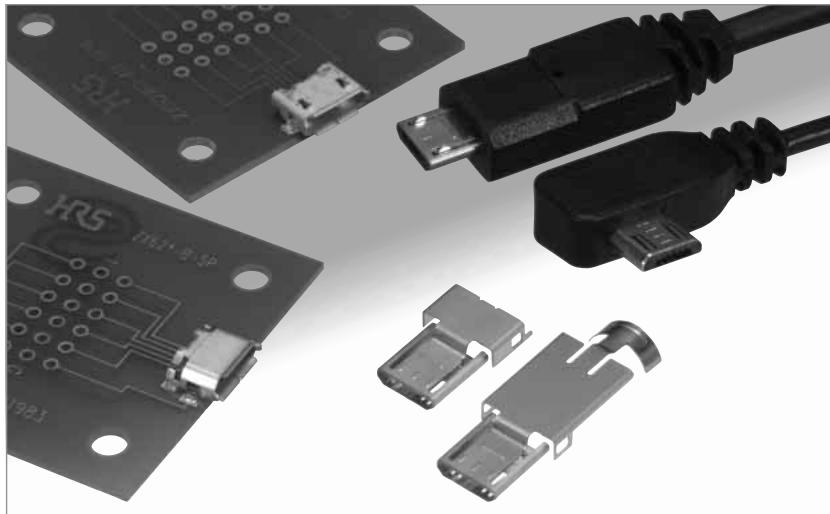




# Micro-USB connectors meeting requirements of USB 2.0 Standard

## 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) PC board terminations

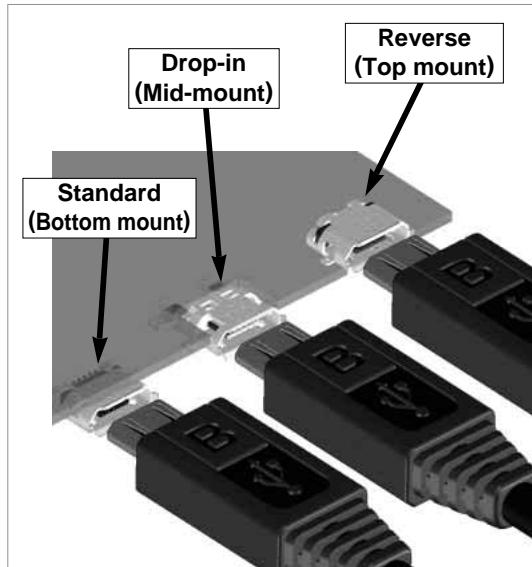
### 3. Plug styles

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.

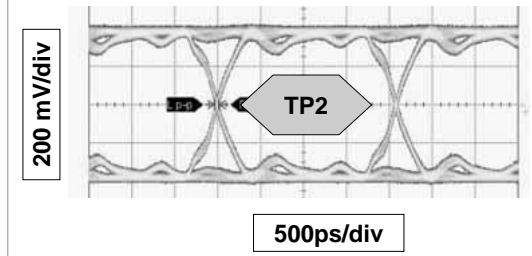
### 4. High durability

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



USB 2.0 Hi-Speed (480 Mbps)

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



## ■Specifications

Ratings	Current rating	1 A (per contact) or	Voltage rating	30 V AC
		1.8 A (contacts No. 1 and 5) and	Operating temperature range	-30°C to +85°C (Note1)
		0.5 A (contacts No. 2, 3, and 4)	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

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	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 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 – Receptacles	Blank	SMT
	8	Through hole (solder tab length: 0.8mm)
⑨ Components-plugs	UNIT	Assembly (Insulator/contact/lock)
	SLD*	Cover (Note 1)

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

## ■Product Styles Table

Interface	Receptacle	Plug
Micro-A		
Micro-B		
Micro-AB		

## ■ Configurations

	Mating side configuration	Application	Mounting, termination styles/wire attachment	Part Number	3D Image	Page	
Receptacles	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(02)	 	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	
Plugs	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	
Cradles	Micro-B	Cradle	SMT + DIP	ZX80-B-5S	With lock		19
				ZX80-B-5SA	Without lock		19

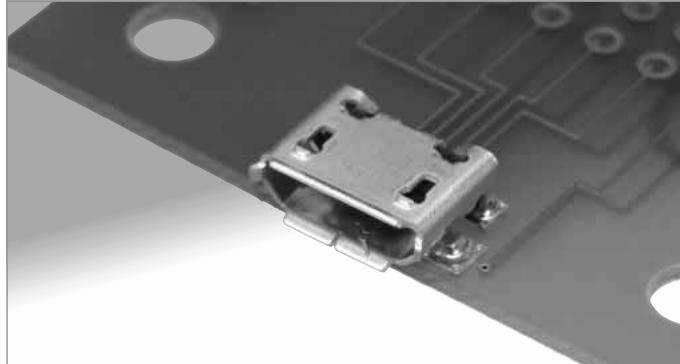
Note: 1. Part numbers in the Plugs section of the above table list the Assembly (insulator/contacts/locks) and the corresponding Shields/Covers.

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.

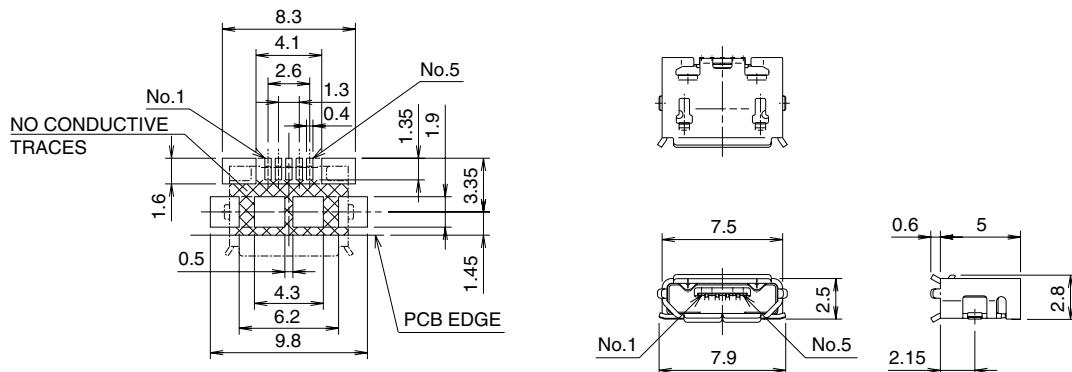
## ■Receptacles

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



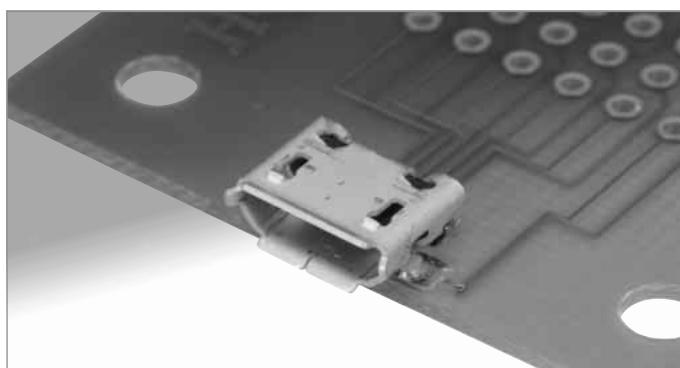
Part Number	CL No.	Packaging
ZX62-B-5PA(11)	242-0033-8-11	3,500 pieces per reel

### ■Recommended PCB mounting pattern



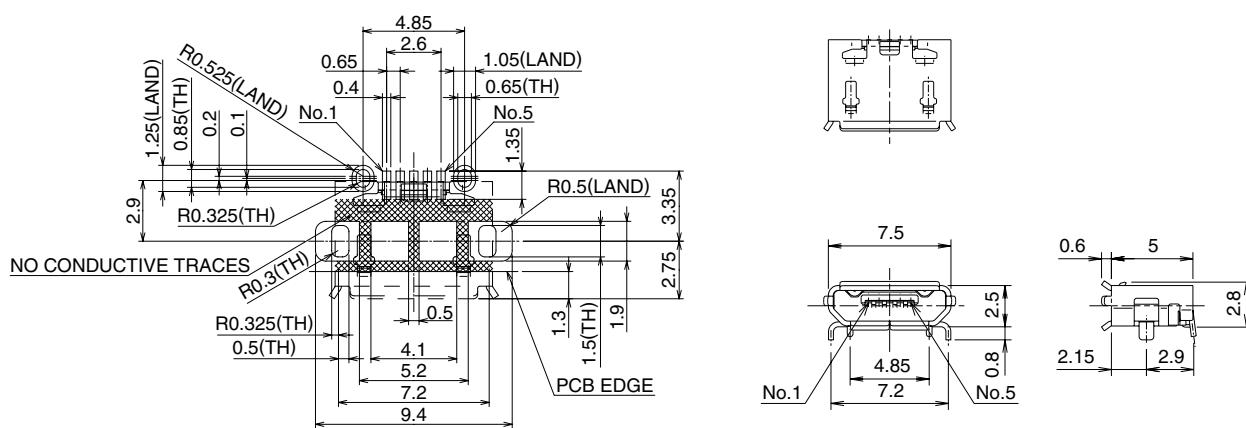
All dimensions: mm

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



Part Number	CL No.	Packaging
ZX62D-B-5PA8	242-0056-3	2,000 pieces per reel

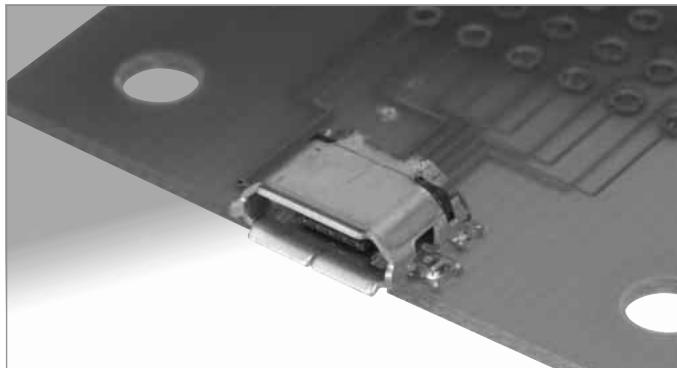
### ■Recommended PCB mounting pattern



All dimensions: mm

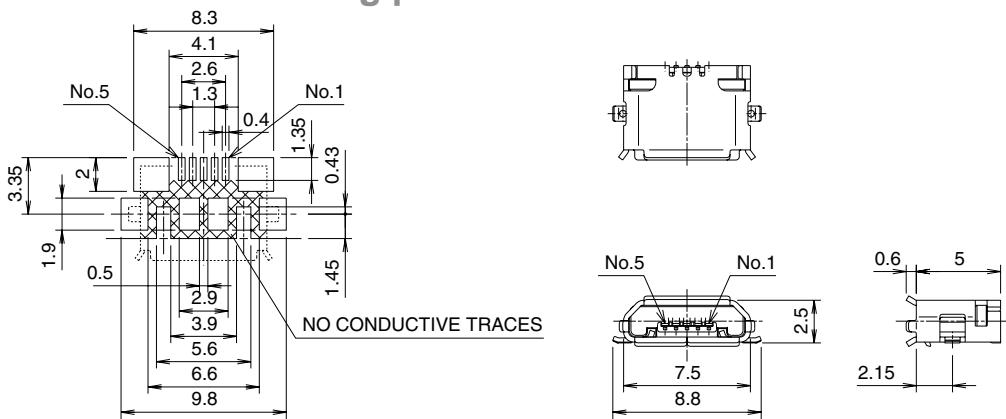
## ■ Receptacles

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



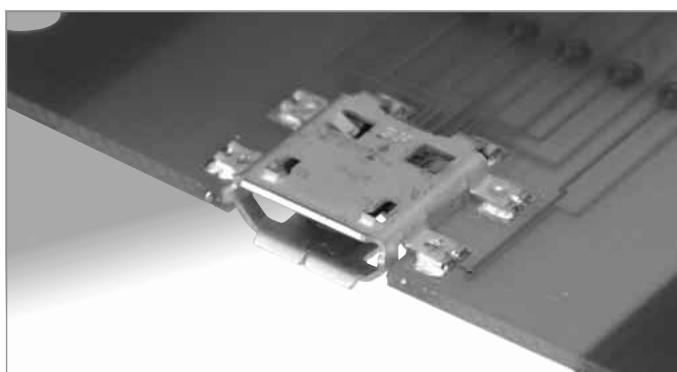
Part Number	CL No.	Packaging
ZX62R-B-5P	242-0028-8	2,000 pieces per reel

### ■ Recommended PCB mounting pattern

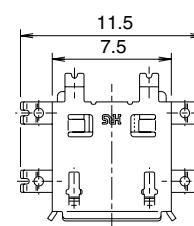


All dimensions: mm

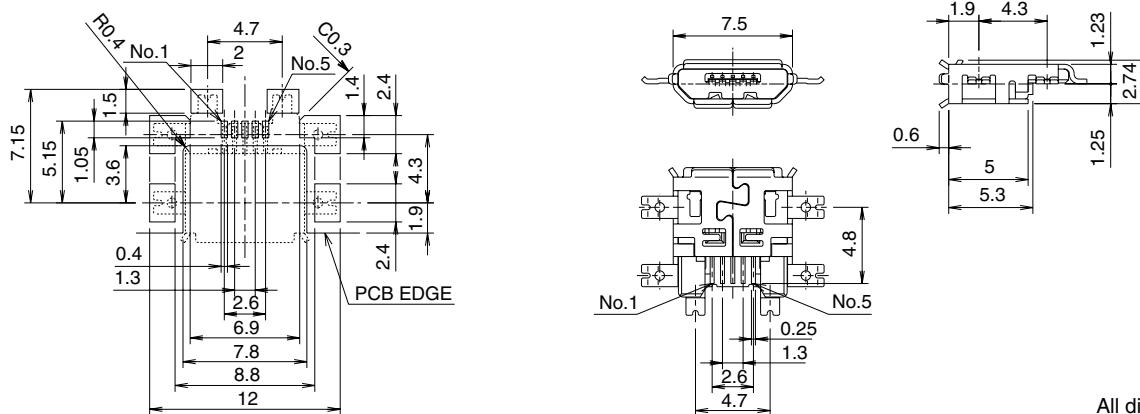
### ● Micro B - Drop-in (Mid-mount), Shell SMT



Part Number	CL No.	Packaging
ZX62M-B-5P(02)	242-0024-7-02	2,000 pieces per reel



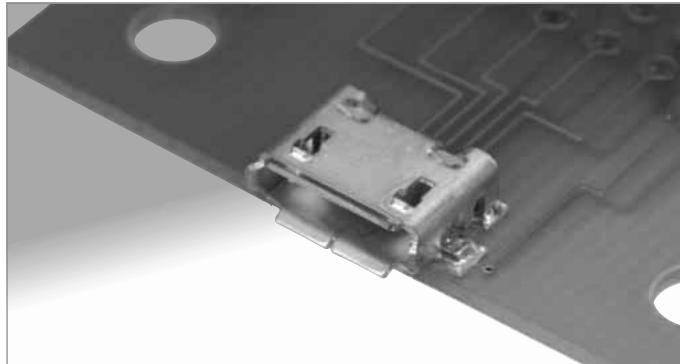
### ■ Recommended PCB mounting pattern



All dimensions: mm

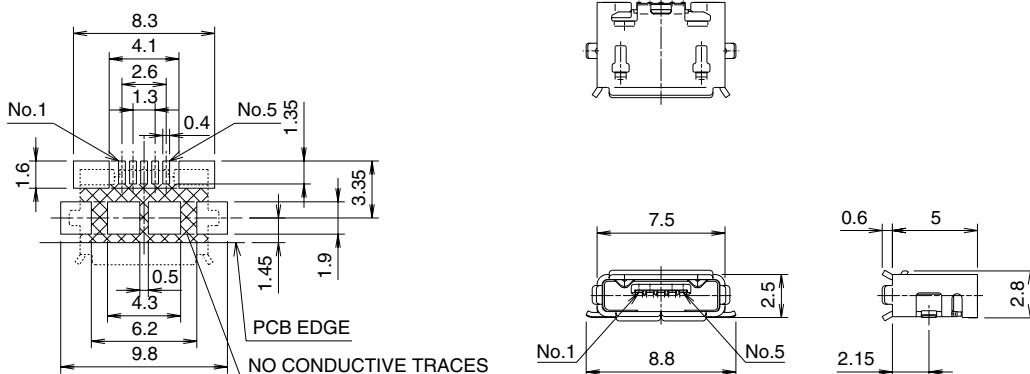
## ■Receptacles

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



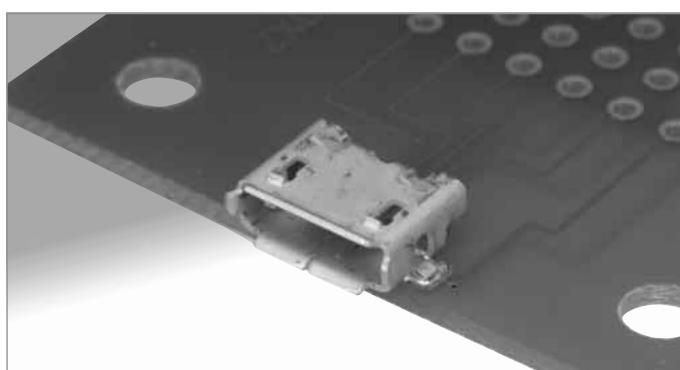
Part Number	CL No.	Packaging
ZX62-AB-5PA(11)	242-0045-7-11	3,500 pieces per reel

### ■Recommended PCB mounting pattern



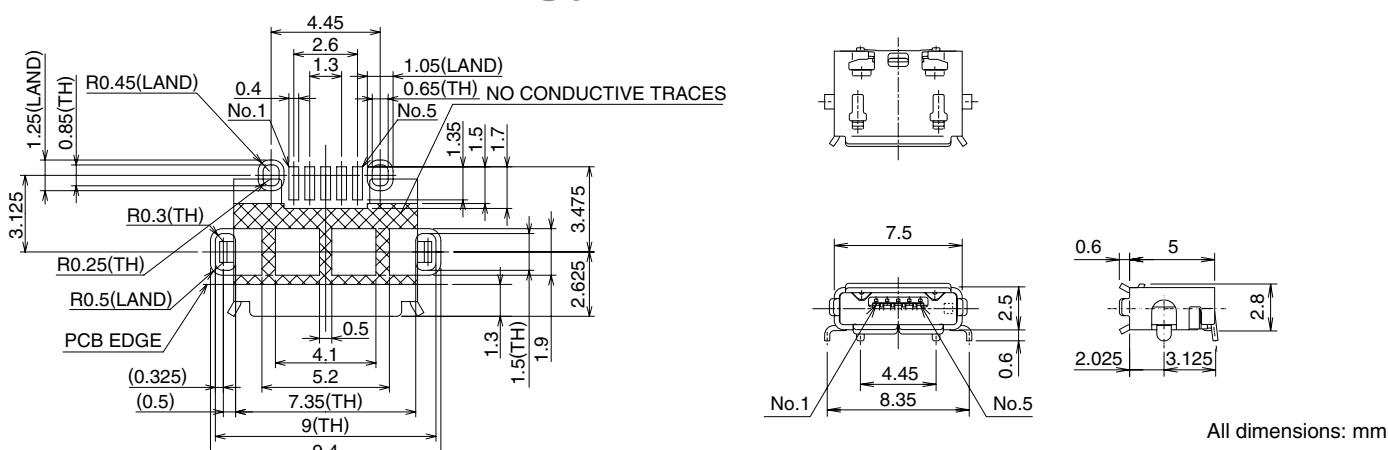
### ●Micro AB - Standard (Bottom mount), Shell through hole

All dimensions: mm



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

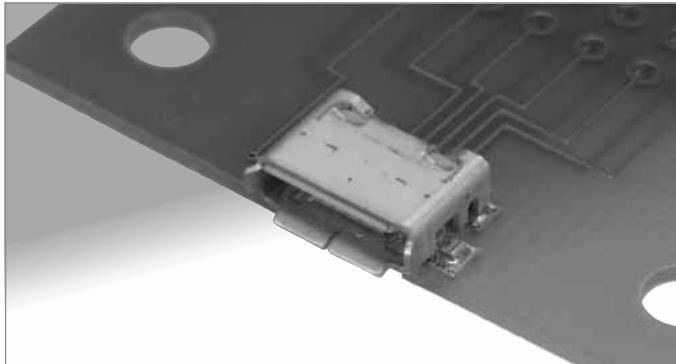
### ■Recommended PCB mounting pattern



All dimensions: mm

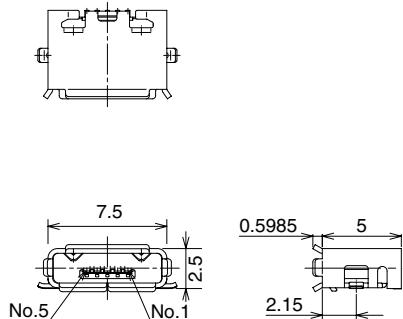
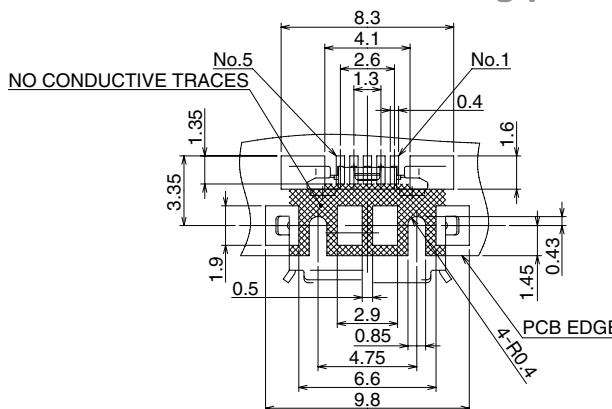
## ■ Receptacles

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



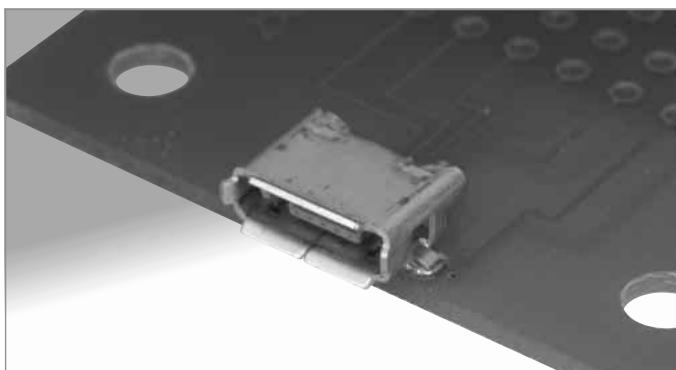
Part Number	CL No.	Packaging
ZX62R-AB-5P	242-0035-3	2,000 pieces per reel

## ■ Recommended PCB mounting pattern



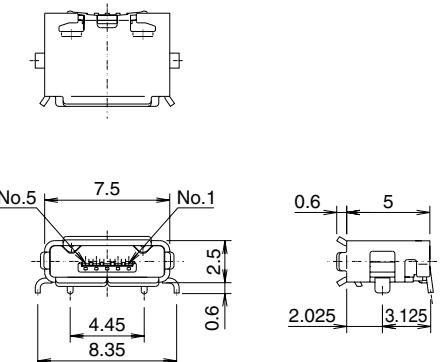
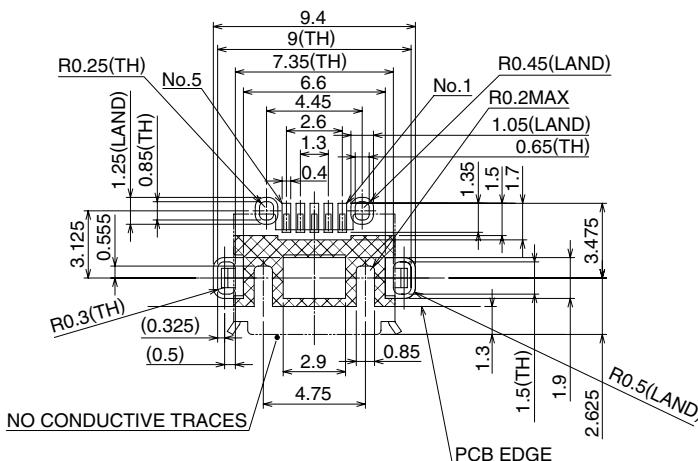
All dimensions: mm

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

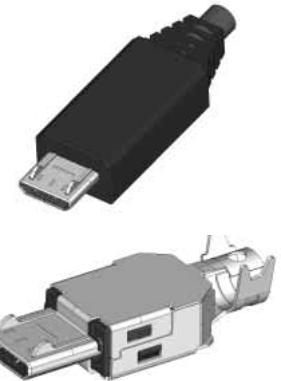
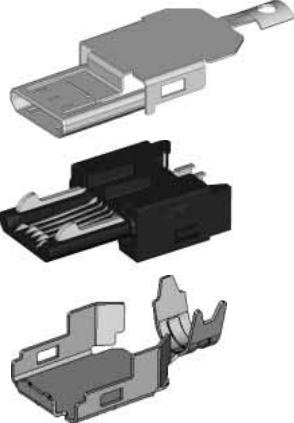
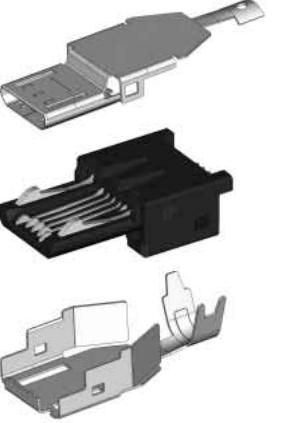
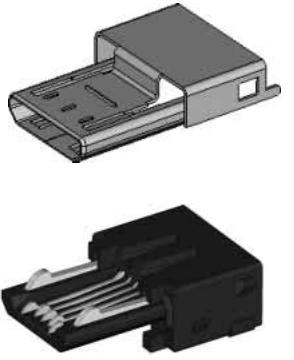
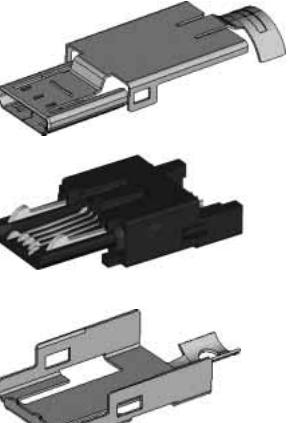


Part Number	CL No.	Packaging
ZX62RD-AB-5P8	242-0025-0	2,000 pieces per reel

## ■ Recommended PCB mounting pattern



All dimensions: mm

Plugs – assembled (not-terminated, without overmold)	Components
<b>ZX40 - Direct wire soldering</b> 	 <p><b>ZX40-*-SLDA</b> Cover-top</p> <p><b>ZX40-*-5S-UNIT</b> Assembly (insulator/contacts/lock) *No PCB required</p> <p><b>ZX40-SLDB</b> Cover-bottom</p>
<b>ZX10 - PCB wire soldering</b> 	 <p><b>ZX10-B-SLDA</b> Cover-top</p> <p><b>ZX10-B-5S-UNIT</b> Assembly (insulator/contacts/lock) *SMT PCB termination</p> <p><b>ZX10-SLDB</b> Cover-bottom</p>
<b>ZX20 - PCB wire soldering</b> 	 <p><b>ZX20-*-SLDC</b> Cover</p> <p><b>ZX20-*-5S-UNIT</b> Assembly (insulator/contacts/lock) *Straight through hole PCB termination</p>
<b>ZX64 - PCB wire soldering</b> 	 <p><b>ZX64-*-SLDA</b> Cover-top</p> <p><b>ZX64-*-5S-UNIT</b> Assembly (insulator/contacts/lock) *Right angle through hole PCB termination</p> <p><b>ZX64-SLDB</b> Cover-bottom</p>

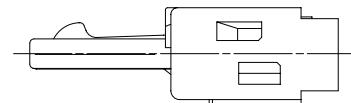
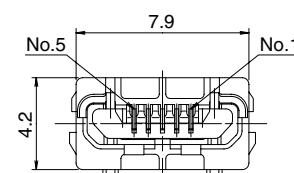
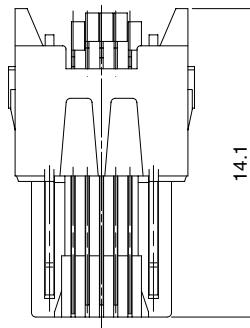
## ■Plugs

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



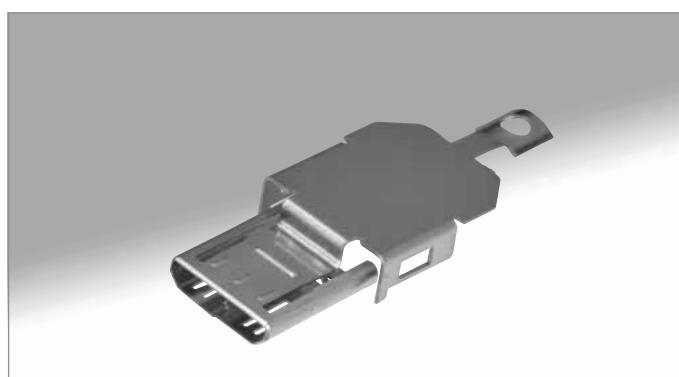
Part Number	CL No.
ZX40-B-5S-UNIT(12)	242-0002-4-12

Contact HRS for Cable Termination Procedure Manual.

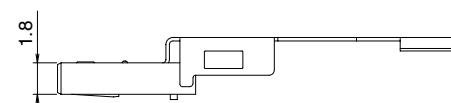
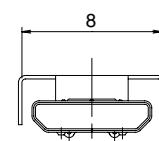
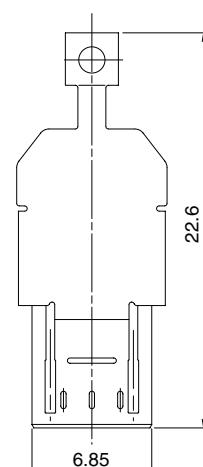


All dimensions: mm

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



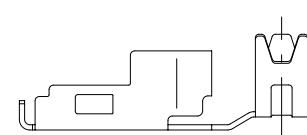
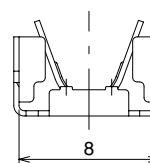
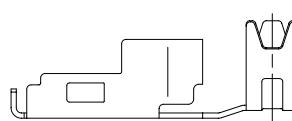
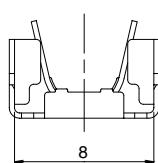
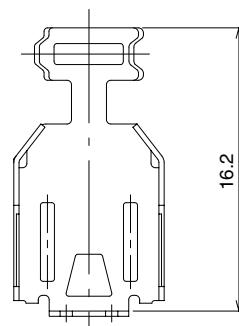
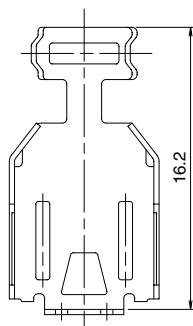
Part Number	CL No.	Packaging
ZX40-B-SLDA	242-0003-7	4,000 pieces per reel



All dimensions: mm

## ■Plugs

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



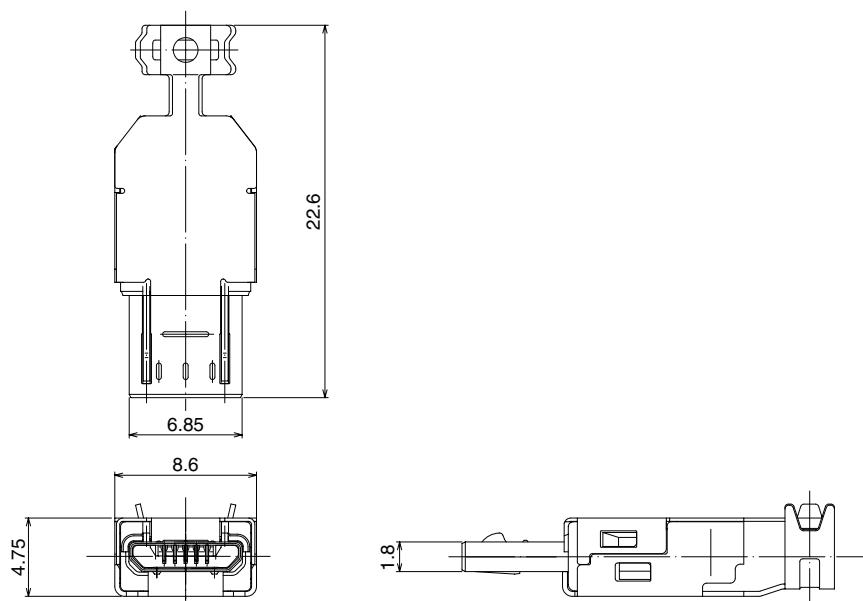
All dimensions: mm

ZX40-SLDB

ZX40-SLDB(3.3)

Part Number	CL No.	Packaging	Cable dia.
ZX40-SLDB	242-0004-0	4,000 pieces per reel	Ø3.8
ZX40-SLDB(3.3)	242-0023-4		Ø3.3

### ●Assembled



All dimensions: mm

## Plugs

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

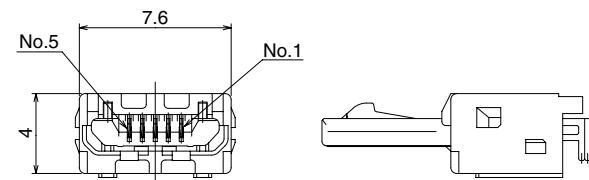
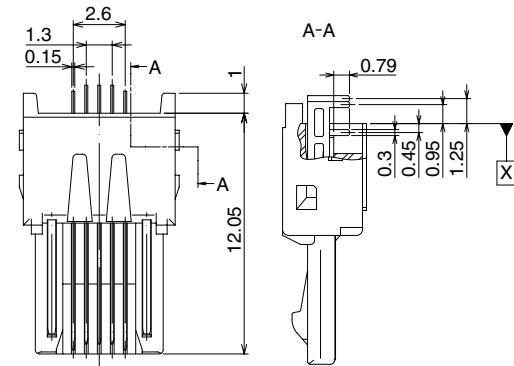
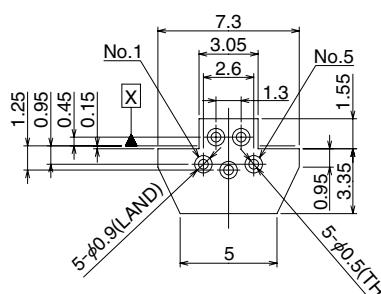


Part Number	CL No.	Packaging
ZX10-B-5S-UNIT(12)	242-0030-0-12	1,500 pieces per reel

Contact HRS for Cable Termination Procedure Manual.

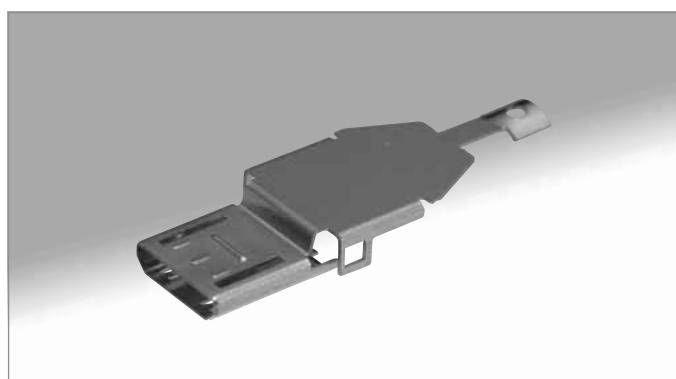


PCB mounting pattern  
\*PCB required (not supplied)  
Max. thickness: 0.6mm

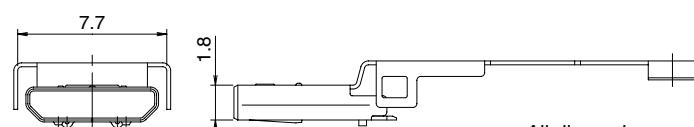
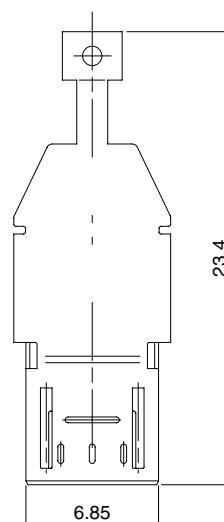


### ● Micro B - Component, Cover-top - Right angle through hole

All dimensions: mm



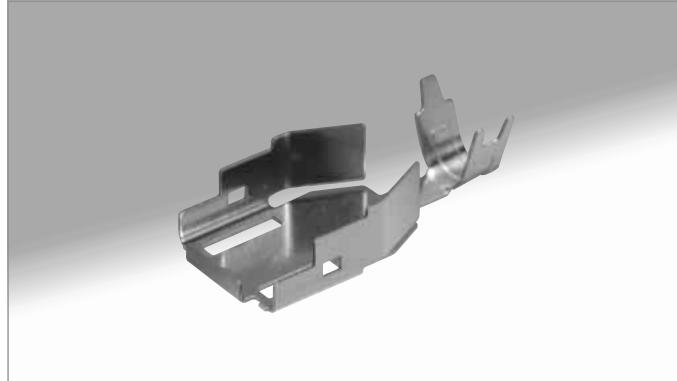
Part Number	CL No.	Packaging
ZX10-B-SLDA	242-0031-2	4,500 pieces per reel



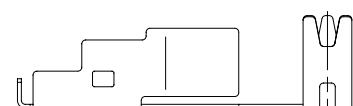
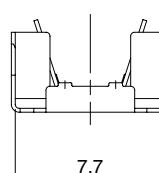
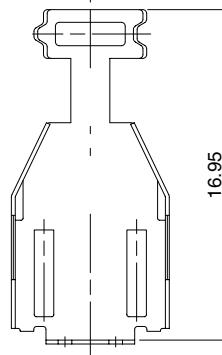
All dimensions: mm

## ■Plugs

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

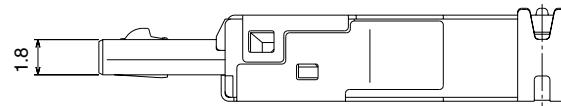
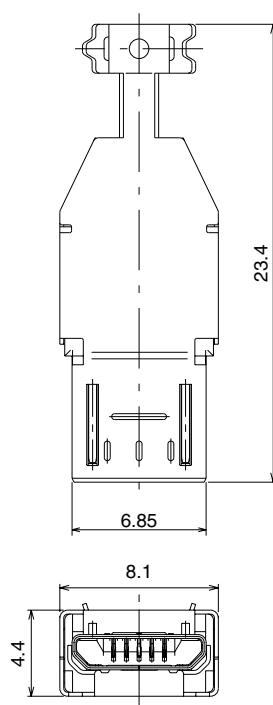


Part Number	CL No.	Packaging
ZX10-SLDB(3.3)	242-0032-5	4,500 pieces per reel



All dimensions: mm

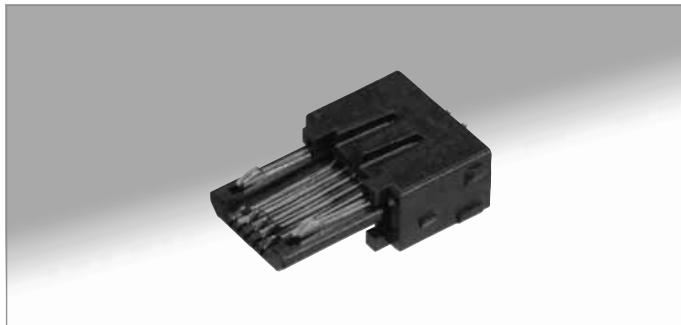
### ●Assembled



All dimensions: mm

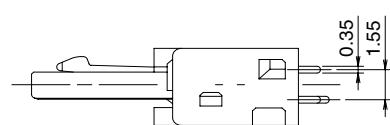
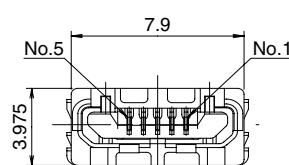
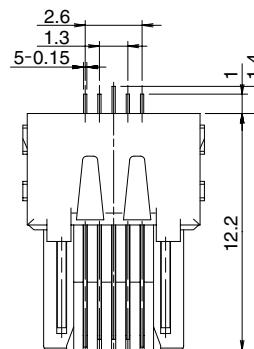
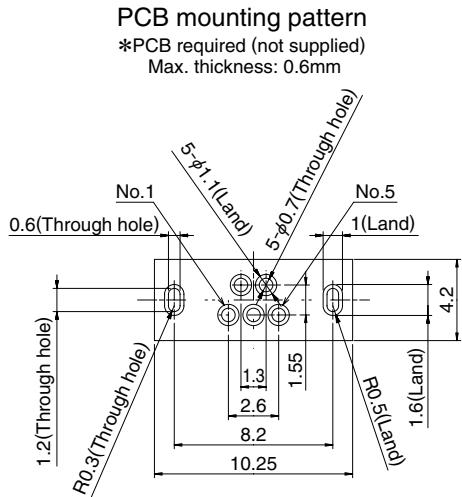
## ■ Plugs

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



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

Contact HRS for Cable Termination Procedure Manual.

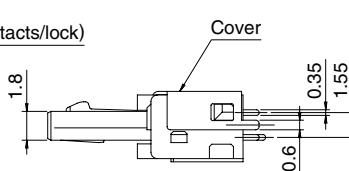
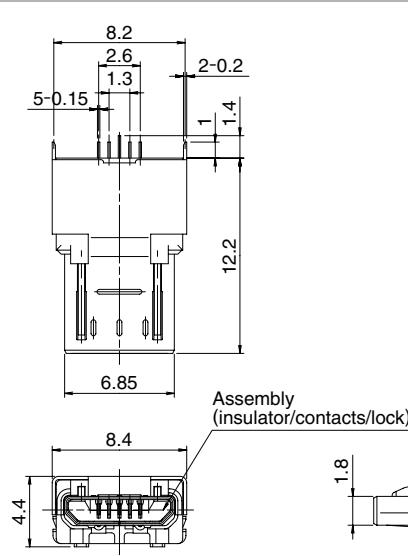
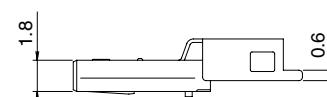
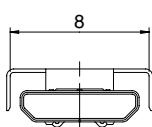
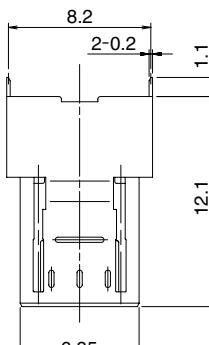


All dimensions: mm

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



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



All dimensions: mm

## ■Plugs

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

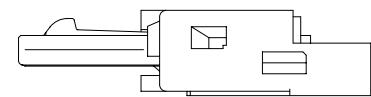
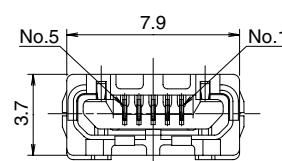
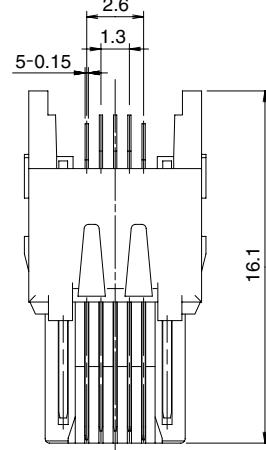
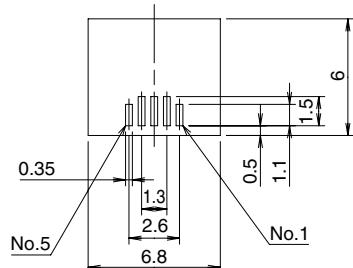


Part Number	CL No.
ZX64-B-5S-UNIT(14)	242-0009-0-14

Contact HRS for Cable Termination Procedure Manual.



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

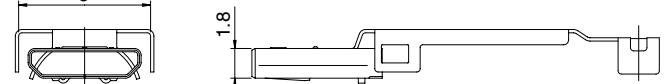
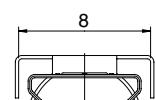
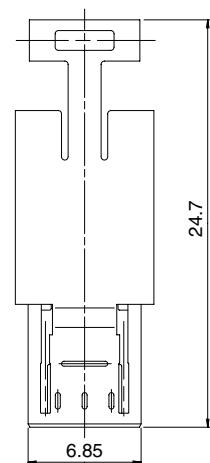


All dimensions: mm

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



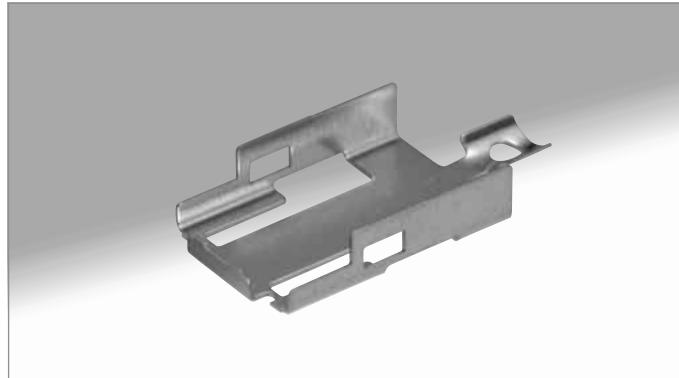
Part Number	CL No.	Packaging
ZX64-B-SLDA	242-0013-0	4,000 pieces per reel



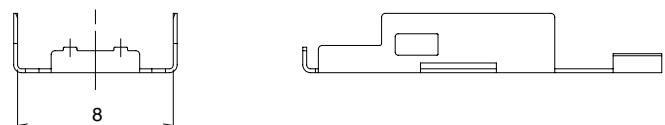
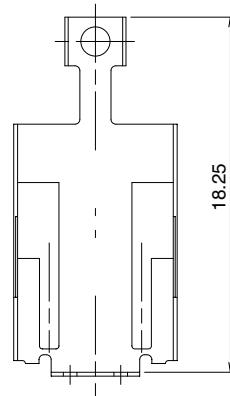
All dimensions: mm

## ■Plugs

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

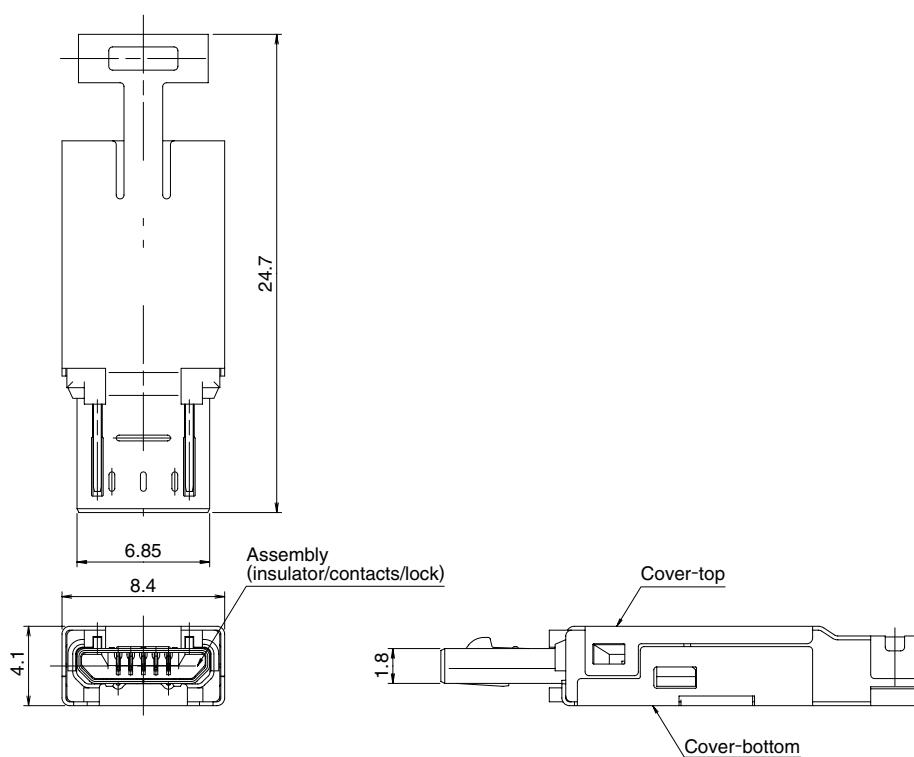


Part Number	CL No.	Packaging
ZX64-SLDB	242-0049-8	4,000 pieces per reel



### ●Assembled

All dimensions: mm



All dimensions: mm

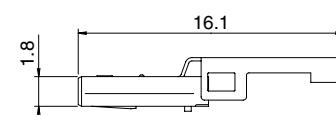
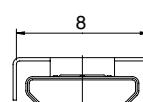
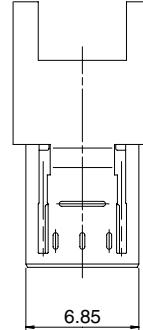
## ■Plugs

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

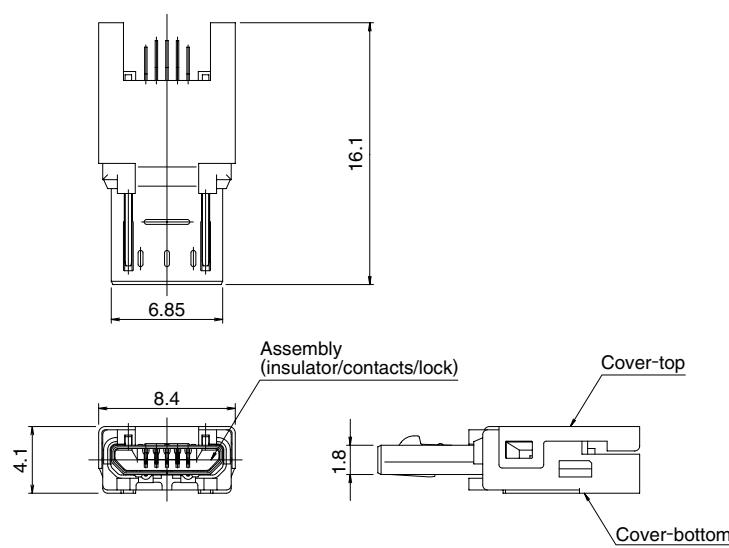


Part Number	CL No.	Packaging
ZX64-B-SLDC	242-0018-4	4,000 pieces per reel

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



### ●Assembled



All dimensions: mm

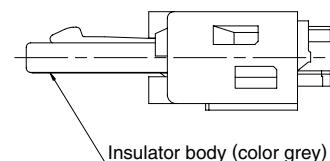
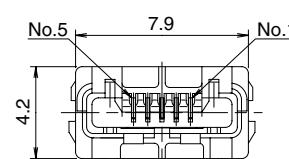
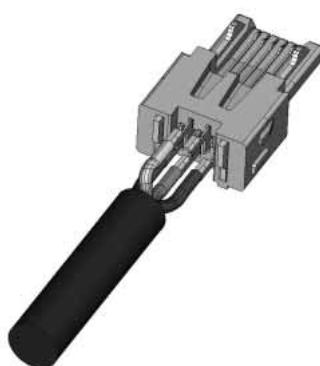
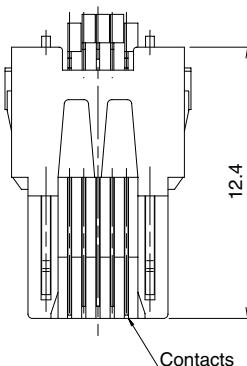
## ■Plugs

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



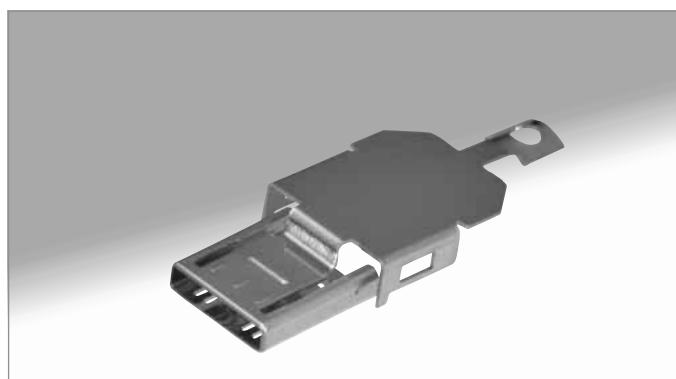
Part Number	CL No.
ZX40-A-5S-UNIT	242-0010-2

Contact HRS for Cable Termination Procedure Manual.

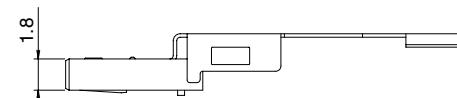
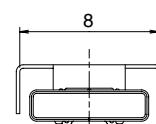
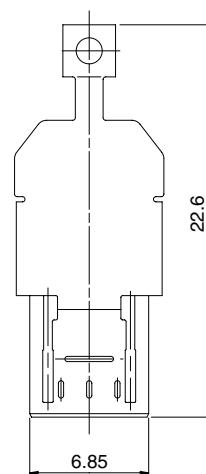


All dimensions: mm

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



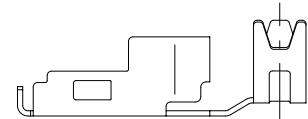
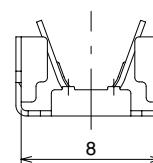
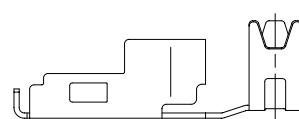
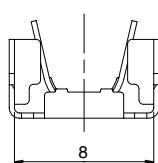
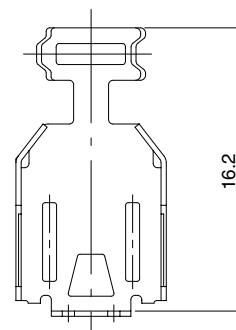
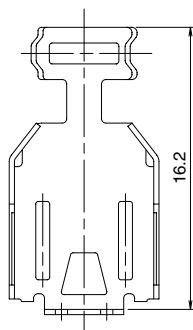
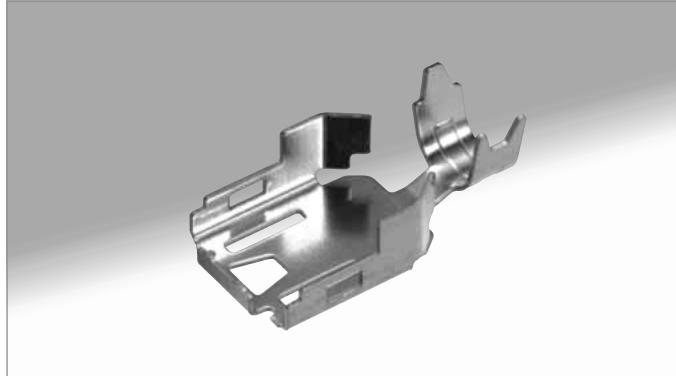
Part Number	CL No.	Packaging
ZX40-A-SLDA	242-0011-5	4,000 pieces per reel



All dimensions: mm

## ■Plugs

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



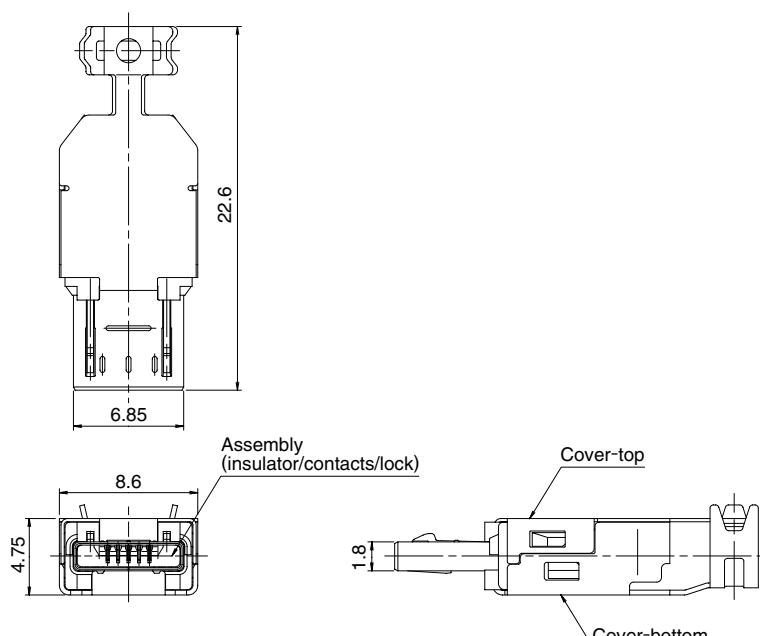
ZX40-SLDB

ZX40-SLDB(3.3)

All dimensions: mm

Part Number	CL No.	Packaging	Cable dia.
ZX40-SLDB	242-0004-0	4,000 pieces per reel	ø3.8
ZX40-SLDB(3.3)	242-0023-4		ø3.3

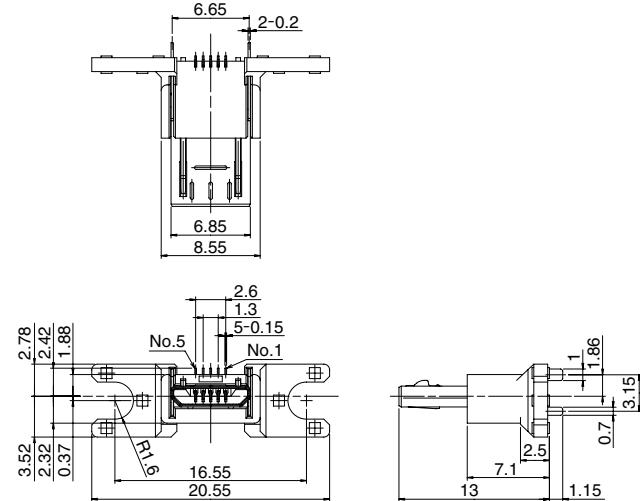
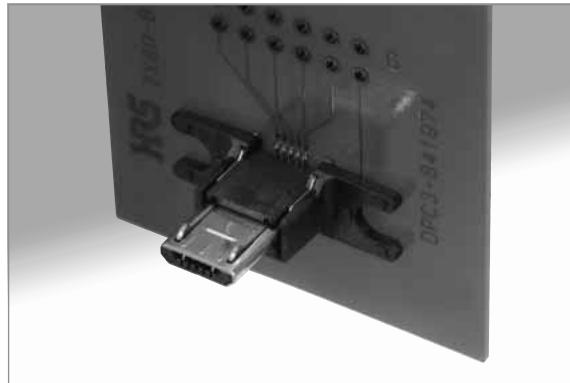
### ●Assembled



All dimensions: mm

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

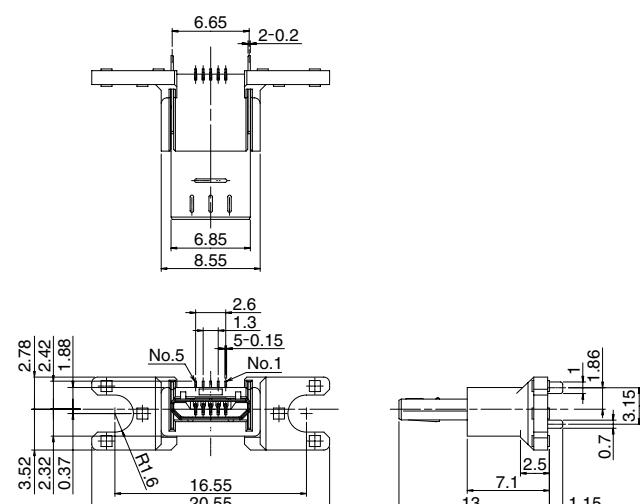
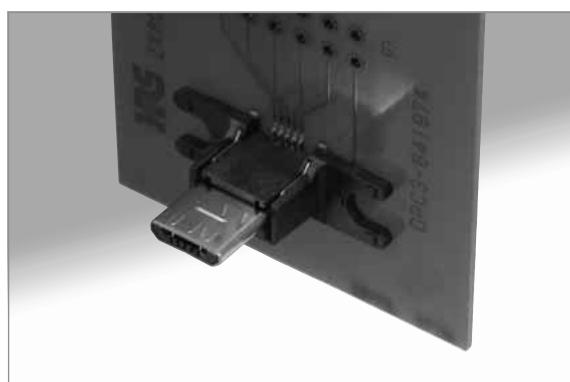
### ●Micro B, with lock



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

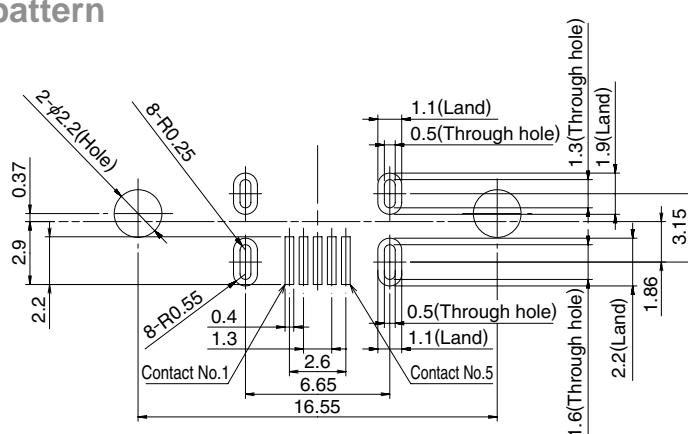
All dimensions: mm

### ●Micro B, without lock



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

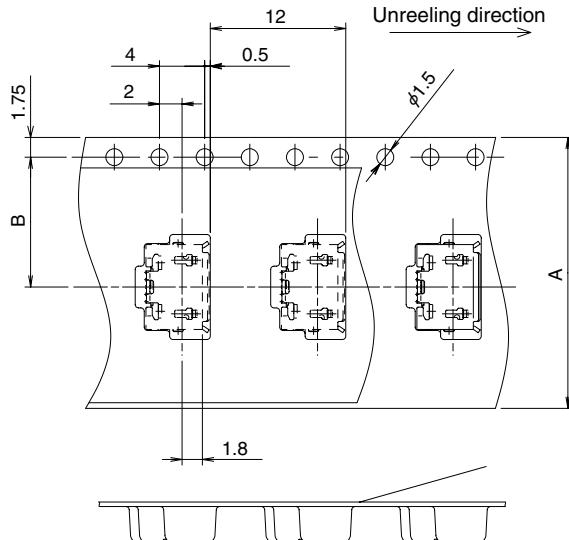
## ■PCB mounting pattern



All dimensions: mm

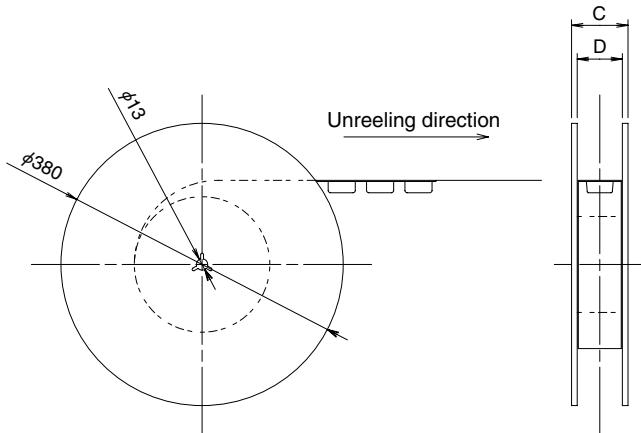
## ■Packaging Specifications

### ●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

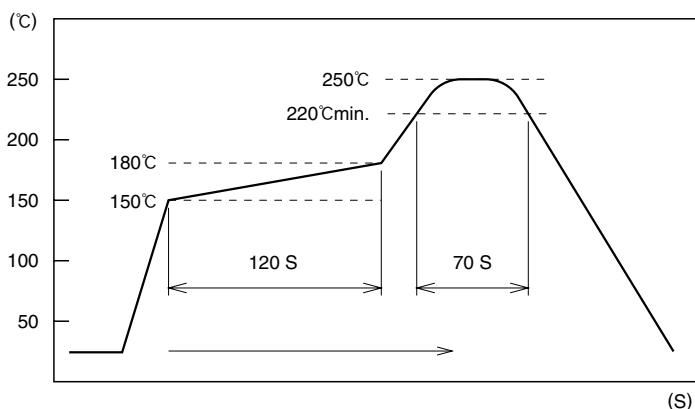


Part Number	C dimension	D dimension
ZX62-B-5PA	30.4	24.4
ZX62-AB-5PA	30.4	24.4
ZX62M-B-5P	30.4	24.4
Other	22.4	16.4

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.



# HIROSE ELECTRIC CO.,LTD.

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>