

2mm Pitch, Multi Functional Connector System (Floating [Board-to-Board], Swing-Lock [Wire-to-Board], Short-Circuit Pin)

DF59 Series



Features

● Common to all series

1. High Operating Temperature

DF59's are rated at temperatures up to 105 °C.

● DF59

2. Swing Lock Structure (Wire-to-Board)

The DF59 features a "swing-lock" mechanism that employs both a positive and friction lock. This helps to prevent accidental unmating by severe wiring and mechanical stress.

3. Short-Circuit Pin

The Short-Circuit Pin allows the termination of an open circuit. Typically used at the end of a series of connected circuit boards.

4. Multi Function Design

The DF59 has the ability to function as either a Board-to-Wire or Board-to-Board System. The PCB mounted receptacle is designed to mate with the W-to-B, B-to-B, and Short Circuit Pin connectors. This multi function ability allows versatility while keeping connectors to a minimum.

5. Contact Design

The terminal design features two-point contact to ensure a highly reliable connection.

6. Common Applicator

Crimping can be performed using the applicator (AP105-DF11-22S) for the existing series DF11-22S C F(A), by replacing the die with the one for DF59 series.

* For crimping quality standards and crimping conditions, crimping needs to be performed in accordance with the specific conditions of DF59-22PCFA.

● Common to DF59/59S

7. Floating Structure (Board-to-Board)

The Board-to-Board connector can be used to connect two PCB together in a co-planar arrangement and features a "Stress free contact" that floats $\pm 0.5\text{mm}$ in the X, Y and Z dimensions.

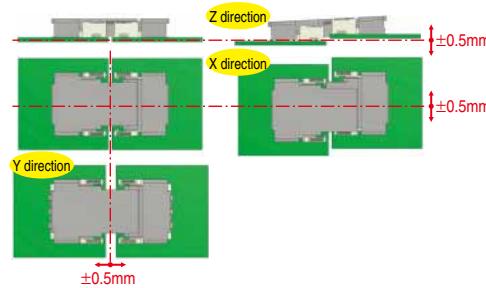
8. Space Savings

The DF59 series offers high performance in a compact, space saving design; featuring a 2mm pitch and coupled with a mated height of only 2.48mm with AWG#22 cable. The single position floating plug DF59S is specifically designed to save space, and can be mounted in high density applications.

9. Robust locking structure on DF59M (W-to-B Connection)

The lock mechanism on compact DF59M provides 16N horizontal lock strength. (Fig.4)

DF59 floating amount $\pm 0.5\text{mm}$ (X, Y, Z directions)



DF59S floating amount

$\pm 0.5\text{mm}$ (X, Y direction), $\pm 0.2\text{mm}$ (Z direction)

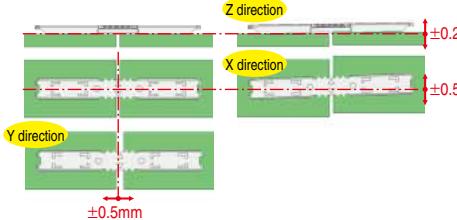


Fig.1

◆ Swing-Lock Structure (Board-to-Wire Type)

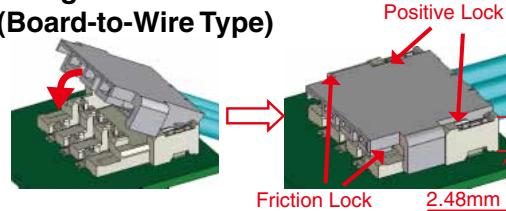


Fig.2

◆ Short-Circuit Pin

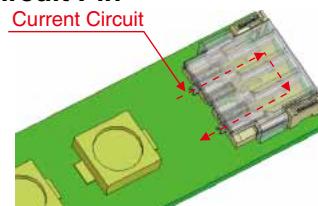


Fig.3

◆ W-to-B structure (DF59M)

Clear tactile click and high locking strength achieved by the robust locking mechanism

Mating force : 16N min. (in a horizontal direction)



Fig.4

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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Киргизия +996(312)96-26-47

■Product Specifications

Ratings	Current rating	DF59/S	3A	Operating Temperature : -40 to 105°C (Note 1) Operating Humidity Range : 20 to 80%
		DF59M	6A (22 AWG), 5A (24 AWG) 4A (26 AWG), 3A (28 AWG)	
	Voltage rating	DF59/S	AC/DC 230V (Note 3)	Storage Temperature Range : -10 to 60°C (Note 2) Storage Humidity Range : 40 to 70% (Note 2)
		DF59M	AC/DC 300V (Note 3)	
Items		Specifications		Conditions
1. Contact resistance		DF59-*P-2FC/SP DF59S	50mΩ min.	Under 6V DC, must be measured by 100mA (DC or 1000Hz)
		DF59M-1S-H	45mΩ min.	
		DF59-*P-2C	30mΩ min.	
2. Vibration		No electrical discontinuity over 1μs.		Frequency 10 to 55Hz, single amplitude 0.75mm, 3 directions, 10 cycles each
3. Shock		No electrical discontinuity over 1μs.		Acceleration 490 m/s ² , 11ms; duration, sine half-wave 3 cycles in each of the 3 axis.
4. Humidity		■Contact resistance	■Insulation resistance	Temperature 40 ± 2°C, humidity 90 to 95%, left for 96 hours
		DF59-*P-2FC/SP DF59S	50mΩ min.	
		DF59M	45mΩ min.	
5. Temperature cycle		DF59-*P-2C	30mΩ min.	(-55°C : 30 min. → 5-35°C : 2 to 3 min. → 85°C : 30 min. → 5-35°C : 2 to 3 min.) 5 cycles
		■Contact resistance	■Insulation resistance	
		DF59-*P-2FC/SP DF59S	50mΩ min.	
6. Operating Life		DF59M	45mΩ min.	1000MΩ max.
		DF59-*P-2C	30mΩ min.	
		■Contact resistance	■Number of insertion and withdrawal force	
7. Resistance to soldering heat		DF59-*P-2FC	30mΩ min.	30 times
		DF59-*P-2FC/SP DF59S	50mΩ min.	10 times
		DF59M	45mΩ min.	20 times
		DF59-*P-2C	30mΩ min.	30 times
		No melting of resin which affect the performance.		Reflow : Depends on recommended temperature profile. Hand soldering : Soldering iron temperature 350 ± 10°C, 3 sec.

Note 1 : Including temperature rise caused by current flow.

Note 2 : The term "storage" refers to products stored for long period of time prior to mounting and use.

Operating temperature and humidity range covers connectors after installation, storage, shipment or during transportation.

Note 3 : The rated voltage is the applied voltage when connectors are mounted parallel to each other on the PCB with a distance of 1.6mm or more between them. Hirose recommends his mounting distance.

This mounting distance is required in order to prevent creepage between the printed wiring to maintain an effective voltage of 300V, according to IEC 60664 and JIS C 60664 standards.

■Materials / Finish

Items		Parts	Materials	Treatment	UL Specification	
Receptacle	DF59	Insulator	LCP	Natural	UL94V-0	
	DF59S	Contact	Phosphor bronze	Gold plated	_____	
				Tin plated		
Floating plug	DF59	Insulator	PBT	White	UL94V-0	
		Contact	Brass	Gold plated	_____	
	DF59S	Insulator	LCP	Natural	UL94V-0	
		Contact	Brass	Tin plated	_____	
Crimp contact	DF59M	Contact	Copper Alloy	Tin plated	_____	
Short pin		Insulator	PBT	White	UL94V-0	
		Contact	Brass	Gold plated	_____	
Crimp case		Insulator	PBT	White	UL94V-0	
Crimp contact		Contact	Phosphor bronze	Gold plated	_____	

■Product Number Structure

Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders.

●Receptacle

DF	59	#	*	S	*	V
①	②	③	④	⑤	⑥	⑦
① Series Name : DF	⑥ Pitch					
② Series No. : 59	None : Single contact type					
③ None : Standard	2 : Standard 2mm (4mm : Without the central contact)					
S : B-to-B type	⑦ Termination form					
M : W-to-B type	V : SMT straight type (B-to-B type)					
④ Number of contacts : 1, 2, 3, 4	H : SMT right angle type (W-to-B type)					
⑤ Type of connector						
S : Receptacle						

●Plug

DF	59	#	*	P	*	FC
①	②	③	④	⑤	⑥	⑦
① Series Name : DF	⑤ Type of connector					
② Series No. : 59	P : Plug					
③ None : Standard	⑥ Pitch					
S : Single contact type	2 : DF59 : 2mm (4mm : Without the central contact)					
④ Number of contacts	None : DF59S/M					
DF59 : 2, 3, 4						
DF59S : 1	⑦ Termination form					
	FC : Floating					

●Short-Circuit pin

DF	59	-	*	P	-	2	SP
①	②		③	④	⑤	⑥	
① Series Name : DF	⑤ Pitch : 2mm						
② Series No. : 59	⑥ Termination form						
③ Number of contacts : 2, 3, 4	SP : Short Pin						
④ Type of connector							
P : Plug							

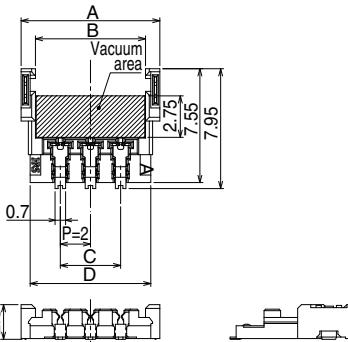
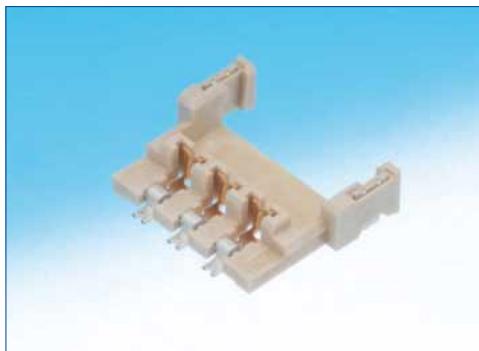
●Crimp Socket

DF	59	-	*	P	-	2	C
①	②		③	④	⑤	⑥	
① Series Name : DF	⑤ Pitch : 2mm						
② Series No. : 59	⑥ Termination form						
③ Number of contacts : 2, 3, 4	C : Crimp case						
④ Type of connector							
P : Plug							

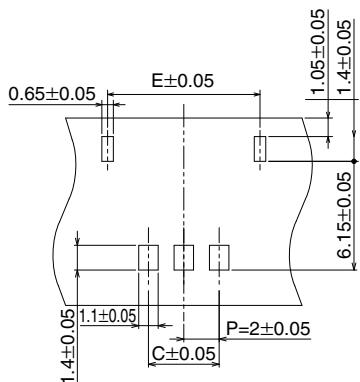
●Contact (W-to-B)

DF	59	M	-	2224	PCF
①	②	③	④	⑤	
① Series Name : DF	⑤ Form Type/Package Type/Plating type				
② Series No. : 59	PCFA : Plug crimping contact-Reel contact-Gold plating				
③ None : Standard	PCA : Plug crimping contact-Bulk contact-Gold plating				
S : Single contact type (W-to-B M=micro)	PCF : Plug crimping contact-Reel contact-Tin plating				
④ Applicable Wire	PC : Plug crimping contact-Bulk contact-Tin plating				
22 : 22 AWG					
2224 : 22 to 24 AWG					
2628 : 26 to 28 AWG					

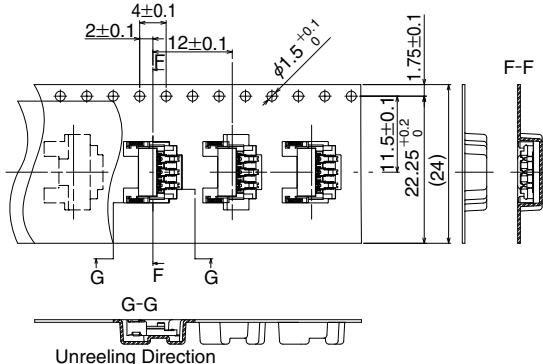
■Straight Receptacle (SMT)



●Recommended PCB Dimensions (t=1.6mm)



●Packaging Dimensions



[Specification No.]
(51) : Gold plating, emboss packaging

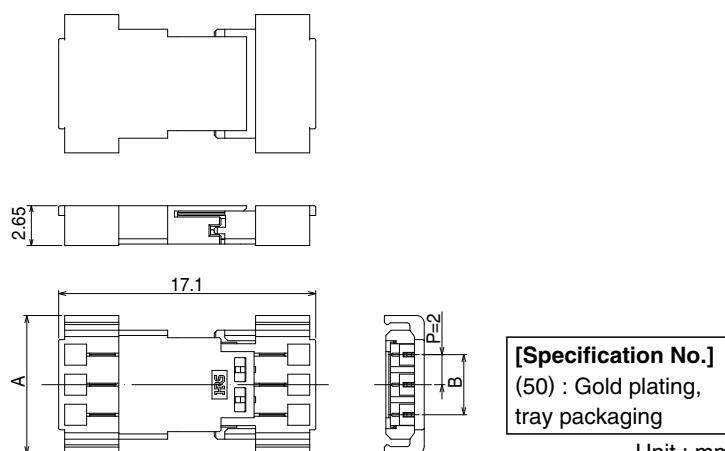
Unit : mm

Part No.	HRS No.	No. of contacts	A	B	C	D	E
DF59-2S-2V(51)	667-0001-0 51	2	7.2	5.3	2.0	6.0	6.62
DF59-3S-2V(51)	667-0002-3 51	3	9.2	7.3	4.0	8.0	8.62
DF59-4S-2V(51)	667-0003-6 51	4	11.2	9.3	6.0	10.0	10.62
DF59-2S-4V(51)	667-0021-8 51	2*	9.2	7.3	4.0	8.0	8.62

* DF59-2S-4V(51) is made by removing the middle pin of DF59-3S-2V(51) at the factory.

Note : Please order in full reel quantities. (2,000 pcs/reel)

■Floating Plug



[Specification No.]
(50) : Gold plating, tray packaging

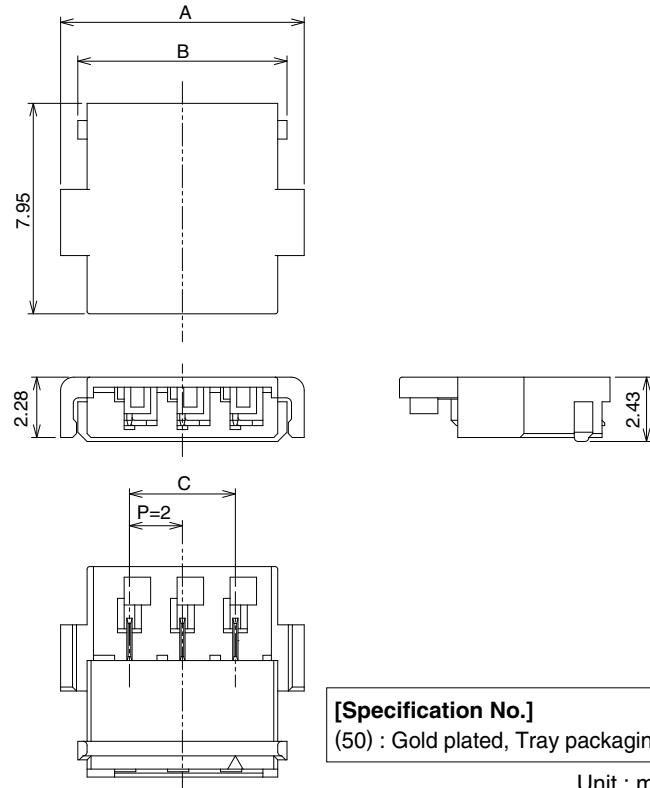
Unit : mm

Part No.	HRS No.	No. of contacts	A	B	Packaged Quantity/Tray
DF59-2P-2FC(50)	667-0006-4 50	2	7.2	2.0	50
DF59-3P-2FC(50)	667-0007-7 50	3	9.2	4.0	
DF59-4P-2FC(50)	667-0008-0 50	4	11.2	6.0	
DF59-2P-4FC(50)	667-0020-5 50	2*	9.2	4.0	

* DF59-2P-4FC(50) is made by removing the middle pin of DF59-3P-2FC(50) at the factory.

Note : Please order in full tray quantities. (50 pcs/tray)

■Short-Circuit Pin



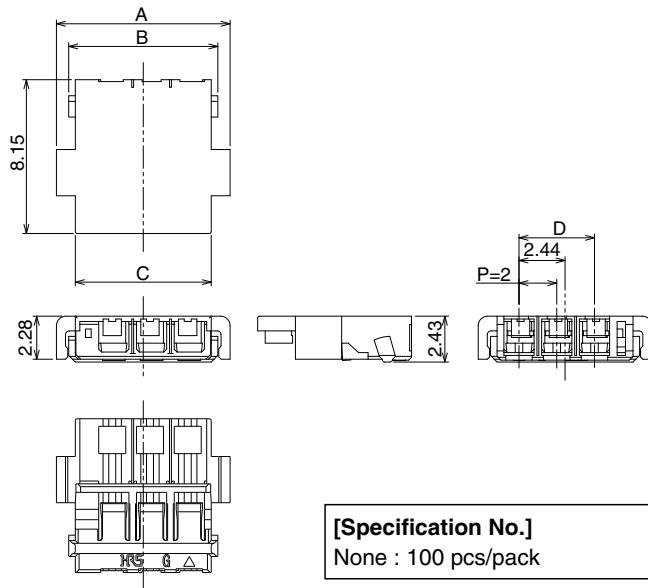
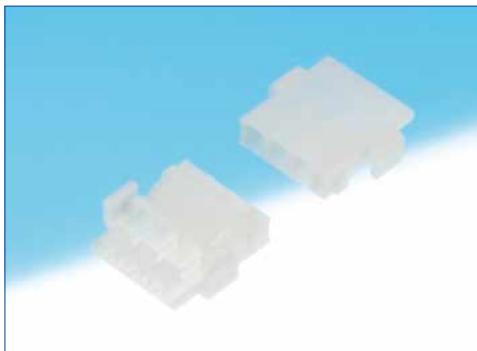
Unit : mm

Part No.	HRS No.	No. of contacts	A	B	C	Packaged Quantity/Tray
DF59-2P-2SP(50)	667-0017-0 50	2	7.2	5.9	2.0	100
DF59-3P-2SP(50)	667-0018-3 50	3	9.2	7.9	4.0	
DF59-4P-2SP(50)	667-0046-9 50	4	11.2	9.9	6.0	

Note 1 : Please order in full tray quantities.

Note 2 : For 4 pos. type contact No.1 and 2, No.3 and 4 are connected respectively.

■Crimp Socket

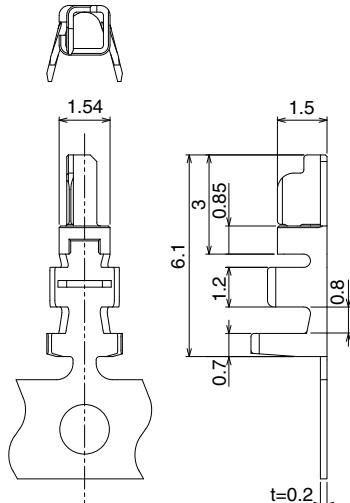


Unit : mm

Part No.	HRS No.	No. of contacts	A	B	C	D
DF59-2P-2C	667-0011-4 00	2	7.2	5.9	5.2	2.0
DF59-3P-2C	667-0012-7 00	3	9.2	7.9	7.2	4.0
DF59-4P-2C	667-0013-0 00	4	11.2	9.9	9.2	6.0

Note : Please order in full pack quantities. (100 pcs/pack)

■Crimp contact



Part No.	HRS No.	Packaging	Quantity	Treatment
DF59-22PCFA	667-0016-8 00	Reel contact (Note 1)	10,000 contacts / reel	Gold plated
DF59-22PCA	667-0022-0 00	Bulk contact (Note 2)	100 contacts / pack	

Note 1 : Please order reel contacts by full reel quantities. (10,000 pcs/reel)

Note 2 : Please order loose piece contacts in full pack. (100 pcs/pack)

●Applicable Wire (Tin plated soft copper wire)

Conductor Size (Wire Constitution)	Jacket Diameter
22 AWG (17 / ϕ 0.16mm)	UL1061 (ϕ 1.26mm)
	UL3265 (ϕ 1.38mm)

Note 1 : In these cases please contact Hirose Sales Representative.

- Assemble with non-applicable wire.
- LED application usage.

Note 2 : The strip length is a reference value. Please make adjustments to match with dimensional specifications. Refer to the crimping quality standards (ETAD-H0504-00) for details.

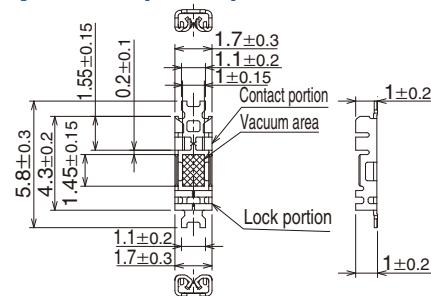
●Recommended Wire

UL1061, UL3265

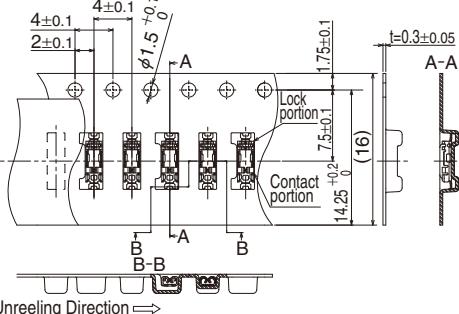
●Strip Length

1.7 to 2.3mm

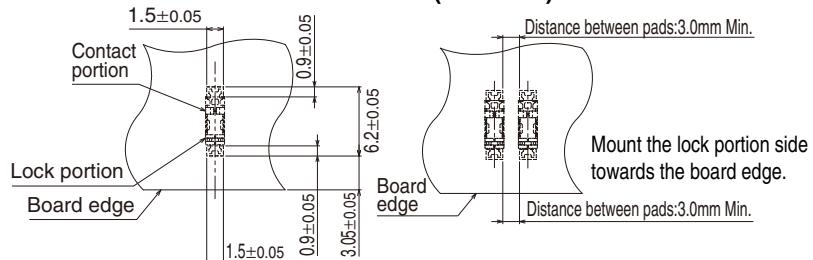
■Single Contact Type Straight Receptacle (SMT)



●Packaging Dimensions



●Recommended PCB Dimensions (t=1.6mm)

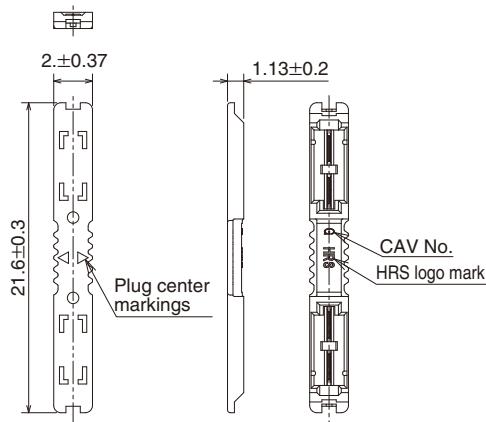


Part No.	HRS No.
DF59S-1S-V(21)	667-0024-6 21

[Specification No.]	
(21) : Tin plating, emboss packaging	

Note : Please order in full reel quantities. (10,000 pcs/reel)

■Single Contact Type Floating Plug

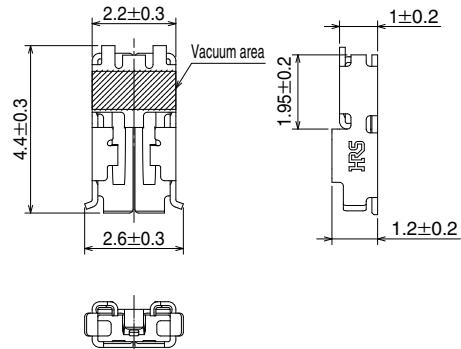
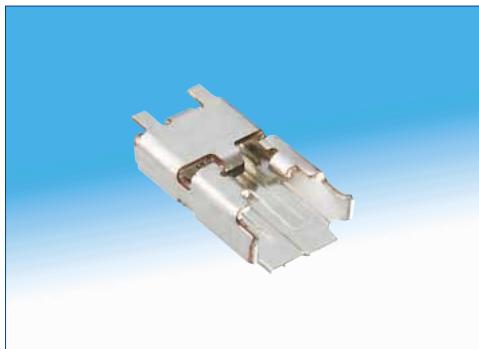


Part No.	HRS No.
DF59S-1P-FC(21)	667-0023-3 21

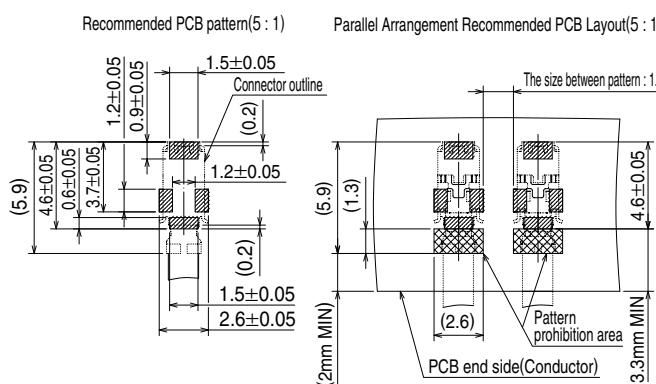
[Specification No.]	
(21) : Tin plating, emboss packaging	

Note : Please order in full reel quantities. (10,000 pcs/reel)

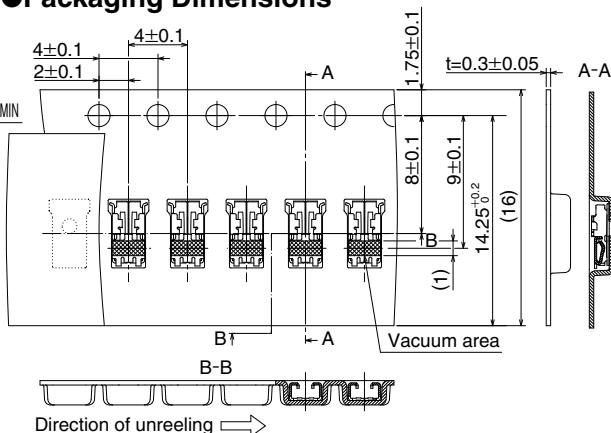
■Single Contact Type Right Angle Receptacle (SMT)



●Recommended PCB Dimensions (t=1.6mm)



●Packaging Dimensions



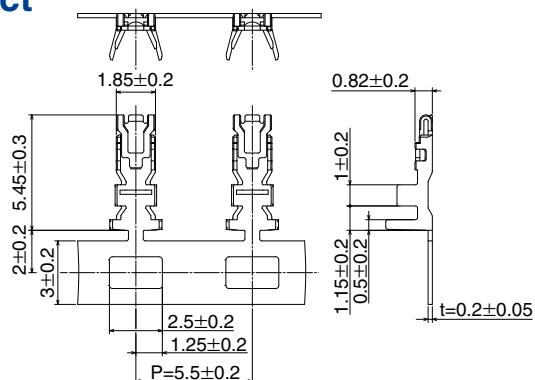
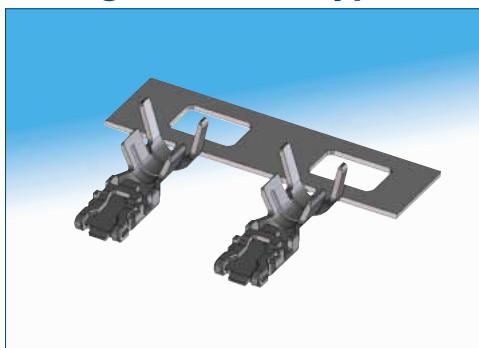
Part No.	HRS No.
DF59M-1S-H(21)	667-0041-5 21

[Specification No.]
(21) : Tin plating, emboss packaging

Note 1 : Please order in full reel quantities. (10,000 pcs/reel)

Note 2 : This connector is designed to mate with Crimp contact of DF59M only. (P.8)

■Single Contact Type Crimp Contact



Part No.	HRS No.	Applicable Wire				By Type	Quantity	Treatment
		Recommended Wire	Jacket Diameter	Conductor Size	Wire Constitution			
DF59M-2224PCF	667-0042-8 00	UL10368	$\phi 1.11$ to 1.26mm	22 AWG	$17/\phi 0.16\text{mm}$	Reel contact (Note 1)	15,000/reel	Tin plated
DF59M-2224PC	667-0044-3 00			24 AWG	$11/\phi 0.16\text{mm}$	Bulk contact (Note 2)	100/pack	
DF59M-2628PCF	667-0043-0 00		$\phi 1.26\text{mm}$	22 AWG	$17/\phi 0.16\text{mm}$		15,000/reel	
DF59M-2628PC	667-0045-6 00		$\phi 1.11\text{mm}$	24 AWG	$11/\phi 0.16\text{mm}$	Reel contact (Note 1)	15,000/reel	
			$\phi 0.88$ to 0.98mm	26 AWG	$7/\phi 0.16\text{mm}$	Bulk contact (Note 2)	100/pack	
				28 AWG	$7/\phi 0.17\text{mm}$			
			$\phi 0.98\text{mm}$	26 AWG	$7/\phi 0.16\text{mm}$			
			$\phi 0.88\text{mm}$	28 AWG	$7/\phi 0.17\text{mm}$			

Note 1 : Please order reel contacts by full reel quantities. (15,000 pcs/reel)

Note 2 : Please order loose piece contacts in full pack. (100 pcs/pack)

Note 3 : In these cases please contact Hirose Sales Representative.

- Assemble with non-applicable wire.

- LED application usage.

Note 4 : The strip length is a reference value. Please make adjustments to match with dimensional specifications.

Refer to the crimping quality standards (ETAD-H0778-00) for details.

◆Applicable Crimping Tool

Types	Part No.	HRS No.	Applicable Contact	Remarks
Applicator	AP105-DF59-22P	901-4619-8	DF59-22PCFA	
	AP105-DF59M-2224P	901-4638-2	DF59M-2224PCF	
	DHS887200H-UP	—		(Note 2) Manufactured by Japan Automatic Machine Co., Ltd.
	AP105-DF59M-2628P	901-4639-5	DF59M-2628PCF	
	DHS887300H-UP	—		(Note 2) Manufactured by Japan Automatic Machine Co., Ltd.
Press Unit	CM-105C	901-0001-0	—	
Hand Tool	HT801/DF59-22P	550-0404-7	DF59-22PCA ※UL1061 AWG#22 Only	
	HT801/DF59M-2224P	550-0420-3	DF59M-2224PC ※UL10368 AWG#22, 24 Only	
	HT801/DF59M-2628P	550-0421-6	DF59M-2628PC ※UL10368 AWG#26, 28 Only	
Extraction Tool (W-to-B)	DF-C-PO(B)	550-0179-2	DF59-22PCFA DF59-22PCA	
	DF-C-PO(A)	550-0170-8	DF59M Series	

Note 1 : Customers are strongly encouraged to utilize HRS application tooling or tooling created by a Hirose tooling partner.

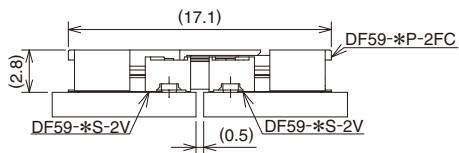
Hirose assumes no liability for customers using tooling from non-recognized sources.

Note 2 : Please contact Japan Automatic Machine Co., Ltd. (hereinafter J.A.M.) through their website regarding crimping issues

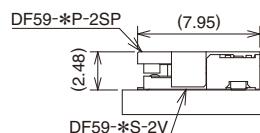
◆Mating Dimensions

●Board-to-board connection (floating plug)

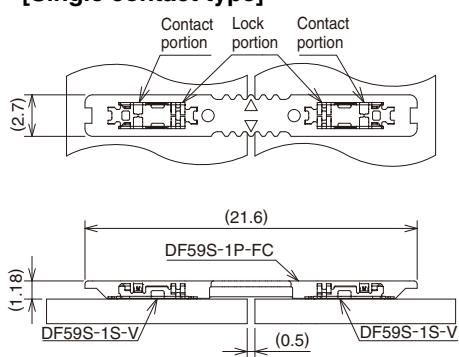
[Standard]



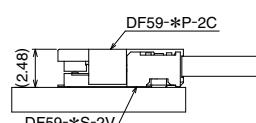
●Short-circuit pin connection



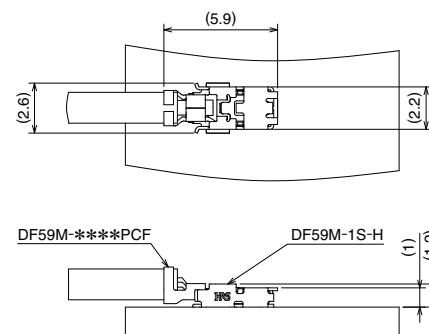
[Single contact type]



●Wire-to-Board connection [Standard]



[Single contact type]



◆Operating Precautions

1. Recommended Temperature Profile (Lead-free soldering possible)	<p>[Applicable Conditions]</p> <ol style="list-style-type: none"> 1. Peak Temperature : MAX 250°C 2. Heated Area : 220°C or above, within 60 sec. 3. Pre-heating Area : 150 to 180°C, 90 to 120 sec. 4. Number of Times : within 2 times <p>*Measured at contact lead area</p> <p>Please be noted that the reflow condition may vary depending on soldering paste type, manufacturer of soldering material, board size, as well as conditions of other mounting materials.</p> <p>(*1) Above temperature profile is our recommended value.</p>
2. Recommended Hand Solder Conditions	Soldering iron temperature : $350 \pm 10^{\circ}\text{C}$, soldering time : within 3 seconds
3. Recommended Screen Thickness, Open Ratio (Pattern Area Ratio)	Thickness 0.1mm, Open ratio : 100%
4. Warpage of PC board	Maximum of 0.02mm at the connector center, with both ends of the connector as reference points.
5. Cleaning Condition	Cleaning with IPA is possible. (Cleaning is not recommended. In case of cleaning, please evaluate if it causes a decrease in the performance which includes mechanical operation and environmental resistance.)
6. Precautions	<ul style="list-style-type: none"> ■ When inserting crimp-type (solderless) terminals to crimping (solderless) sockets, to maintain reliable performance, please do not insert obliquely. ■ DO NOT mate/un-mate a non-terminated plug with a non-mounted receptacles. This may lead to damage or deformation of the contacts. ■ Please note that pulling on the wires or cable during un-mating may cause damage. ■ DO NOT apply flux to the contact terminals when hand soldering the receptacle to the board. Flux can wick into the electrical contact areas and may lead to connection failures. ■ Slight discoloration on the insulating materials will not affect form, fit or function of the connectors. Black spots may appear on the mold resin but this does not affect the product quality. ■ Please refer to the following for the points for proper handling regarding mating/unmating operations. <ul style="list-style-type: none"> “DF59 Insertion and Removal Manual” ETAD-H0496-00 “DF59S Insertion and Removal Manual” ETAD-H0651-00 “DF59M Operation manual” ETAD-H0779-00

0.5mm pitch Board-to-Board connectors with floating structure

FX22 Series



Floating range: $\pm 0.6\text{mm}$

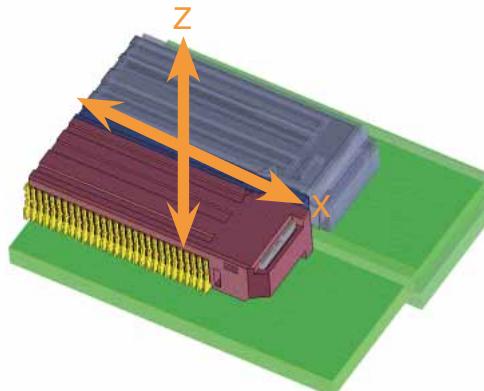


Fig.1

■ Features

1. The floating design

Structure provides for an mis-alignment of $\pm 0.6\text{mm}$ in both X and Z directions in 0.5mm pitch product. (Fig.1)

2. A double-beam contact structure

The independent double beam contact structure provides self-cleaning feature, ensuring high-contact reliability. (Fig.2)

3. Current capacity : 0.7A/pin

The FX22 features a high current capacity of 0.7A/pin relative to its 0.5mm pitch.

4. Effective mating length of 1.5mm

The signal contacts have effective contact lengths of 2.0mm and 1.5mm, which provide sufficient margin on the mating stroke.

5. Low connector height

The compact structure and low connector height fits well into areas as small as 5mm spacing, allowing for higher density mounting. (Fig.3)

6. Self-alignment and self-guiding structure

Guide posts enable self-alignment and ensure a secure connection.

A double-beam contact structure

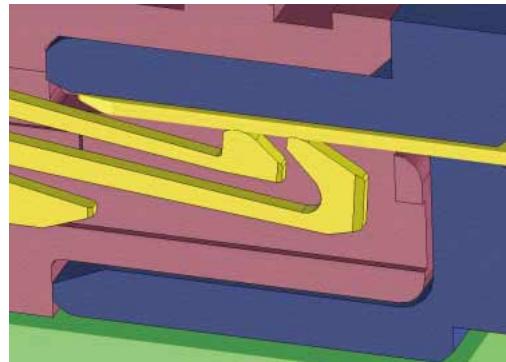


Fig.2

Mated connector dimensions

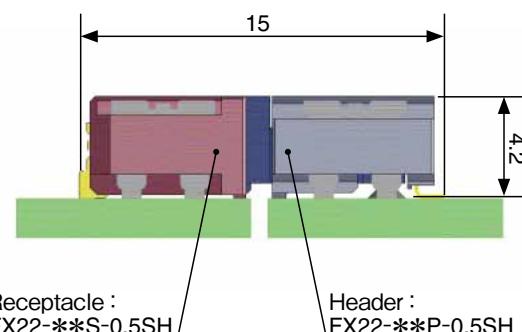


Fig.3

■Product Specifications

Ratings	Rated current 0.7A Rated voltage AC 50V	Operation temperature range : -55 to 85°C (Note 1) Storage temperature range : -10 to 60°C (Note 2)
Items	Specifications	Conditions
1. Contact resistance	70mΩ max.	100mA (DC or 1000Hz)
2. Insulation resistance	100MΩ min.	100V DC.
3. Withstanding voltage	No flashover or breakdown.	150V AC for 1min.
4. Mating Cycles	80mΩ max.	50 times insertions and extractions.
5. Vibration resistance	No electrical discontinuity for more than 1μs.	Frequency : 10 to 55 to 10Hz, approx 5 min Single amplitude : 0.75mm, 10 cycles for 3 axial directions.
6. Shock resistance	No electrical discontinuity for more than 1μs.	490m/s ² , duration of pulse 11ms at 3 times for 3 both axial directions.
7. Moisture resistance	80mΩ max Insulation resistance : 100MΩ min.	Exposed at 40 ± 2°C, 90~95%, 96h.
8. Temperature cycle	80mΩ max Insulation resistance : 100MΩ min.	Temperature : -55 → 85°C Time : 30 → 30 min, for 5 cycles

Note 1 : Includes temperature rise caused by current flow.

Note 2 : The term "storage" here refers to products stored for a long period prior to board mounting and use.

■Materials / Finish

Part	Material		Finish	UL standard
Insulator	Header	PA	Black	UL94V-0
	Receptacle	LCP		
Contact	Header	Copper alloy	Contact area : Gold plated	—
	Receptacle		Mounting area : Gold plated	
Metal fitting	Brass		Tin plated	—

■Product Number Structure

Refer to the chart below when determining the product specifications from the product number.

Please select from the product numbers listed in this catalog when placing orders.

●Right-angle receptacle

FX22 - 80 S - 0.5 SH

① ② ③ ④ ⑤

① Series name : FX22
② Number of contacts
③ Connector type S : Receptacle type P : Header type
④ Contact pitch : 0.5mm
⑤ Product style SH : Right-angle type

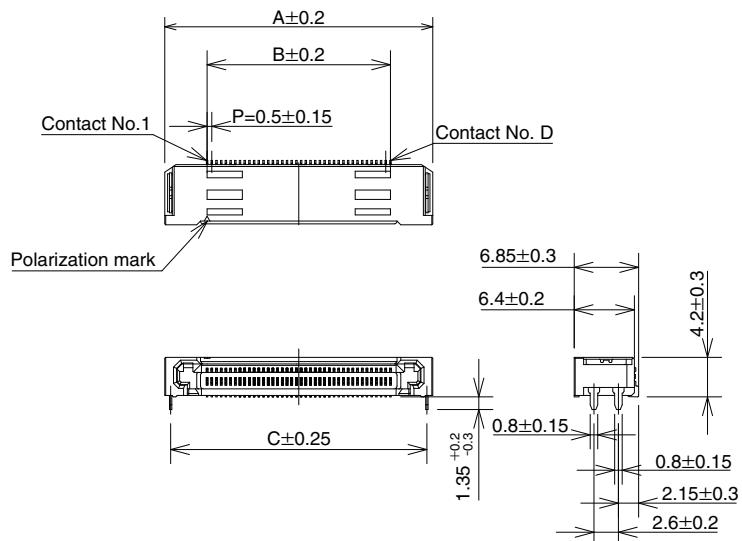
●Right-angle header

FX22 - 80 P - 0.5 SH

① ② ③ ④ ⑤

■ Right-angle receptacle

[FX22-**S-0.5SH]

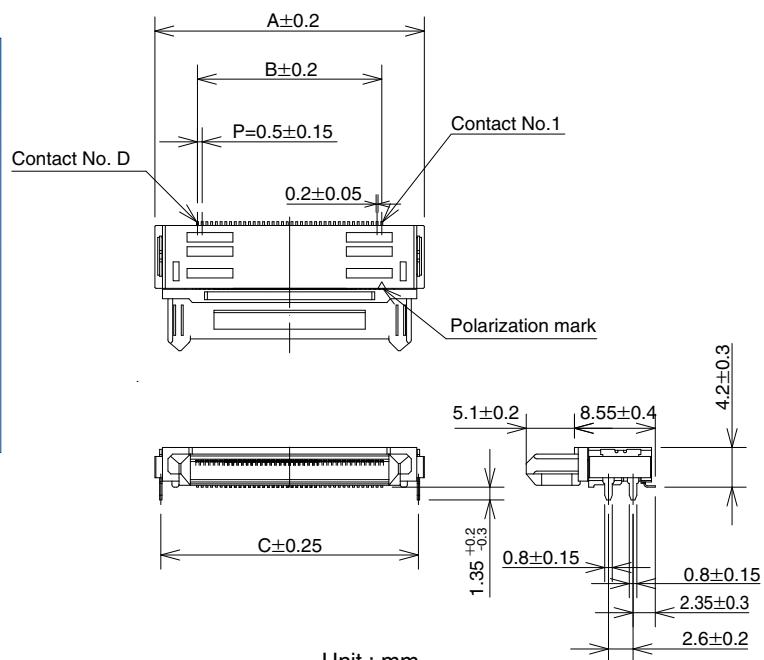


Unit : mm

Part No.	HRS No.	No. of contacts	A	B	C	D
FX22-40S-0.5SH	572-3100-6	40	28.5	19.5	27.25	40
FX22-50S-0.5SH	572-3101-9	50	33.5	24.5	32.25	50
FX22-60S-0.5SH	572-3102-1	60	38.5	29.5	37.25	60
FX22-80S-0.5SH	572-3103-4	80	48.5	39.5	47.25	80

■ Right-angle header

[FX22-**P-0.5SH]

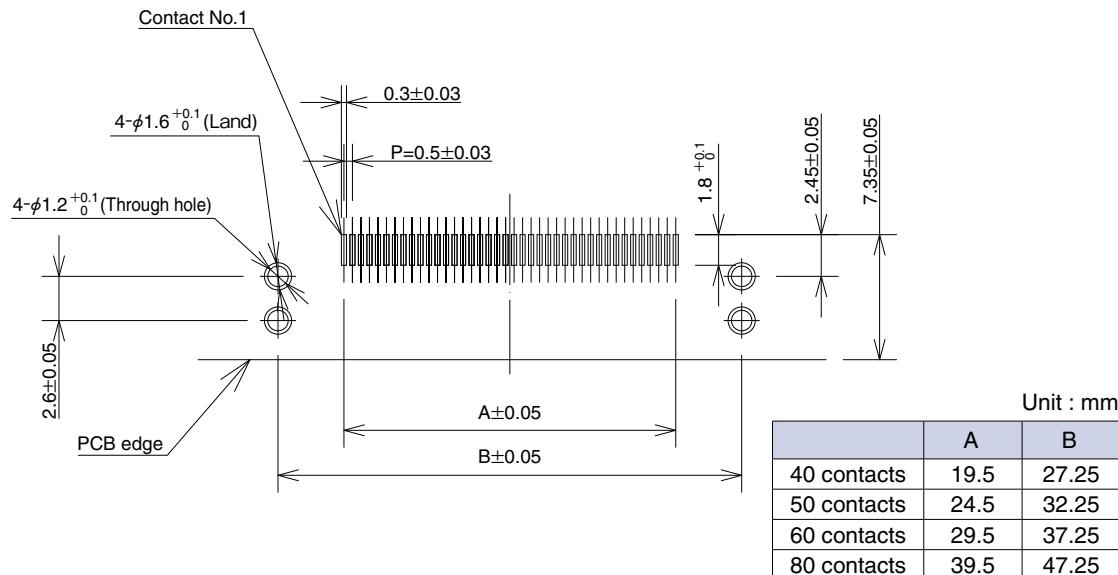


Unit : mm

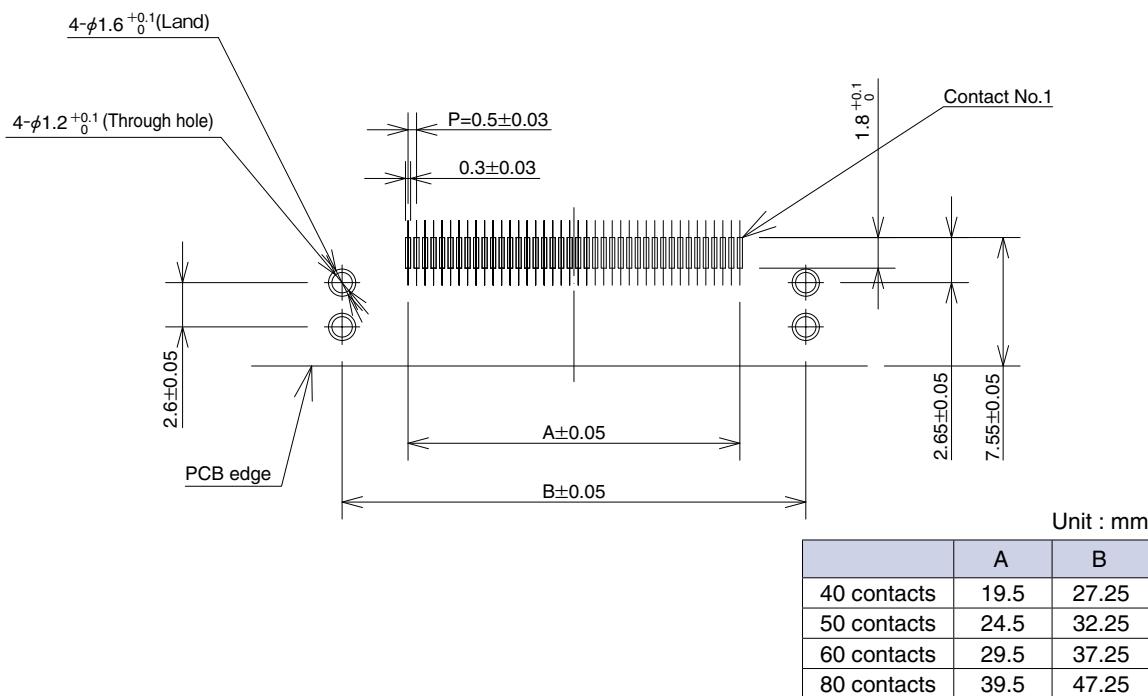
Part No.	HRS No.	No. of contacts	A	B	C	D
FX22-40P-0.5SH	572-3001-4	40	28.5	19.5	27.25	40
FX22-50P-0.5SH	572-3002-7	50	33.5	24.5	32.25	50
FX22-60P-0.5SH	572-3003-0	60	38.5	29.5	37.25	60
FX22-80P-0.5SH	572-3004-2	80	48.5	39.5	47.25	80

◆ **Recommended PCB layout dimensions**
(PCB thickness : t = 1.6mm / Stencil thickness : t = 0.12mm)

● **Right-angle receptacle**
[FX22-S-0.5SH]**

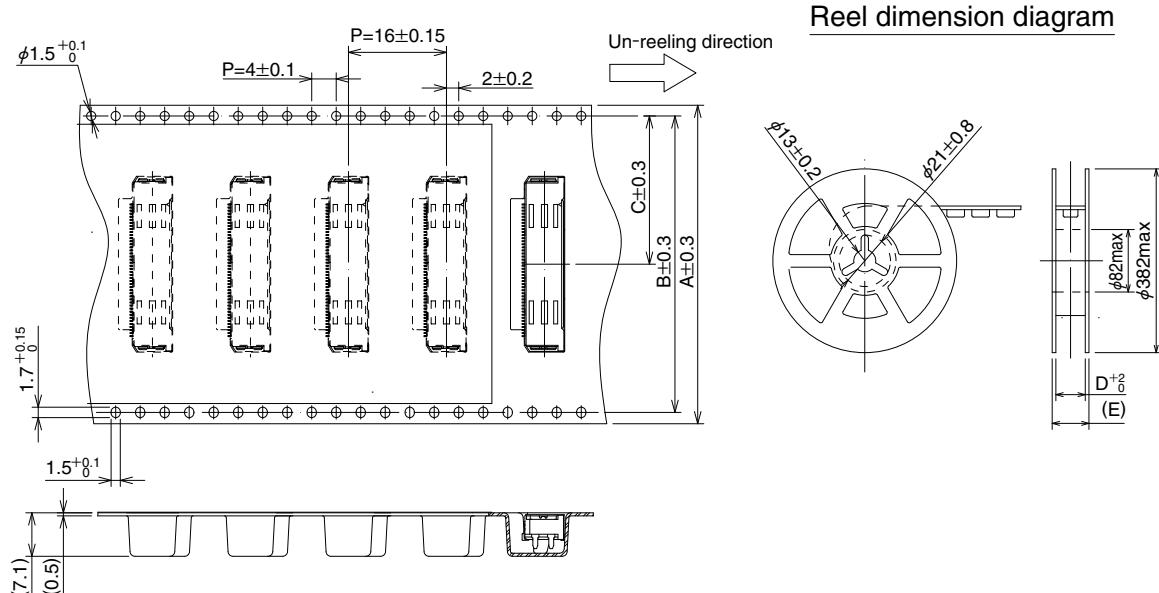


● **Right-angle header**
[FX22-P-0.5SH]**



◆Embossed tape packaging dimensions

●Right-angle receptacle

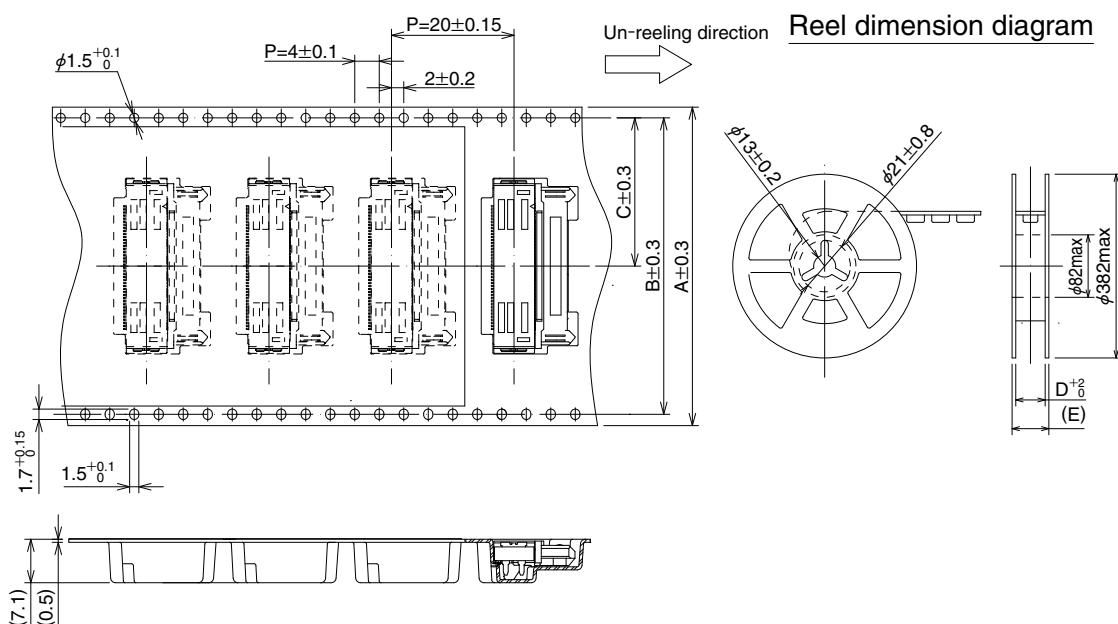


Unit : mm

Part No.	A	B	C	D	E
FX22-40S-0.5SH	44	40.4	20.2	44.4	50.4
FX22-50S-0.5SH	56	52.4	26.2	56.4	62.4
FX22-60S-0.5SH	72	68.4	34.2	72.4	78.4

(00) Embossed packaging : 700pcs/reel

●Right-angle header



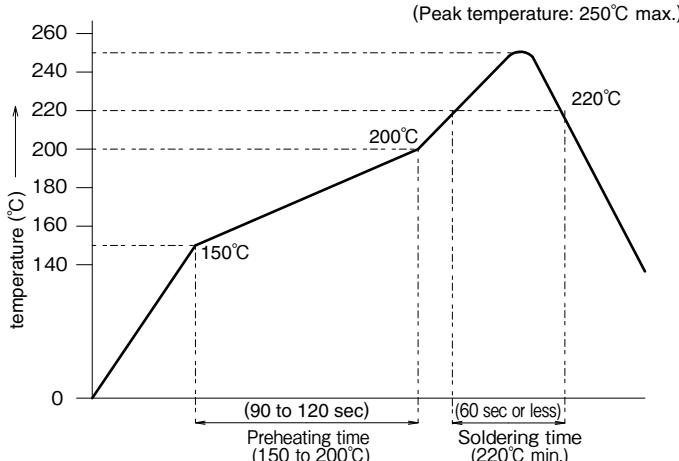
Unit : mm

Part No.	A	B	C	D	E
FX22-40P-0.5SH	44	40.4	20.2	44.4	50.4
FX22-50P-0.5SH	56	52.4	26.2	56.4	62.4
FX22-60P-0.5SH	72	68.4	34.2	72.4	78.4

(00) Embossed packaging : 500pcs/reel

◆ Recommended Temperature Profile

- This temperature profile is based on the setting conditions shown below and is for reference only. For individual applications, the temperature profile may vary in accordance with the conditions. Please confirm the profile before mounting.



<Applicable conditions>

Test PCB Size : 110×40×1.6mm

Material : Glass epoxy

Solder composition : Sn-3Ag-0.5Cu

Flux contained amount : 11wt%

Metal mask thickness : 0.12mm

Note 1 : This temperature profile shows recommended values.

Note 2 : The number of reflow processes should be no more than two.

Note 3 : Temperature profile may differ slightly depending on the type and amount of solder cream used.

◆ Cleaning conditions

- Organic Solvent-based cleaning

Solvent type	Room temperature cleaning	Heated cleaning
IPA (Isopropyl alcohol)	Yes	Yes

- Water based cleaning

When using water based cleaning agents (including terpene, and alkali saponifiers), pay special attention to how the cleaning agent will react to specific metals and plastics before selecting one of them. Various cleaning agent manufacturers publish reaction tables for their cleaning agents. Do not leave connectors with moisture remaining on them.

- Caution when washing

The electrical performance may deteriorate if the flux or cleaning detergent is left on the connector after the cleaning. Check thoroughly to ensure that there is no residue left on any of the surfaces.

◆ Precautions

- Avoid supporting the PCB only by the connectors. Please make sure to support the PCBs with screws, bolts, or other types of anchors as the primary means of support.
- When using low profile connectors, care should be taken not to use excessive prying or rotating forces during mating/unmating operations. This could cause damage and contact failure. Please handle with care.

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Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
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