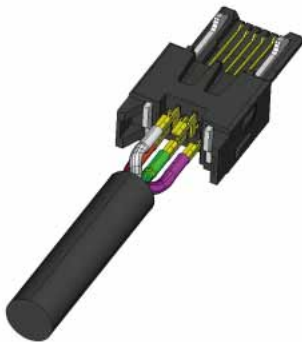
## ■ Plugs

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



Part No.	HRS No.	Packaging
ZX40-B-5S-UNIT(12)	242-0002-4 12	4,000 pcs/reel

Contact HRS for Cable Termination Procedure Manual.

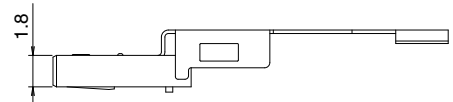
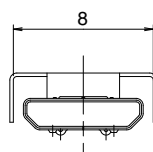
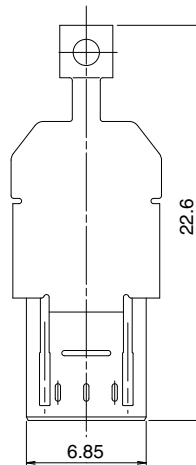


All dimensions: mm

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



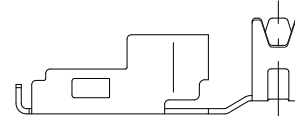
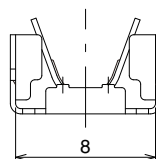
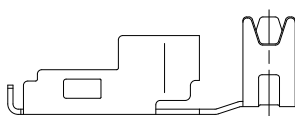
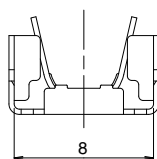
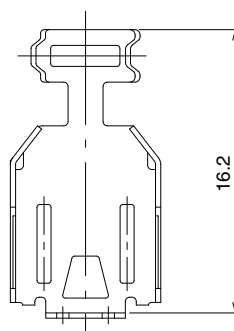
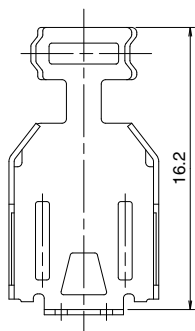
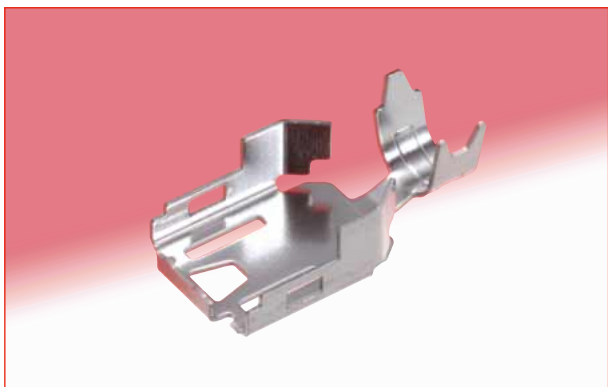
Part No.	HRS No.	Packaging
ZX40-B-SLDA	242-0003-7	4,000 pcs/reel



All dimensions: mm

## Plugs

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



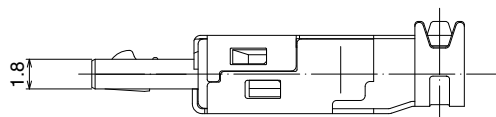
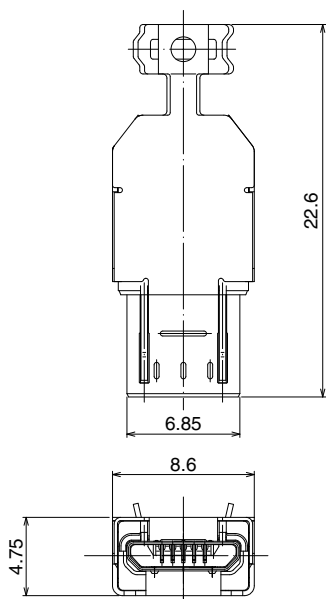
All dimensions: mm

ZX40-SLDB

ZX40-SLDB(3.3)

Part No.	HRS No.	Packaging	Cable dia.
ZX40-SLDB	242-0004-0	4,000 pcs/reel	φ3.8
ZX40-SLDB(3.3)	242-0023-4		φ3.3

### ● Assembled



All dimensions: mm

## Plugs

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

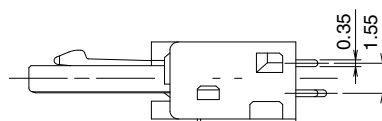
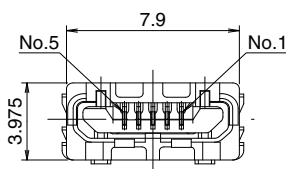
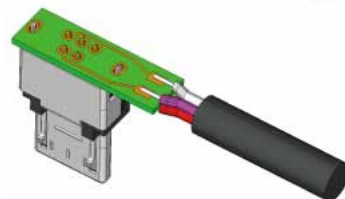
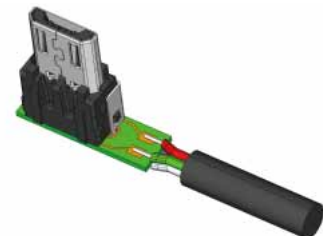
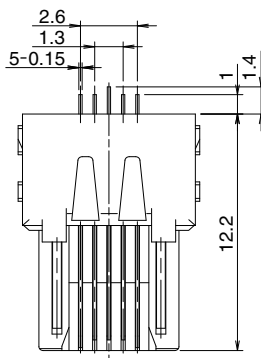
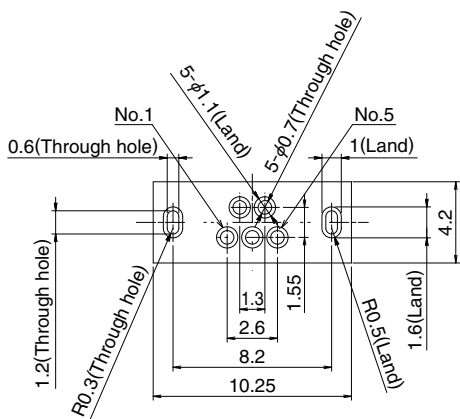


Part No.	HRS No.	Packaging
ZX20-B-5S-UNIT	242-0012-8 00	4,000 pcs/pks

Contact HRS for Cable Termination Procedure Manual.

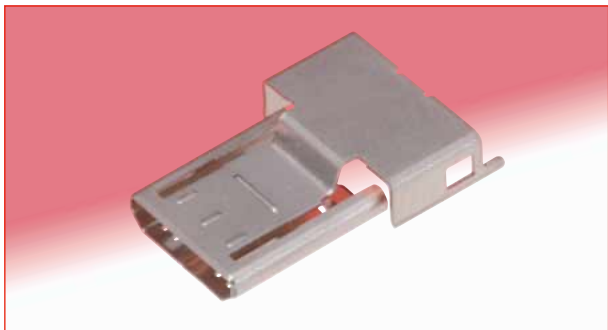
#### PCB mounting pattern

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



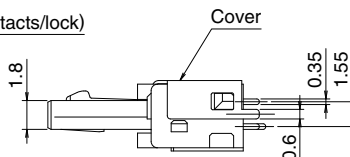
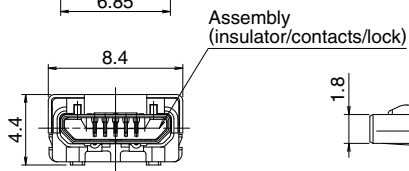
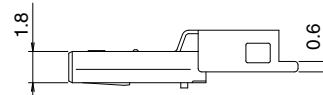
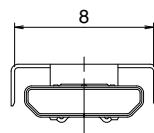
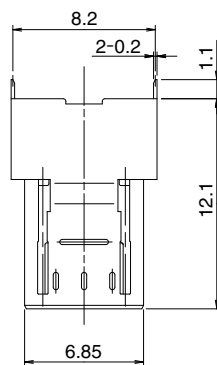
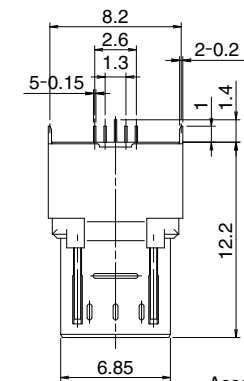
All dimensions: mm

### ● Micro B - Component, Cover - through hole



Part No.	HRS No.	Packaging
ZX20-B-SLDC	242-0022-1	4,000 pcs/reel

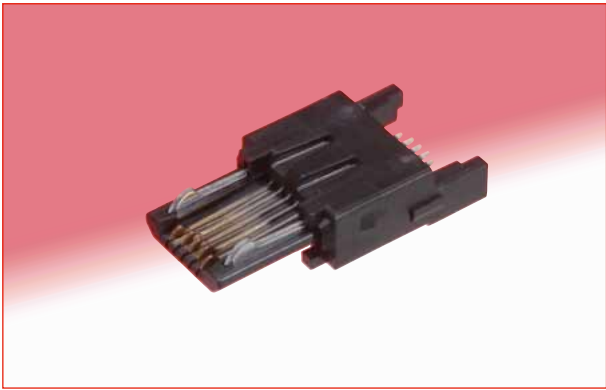
#### ● Assembled



All dimensions: mm

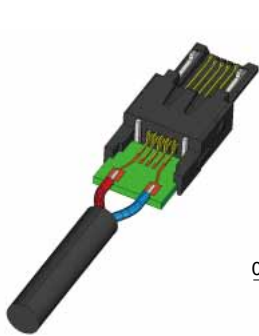
## Plugs

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

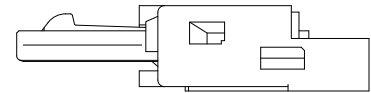
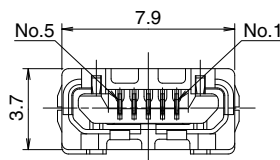
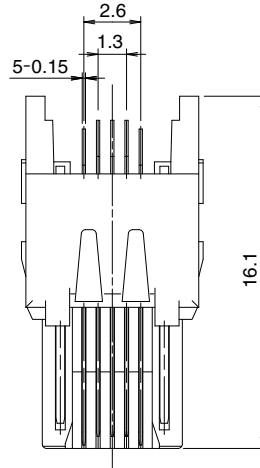
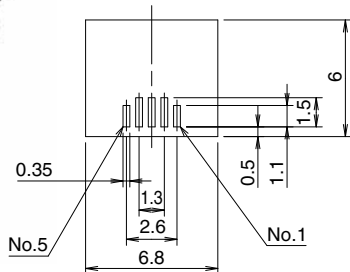


Part No.	HRS No.	Packaging
ZX64-B-5S-UNIT(14)	242-0009-3 14	1 piece

Contact HRS for Cable Termination Procedure Manual.

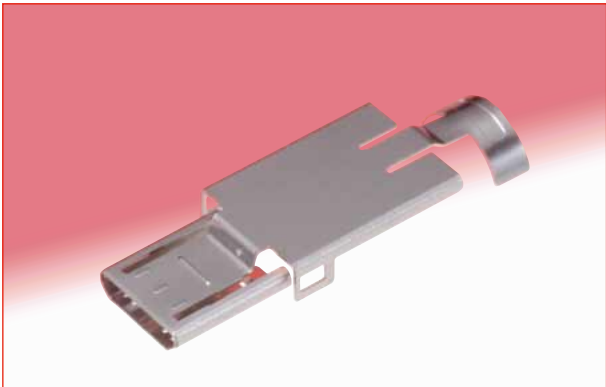


PCB mounting pattern  
\*PCB required (not supplied)  
Max. thickness: 1.0mm

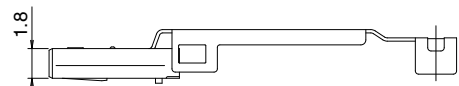
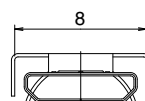
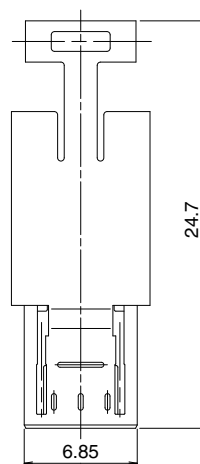


All dimensions: mm

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



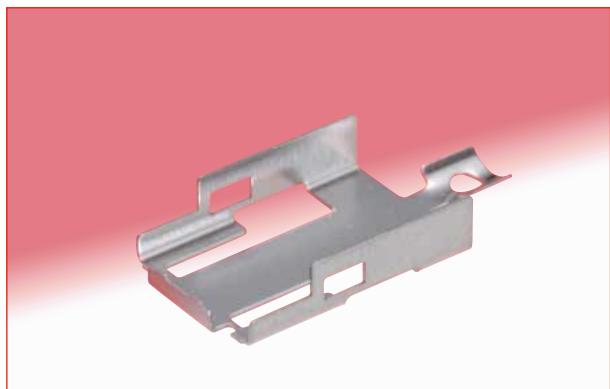
Part No.	HRS No.	Packaging
ZX64-B-SLDA	242-0013-0	4,000 pcs/reel



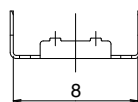
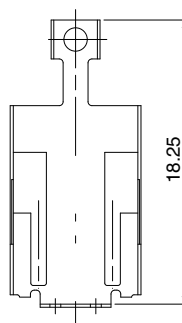
All dimensions: mm

## Plugs

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



Part No.	HRS No.	Packaging
ZX64-SLDB	242-0049-8	4,000 pcs/reel



### ● Assembled

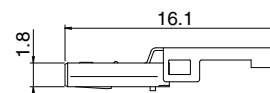
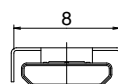
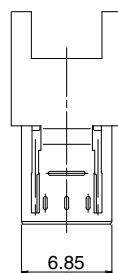


All dimensions: mm

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

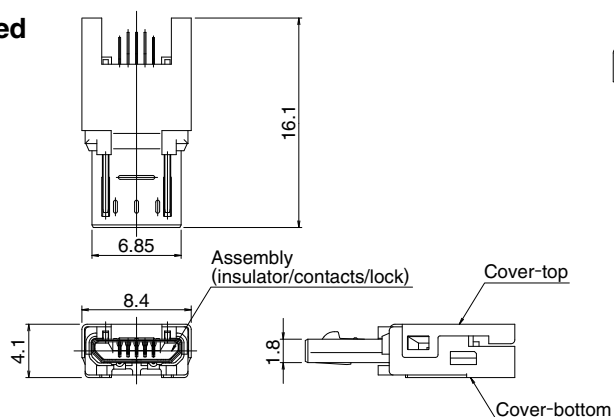


Part No.	HRS No.	Packaging
ZX64-B-SLDC	242-0018-4	4,000 pcs/reel



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

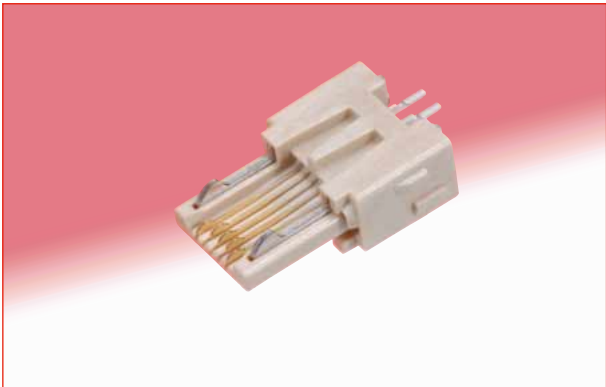
### ● Assembled



All dimensions: mm

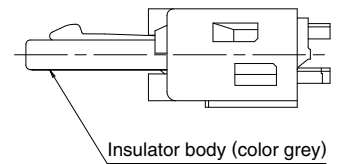
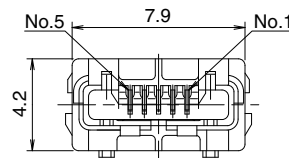
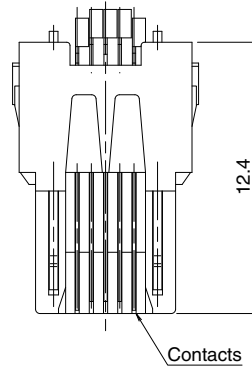
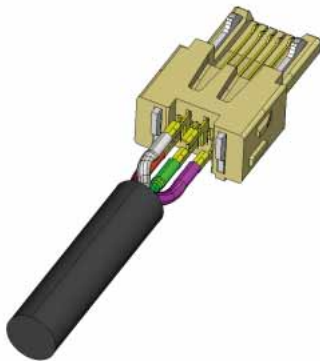
## ■ Plugs

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



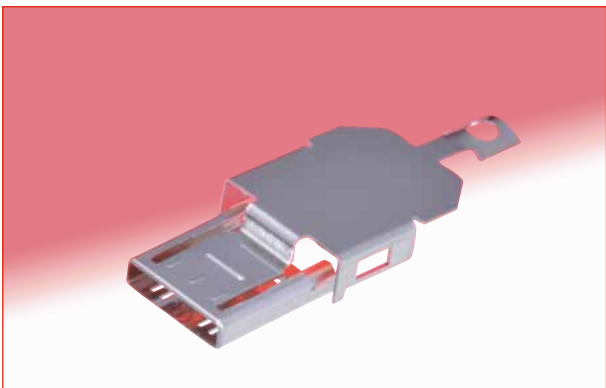
Part No.	HRS No.	Packaging
ZX40-A-5S-UNIT	242-0010-2	1 piece

Contact HRS for Cable Termination Procedure Manual.

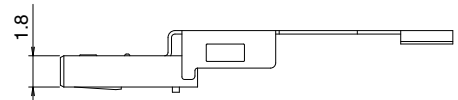
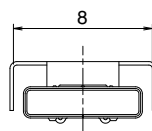
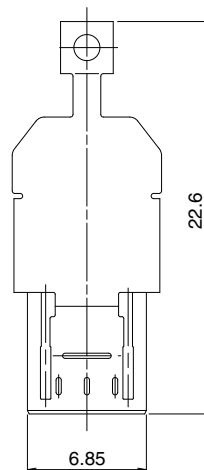


All dimensions: mm

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



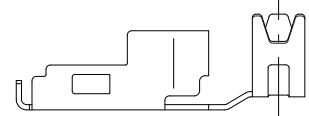
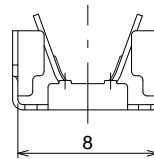
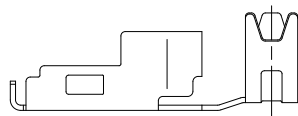
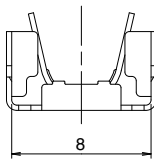
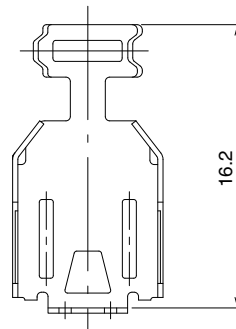
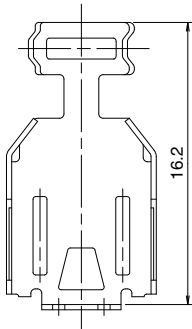
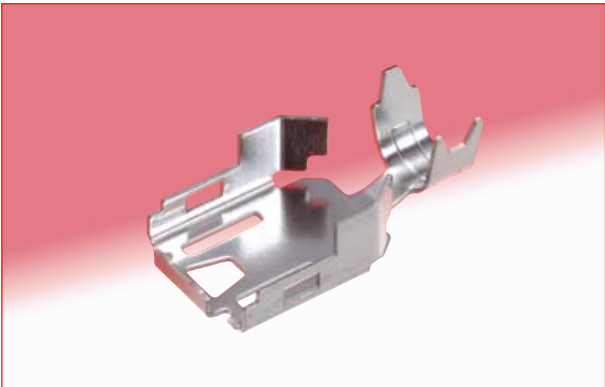
Part No.	HRS No.	Packaging
ZX40-A-SLDA	242-0011-5	4,000 pcs/reel



All dimensions: mm

## Plugs

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



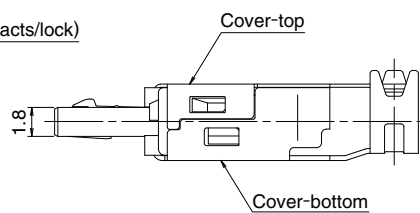
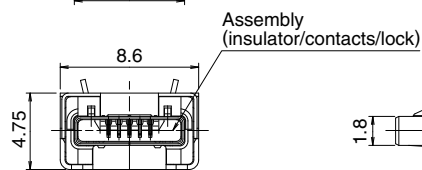
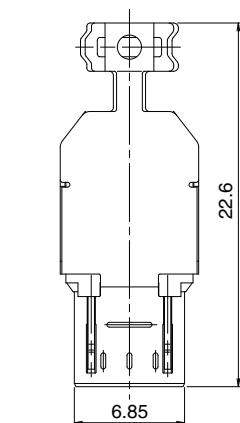
All dimensions: mm

ZX40-SLDB

ZX40-SLDB(3.3)

Part No.	HRS No.	Packaging	Cable dia.
ZX40-SLDB	242-0004-0	4,000 pcs/reel	φ3.8
ZX40-SLDB(3.3)	242-0023-4		φ3.3

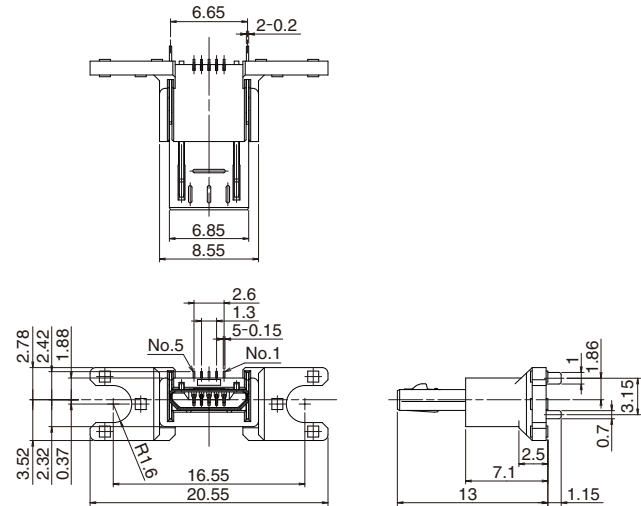
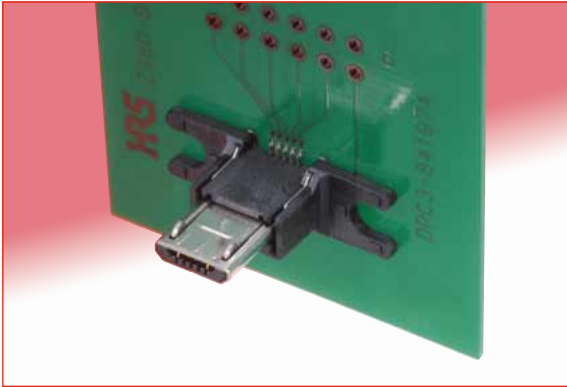
### ● Assembled



All dimensions: mm

## ■ Plug-Vertical, cradle mount, Shell through hole

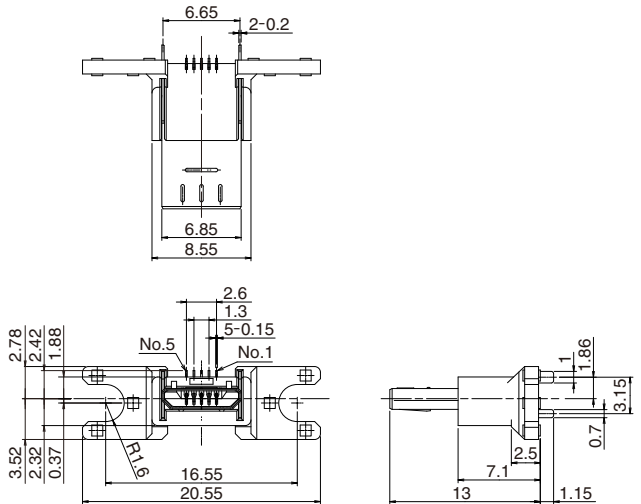
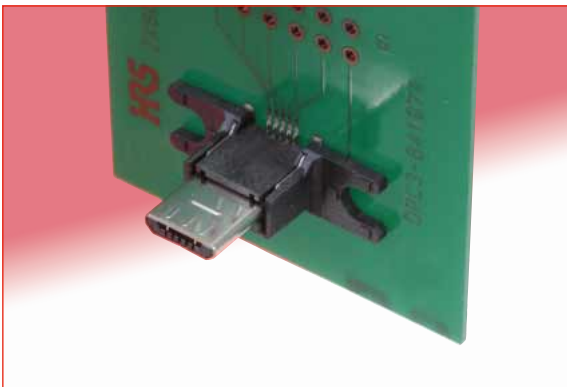
### ● Micro B, with lock



Part No.	HRS No.	Packaging
ZX80-B-5S	242-0017-1	100 pcs/pks

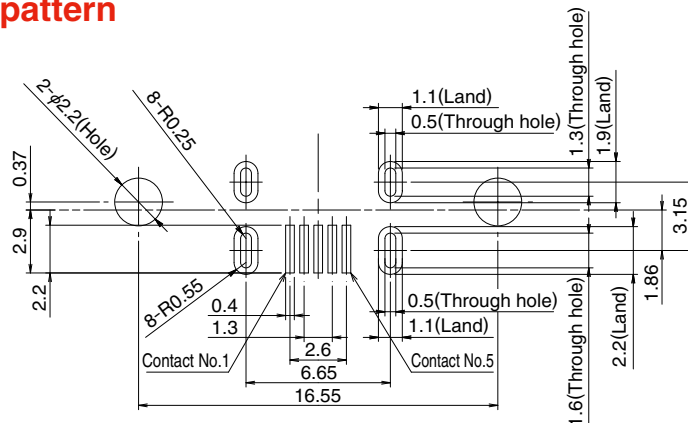
All dimensions: mm

### ● Micro B, without lock



Part No.	HRS No.	Packaging
ZX80-B-5SA	242-0019-7	100 pcs/pks

## ◆ PCB mounting pattern

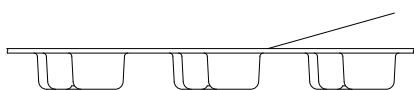


All dimensions: mm



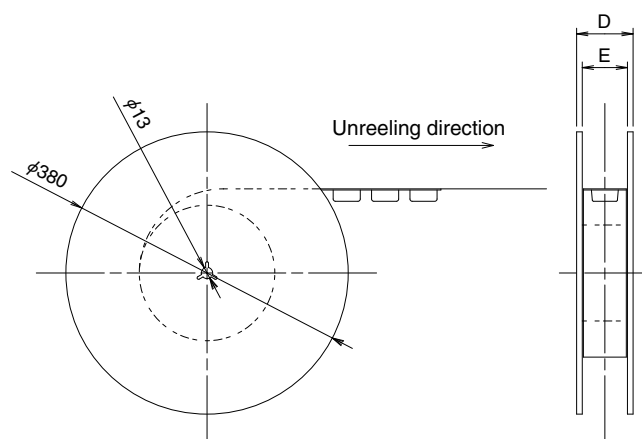
## ◆ Packaging Specifications

### ● Embossed carrier tape dimensions



Part No.	A dimension	B dimension
ZX62-B-5PA(11)	24	11.5
ZX62-AB-5PA(11)	24	11.5
ZX62M-B-5P(01)	24	11.5
Other	16	7.5

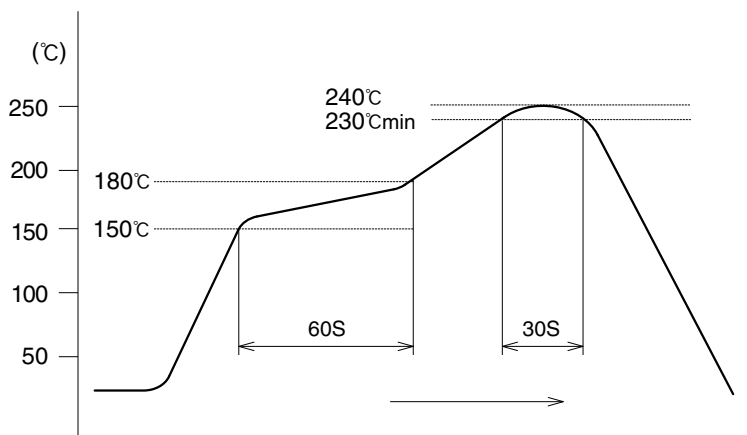
### ● Reel Dimensions



Part No.	D dimension	E dimension
ZX62-B-5PA(11)	30.4	24.4
ZX62-AB-5PA(11)	30.4	24.4
ZX62M-B-5P(01)	30.4	24.4
Other	22.4	16.4

## ◆ Recommended Temperature Profile - Receptacles

### ● Using lead-free solder paste



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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