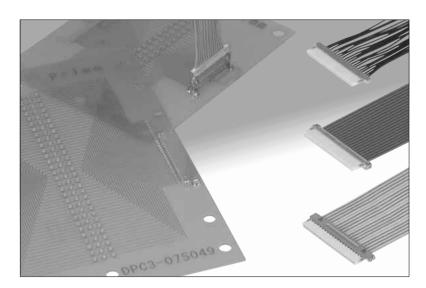
1 mm Contact Pitch, Board-to-Cable, Board-to-FPC, Board-to-Micro-coaxial Cable Connectors

DF19 Series



Overview

Industry and market accepted as "De facto" standard for LCD panel connections (panels under 12 inches).

High-performance connectors for LVDS high-speed differential signals.

■Features

1. Small configuration and board space

Thin design accepts discrete wire, thin micro-coaxial cable (ϕ 1.5mm, ϕ 1.6mm max.) and FPC 1.7 mm maximum thick.

2. Common use of receptacle

The same receptacle will accept plugs terminated with discrete wire, FPC or micro-coaxial cable.

3. Uniform external dimensions

The plug assembly external dimensions remain the same when is terminated with discrete wire. FPC or micro- coaxial cable.

4. Variety of mounting styles

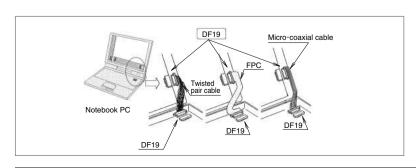
Device design engineers have a choice of mounting styles: topboard, offset, reverse mount offset and vertical.

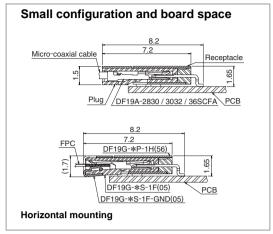
5. Ground connection

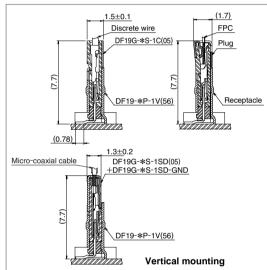
Metal grounding plates connect with the common ground line.

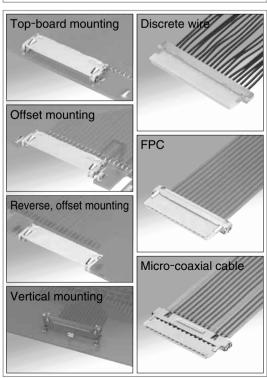
Applications

LCD connections in small consumer devices: digital cameras, notebook computers, PDA's. Any device requiring high-density interconnection for consistent high speed transmission data rates.









■Product Specifications

	Current rating	AWG#28 : 1A				
		AWG#30: 0.9A				
		AWG#32: 0.8A	Operating temperature range	-35°C to 85°C Note 1	Storage temperature range	-10℃ to 60℃ Note 2
Rating		AWG#36: 0.5A		Note 2		
		FPC : 0.5A	Operating humidity range	20% to 80%	Storage humidity range	40% to 70%
		Micro-coaxial cable AWG# 40: 0.3A				
	Voltage rating	100V AC				

Item	Specification	Conditions
1.Insulation resistance	500 MΩ min.	100 V DC
2.Withstanding voltage	No flashover or insulation breakdown.	300 V AC / one minute
3.Contact resistance	30 mΩ max. (50 mΩ max. for FPC)	100 mA
4.Insertion-Extraction force (per contact)	Min. 0.2N, Max. 3N	Measured with a steel pin ϕ 0.2 \pm 0.005
5.Vibration	No electrical discontinuity of $1\mu s$ or more.	Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 2 hours in each of the 3 directions.
6.Humidity (Steady state)	Contact resistance: 30 m Ω max. (50 m Ω max. for FPC) Insulation resistance: 500 M Ω min.	96 hours at temperature of 40±2°C and humidity of 90% to 95%
7.Temperature cycle	Contact resistance: 30 m Ω max. (50 m Ω max. for FPC) Insulation resistance: 500 M Ω min.	Temperature: $-55^{\circ}\text{C} \rightarrow +5^{\circ}\text{C}$ to $+35^{\circ}\text{C} \rightarrow +85^{\circ}\text{C} \rightarrow +5^{\circ}\text{C}$ to $+35^{\circ}\text{C}$ Time (Minutes): $30 \rightarrow 10 \rightarrow 30 \rightarrow 10$ 5 cycles
8.Durability (insertion/ withdrawal)	Contact resistance: 30 mΩ max. (50 mΩ max. for FPC)	30 cycles
9.Resistance to soldering heat	No deformation of the insulator parts affecting performance.	Re-flow soldering: At the recommended temperature profile Manual soldering: Soldering iron temperature 300°C, 3 seconds

Note1: Includes temperature rise caused by current flow.

Note2: The term "storage" refers to connectors stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range covers non- conducting condition of installed connectors in storage, shipment or during transportation.

Note3: 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 / Finish

Product	Component	Material	Finish/Color	Remarks
	Insulator	Polyamide	Beige	UL94V-0
Receptacle	Contacts	Phosphor bronze	Gold plated	
	Grounding plate	Phosphor bronze	Tin-copper plated	
Dlug	Insulator	Polyamide	Beige	
Plug	Tin-lead plated	Stainless steel	Tin-copper plated	
Crimp contact	Contact	Phosphor bronze	Gold Plated	
Diversion DDC	Insulator	Polyamide	Beige	UL94V-0
Plug for PPC	Contact	Phosphor bronze	Gold plated	
Grounding plate for PPC	Grounding plate	Stainless steel	Tin-copper plated	
	Insulator	LCP	Beige	UL94V-0
Plug for micro-coaxial cable	Contact	Phosphor bronze	Gold plated	
	Grounding plate	Phosphor bronze	Tin plated	
Grounding plate for micro-coaxial cable	Grounding plate	Phosphor bronze	Tin plated	

■Ordering information

Connector

$$\frac{DF19}{\bullet} \ \frac{\#}{@} - \frac{*}{@} \ \frac{P}{@} - \frac{1}{@} \ \frac{H}{@}$$

$$\frac{DF19}{\bullet} \ \frac{\#}{@} - \frac{*}{@} \ \frac{S}{@} - \frac{1}{@} \frac{F}{@} - \frac{GND}{@}$$

Note 1: Number of contacts will differ depending on the connector style.

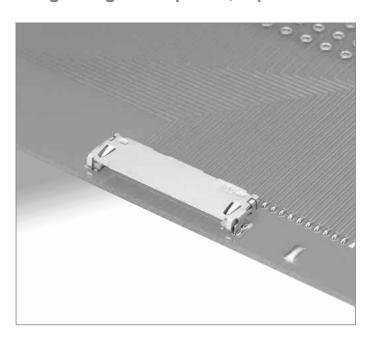
Note 2: Grounding plates are required when terminating with the FPC and micro-coaxial cable.

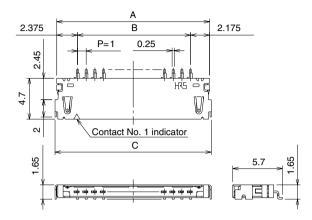
●Contact

DF19A -
$$\frac{2830}{0} \frac{SCF}{2} \frac{A}{8} \frac{(**)}{0}$$

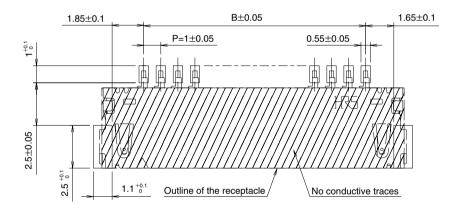
Conductor size	Plating
2830 : AWG#28~#30	A : Gold
3032 : AWG#30~#32	
36 : AWG#36	
② Contact type	4 Packaging
SCF : Plug contact, tape and reel	Blank: 10,000 pieces / reel
packaging	(41) : 20,000 pieces / reel

■Right angle receptacle, top-board mounting





●PCB mounting pattern



Specification (56): Tape & reel packaging (1,000 pieces per reel)

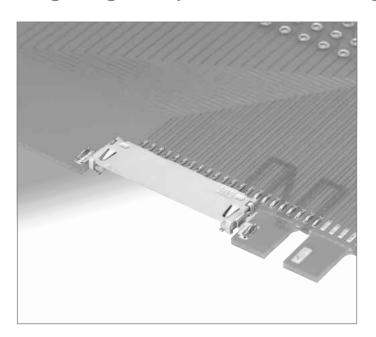
Unit: mm

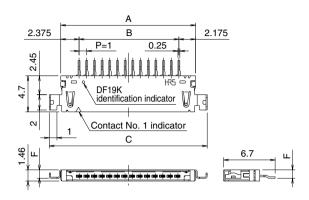
Part number	CL No.	Number of contacts	Α	В	С	Remarks	RoHS
DF19G- 8P-1H (56)	685-0021-0-56	8	11.55	7	11.95		YES
DF19G-14P-1H (56)	685-0004-0-56	14	17.55	13	17.95	1 05 mm himb	
DF19G-20P-1H (56)	685-0006-6-56	20	23.55	19	23.95	1.65mm high	
DF19G-30P-1H (56)	685-0015-7-56	30	33.55	29	33.95		

Note: Order by number of reels.

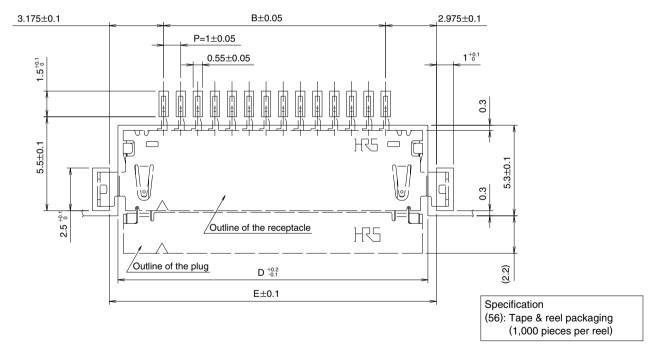
B256 **HS**

■Right angle receptacle, offset mounting





●PCB mounting pattern



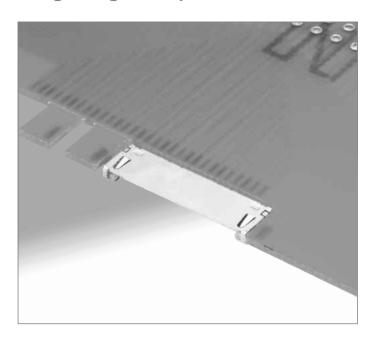
Unit: mm

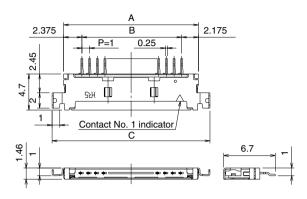
									_	-
Part number	CL No.	Number of contacts	Α	В	С	D	Е	F	Remarks	RoHS
DF19K-20P-1H (56)	685-0008-1-56	20	23.55	19	26.55	24.15	25.15	0.1	1 Omm bigh	YES
DF19K-30P-1H (56)	685-0032-6-56	30	33.55	29	36.55	34.15	35.15	0.1	.1 1.0mm high	TES

Part number	CL No.	Number of contacts	Α	В	С	D	Е	F	Remarks	RoHS
DF19L-14P-1H (56)	685-0003-8-56	14	17.55	13	20.55	18.15	19.15	1.1		
DF19L-20P-1H (56)	685-0019-8-56	20	23.55	19	26.55	24.15	25.15	1.1	1.1mm high	YES
DF19L-30P-1H (56)	685-0016-0-56	30	33.55	29	36.55	34.15	35.15	1.1		

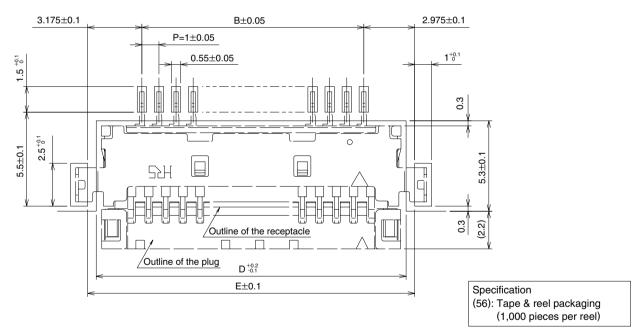
Note: Order by number of reels.

■Right angle receptacle, reverse offset mounting





●PCB mounting pattern

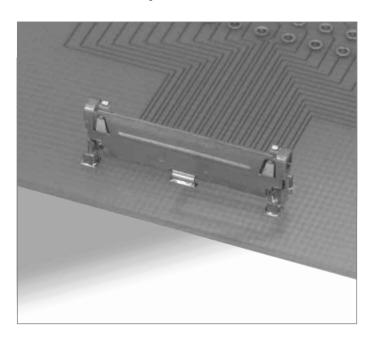


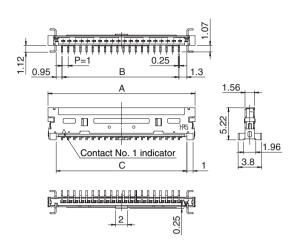
Unit: mm

Part number	CL No.	Number of contacts	Α	В	С	D	Е	Remarks	RoHS
DF19KR-14P-1H (56)	685-0024-8-56	14	17.55	13	20.55	18.15	19.15	1 0mm high	YES
DF19KR-20P-1H (56)	685-0023-5-56	20	23.55	19	26.55	24.15	25.15	1.0mm high	

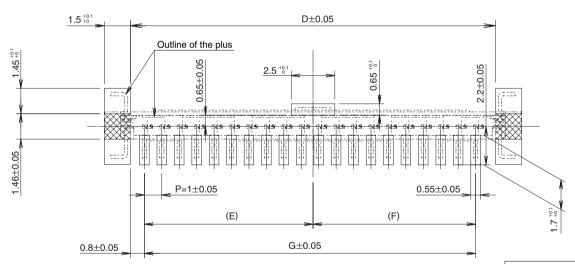
Note: Order by number of reels.

■ Vertical receptacle





●PCB mounting pattern



Conductive traces in this area must be covered by dielectric compound.

Specification (56): Tape & reel packaging (1,000 pieces per reel)

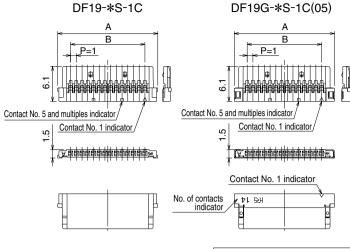
Unit: mm

Part number	CL No.	Number of contacts	Α	В	С	D	Е	F	G	RoHS
DF19-14P-1V (56)	685-0036-7-56	14	17.9	13	15.25	14.95	6.675	6.325	13	YES
DF19-20P-1V (56)	685-0037-0-56	20	23.9	19	21.25	20.95	9.675	9.325	19	163

Note: Order by number of reels.

■Plug (Discrete wire)





Specification Blank,(05): Bag packaging (100 pieces per bag)

Unit: mm

Part number	CL No.	Number of contacts	Α	В	RoHS
DF19 - 8S-1C	685-0029-1	8	11.5	7	
DF19 -14S-1C	685-0012-9	14	17.5	13	YES
DF19 -20S-1C	685-0011-6	20	23.5	19	160
DF19 -30S-1C	685-0013-1	30	33.5	29	

				•	
Part number	CL No.	Number of contacts	Α	В	RoHS
DF19G - 8S-1C(05)	685-0022-2-05	8	11.5	7	
DF19G -14S-1C(05)	685-0005-3-05	14	17.5	13	YES
DF19G -20S-1C(05)	685-0007-9-05	20	23.5	19	160
DF19G -30S-1C(05)	685-0014-4-05	30	33.5	29	

Note: Order by number of bags.

■Crimp contacts

Applicable UL style

UL1571 (Note2)

Part number	CL No.	Packaging	Quantity	Finish	RoHS		
DF19A-2830SCFA (* *)	685-0048-6-**		Sac Specifications			0 0	
DF19A-3032SCFA (* *)	685-0046-0-**	Tape & reel	See Specifications number below	Gold plated	YES	0.7	0.63
DF19A- 36SCFA (* *)	685-0047-3-**		number below				T
Specification number * *(Blank: Tape & reel packag (41): Tape & reel packag • Applicable cable (**)	jing (10,000 pieces jing (20,000 pieces	per reel)	nductor)				1.5
Wire size (stranded wire cond	ductor) Jacket	diameter					2
AWG#28 (7/ 0.127 mr	m)						
AWG#30 (7/ 0.1 mm)	0.5mm t	to 0.6mm					00.5
AWG#32 (7/ 0.08 mm)						\
AWG#36 (7/ 0.05 mm	0.2	7mm		Ca	arrier strip		

Note 1: When using other than the recommended wire, contact your Hirose sales representative.

1.2mm to 1.9mm

Strip length

Note 2: Contact your Hirose sales representative when using AWG#36.

●Tools

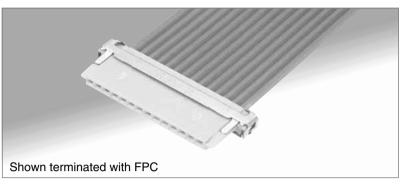
Part	Part number	CL No.
Applicator	AP105-DF19S	901-4571-3
Press unit	CM-105	901-0005-4

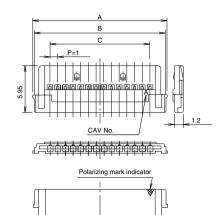
Note 1: Use of other than Hirose Electric approved tools will void the product warranties.

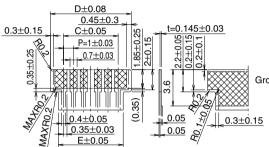
Note 2: Contact Hirose for the wire striping, contact crimp and contact insertion instructions.

■Plug (Flat Printed Circuit)

Note: Socket and grounding plate is required.







Ground area < 888331 to 5μ m thick solder plated>

Signal area < 8883:1 to 5μ m thick solder plated>

Unit: mm

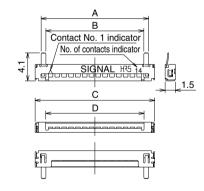
	Part number	CL No.	Number of contacts	Α	В	С	D	Е	RoHS
	DF19G-14S-1F(05)	685-0017-2-05	14	17.5	17.1	13	15.6	14	
	DF19G-20S-1F(05)	685-0009-4-05	20	23.5	23.1	19	21.6	20	YES
DF19G-30S-1F(05) 685-0033-9-05 30 33.5 33.1 29 31.6 30	DF19G-30S-1F(05)	685-0033-9-05	30	33.5	33.1	29	31.6	30	

Specification (05): Bag packaging (100 pieces per bag)

Note: Order by number of bags.

■Ground plate for FPC





Unit: mm

Part number	CL No.	Number of Contacts	Α	В	С	D	RoHS
DF19G-14S-1F-GND(05)	685-0018-5-05	14	15.75	14.35	17.5	14.4	
DF19G-20S-1F-GND(05)	685-0010-3-05	20	21.75	20.35	23.5	20.4	YES
DF19G-30S-1F-GND(05)	685-0034-1-05	30	31.75	30.35	33.5	30.4	

Specification (05): Bag packaging (100 pieces per bag)

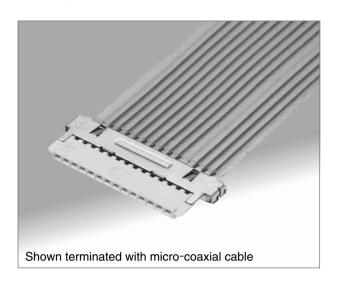
Note: Order by number of bags.

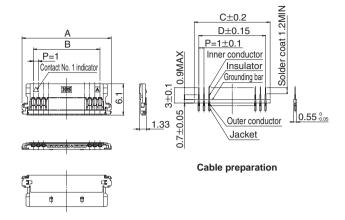
Grounding plate installation tools

Туре	Part number	CL No.		
Desktop tool (for 14 pos.)	DF19G-14S/PR-MD2	902-4514-6		
Desktop tool (for 20 pos.)	DF19G-20S/PR-MD2	902-4513-3		
Desktop tool (for 30 pos.)	DF19G-30S/PR-MD2	902-4518-7		

Note1: Product is not guaranteed unless Hirose approved tools are used.

■Plug (Micro-coaxial cable)





Note 1: Connectors are designed to allow termination without cutting of the pitch loss prevention tape.

- Note 2: Required Solder coating for inner conductor.
- Note 3: When using 2-conductor micro-coaxial cable some contact positions will not be used.

Contact your Hirose sales representative.

Part number	CL No.	Number of contacts	Α	В	С	D	RoHS
DF19G-14S-1SD(05)	685-0026-3-05	14	17.4	13	14.8	13	VEC
DF19G-20S-1SD(05)	685-0025-0-05	20	23.4	19	20.8	19	TES

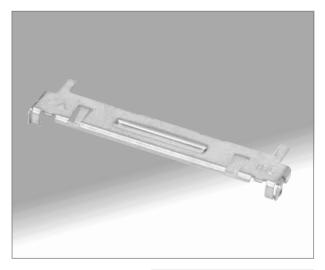
Specification
(05): Bag packaging
(100 pieces per bag)

Note: Order by number of bags.

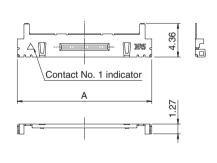
● Applicable cable (Micro-coaxial cable)

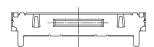
Wire size (stranded wire center conductor)	Jacket diameter
AWG#40 (7/ 0.03mm)	0.3mm to 0.4mm

■Grounding plate for micro-coaxial cable



Specification
Blank: Bag packaging
(100 pieces per bag)





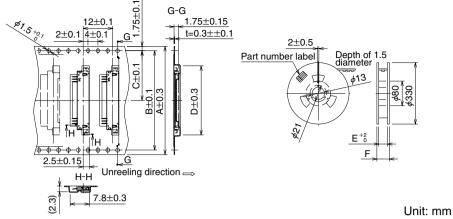
Unit: mm

			U	
Part number	CL No.	Number of contacts	Α	RoHS
DF19F-14S-1SD-GND	685-0028-9	14	17.5	YES
DF19G-20S-1SD-GND	685-0027-6	20	23.5	160

● Embossed Carrier Tape Dimensions Receptacles

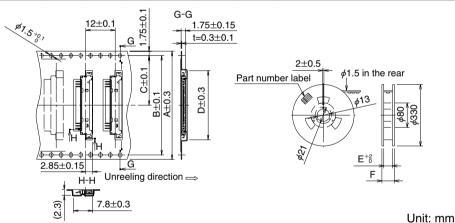
●DF19G-*P-1H(56)

●DF19K-*P-1H(56) ●DF19L-*P-1H(56)



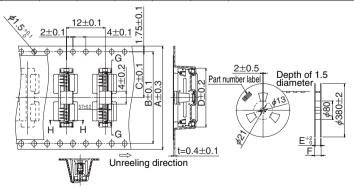
Connector	Number of contacts	Α	В	С	D	E	F	Remarks
DF19G- 8P-1H(56)	8	24		11.5	16.1	24.4	30.4	
DF19G-14P-1H(56)	14	44	40.4	20.2	22.1	44.4	50.4	Top-board mounting
DF19G-20P-1H(56)	20	44	40.4	20.2	28.1	44.4	50.4	(1.65mm high)
DF19G-30P-1H(56)	30	56	50.2	26.2	38.1	56.4	62.4	
DF19K-20P-1H(56)	20	44	40.4	20.2	28.1	44.4	50.4	Offset mounting (1.0mm high) Offset mounting (1.1mm high)
DF19K-30P-1H(56)	30	56	52.4	26.2	38.1	56.4	62.4	
DF19L-14P-1H(56)	14	44	40.4	20.2	22.1	44.4	50.4	
DF19L-20P-1H(56)	20	44	40.4	20.2	28.1	44.4	50.4	
DF19L-30P-1H(56)	30	56	52.4	26.2	38.1	56.4	62.4	

●DF19KR-*P-1H(56)



Connector	Number of contacts	Α	В	С	D	Е	F	Remarks
DF19KR-14P-1H(56)	14	44	40.4	20.2	22.1	44.4	50.4	Reverse type of DF19K
DF19KR-20P-1H(56)	20	44	40.4	20.2	28.1	44.4	50.4	Offset mounting (1.0mm high)

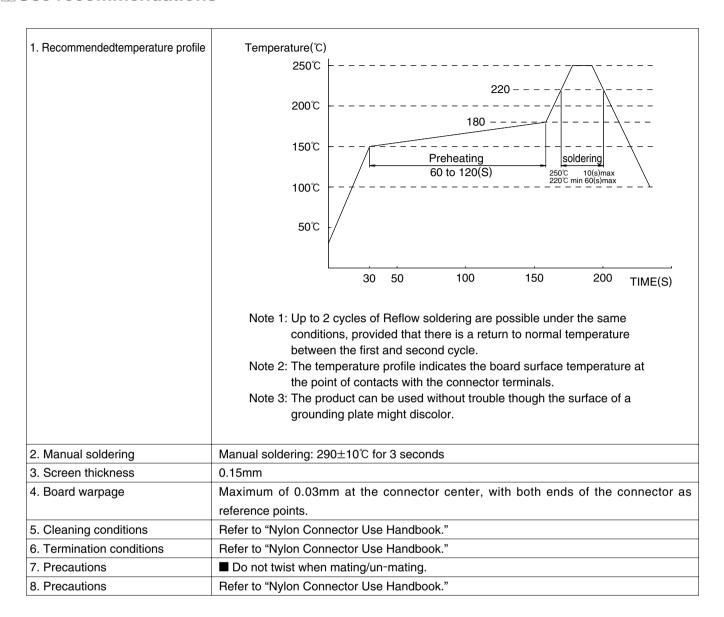
●DF19-*P-1V(56)



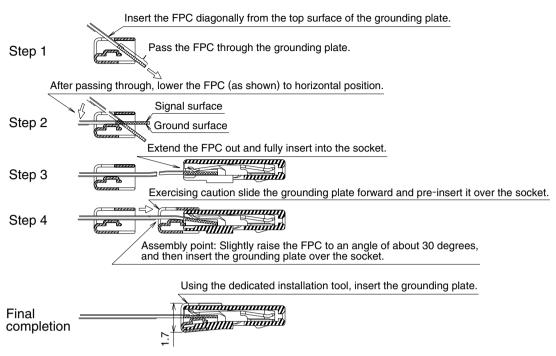
Unit: mm

Connector	Number of contacts	Α	В	С	D	Е	F	Remarks
DF19-14P-1V(56)	14	32	28.4	14.2	18.2	32.4	38.4	Vertical receptacle
DF19-20P-1H(56)	20	44	40.4	20.2	24.2	44.4	50.4	vertical receptacle

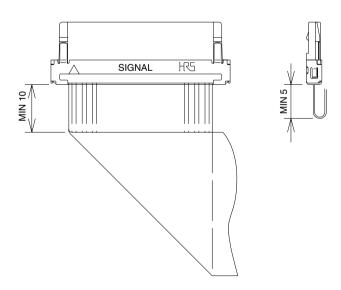
◆Use recommendations



▶ Plug (FPC Type) Termination Procedures (Dedicated Assembly Tooling is required.)



- Note 1: The grounding plate and the plug are supplied as separate components.
- Note 2: Dedicated assembly fixtures are required at each stage of the termination process. For detail, refer to the instruction manual supplied with the tools.
- Note 3: Do not apply excessive forces to FPC (Bending or twisting) as it may introduce cracks in the copper foil (on the cover film edge).
- Note 4: To protect the FPC, insertion and disconnection of the connectors should be performed parallel to the mating direction.
- Note 5: Do not apply excessive tension to FPC.
- Note 6: Refer to FPC manufacturer for bend radius and other specific recommendation. Distance should be allowed for the bending position, as illustrated below.



Note 7: Follow the instruction manuals for the termination and assembly fixtures and tools.

ПОСТАВКА ЭЛЕКТРОННЫХ КОМПОНЕНТОВ

многоканальный

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001 Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru_6 moschip.ru_4 moschip.ru_9