

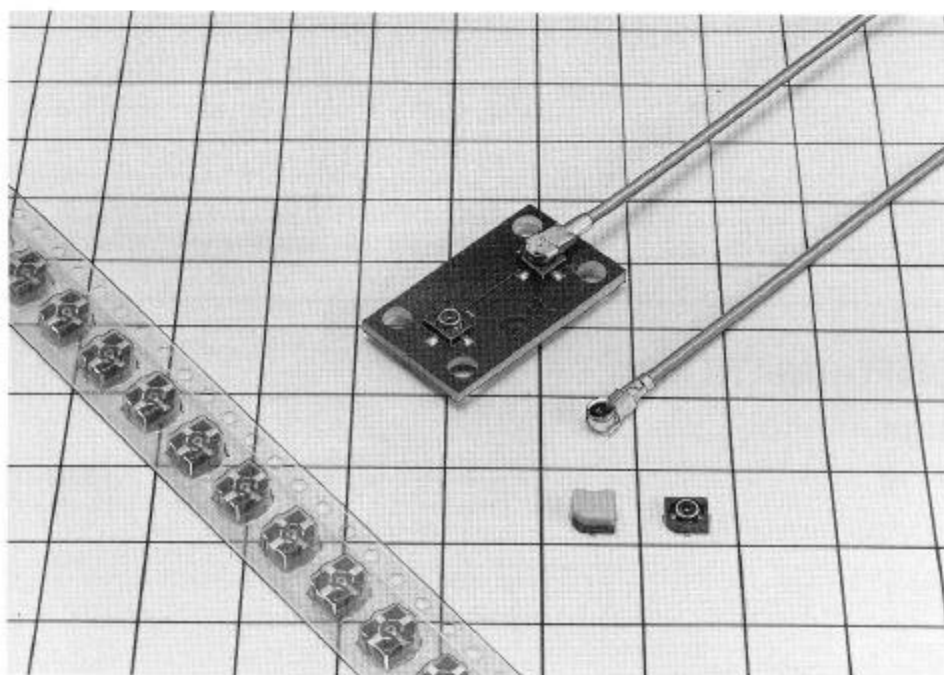
HRS® H.FL Series

The world's smallest low-profile coaxial connectors H.FL Coaxial Connectors

■ OUTLINE

The H.FL series of coaxial connectors consists of the world's smallest surface-mount low profile coaxial connectors.

The H.FL connectors have a lower profile, with a mounted height of approximately 30% that of our S.FL2 connectors. They occupy 20% less board space, allowing higher density internal wiring.



■ FEATURES

- (1) Height off printed circuit board of 3mm when connected (lowest in the world).
- (2) High frequency response of V.S.W.R 1.3 or less from D.C. to 3000 MHz.
- (3) Compressed wire system used on the cable side connector for both the center and exterior, providing stable connection quality. For the external conductor compression part, the shielded wire is compressed between metal, providing stability with respect to fluctuations in heat.
- (4) The ultra-fine Teflon cable can be used for wiring connections and this enables high-density wiring inside of the unit.
 - 1.48 mm diameter (single shield) cable :
CO-6F/FH-SB manufactured by Hitachi Cable Ltd. DFS111-UL1979 manufactured by Junkosha Co., Ltd. and 0.8DS-PBE manufactured by Sumitomo Electric Industry Co., Ltd.
 - 1.32 mm diameter (double shield) cable :
A12B0733 manufactured by Junkosha Co., Ltd.
 - 1.47 mm diameter (single shield) cable :
CXN2571 manufactured by W.L. Gore+Associates, Inc.
- (5) The connector can be easily removed with an extraction jig.
- (6) Emboss taping makes automatic mounting possible. In addition, connectors with caps are available for use with all types of mounters.
- (7) Connection can be easily verified. Despite the ultra small size, a locking feeling is provided making it possible to check that the connector is securely connected.
- (8) The connectors are designed to protect against mis-insertion.
- (9) A cut is provided on the circuit board side connector, making it simple to check the direction after mounting.
- (10) A plug connector (H.FL-LP 1.25C) for use with 75Ω cable has been added to the Series. The board-side connector is used jointly with H.FL-R-SMT. The high frequency characteristics show a V.S.W.R. of 1.2 or less from DC to 500 MHz. Suitable cable is 1.25C-6FFH manufactured by Hitachi Cable Ltd.

■ APPLICATIONS

Portable telephones, cellular telephones, wireless communications devices, electronic measuring equipment, GPS, etc.

■ MATERIALS and TREATMENT

Part name	Material	Treatment
Shell	Phosphor bronze	Silver plating
Insulator	PBT plastic (plug side) Liquid crystal polymer (receptacle side)	Black Black
Male center contact	Bronze	Gold plating
Female center contact	Phosphor bronze	Gold plating

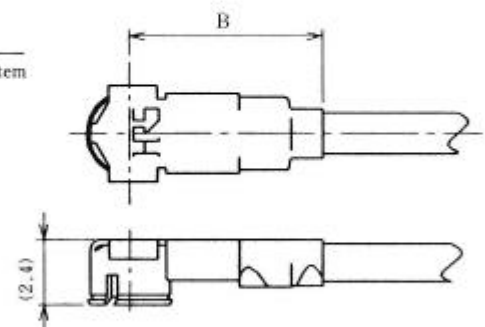
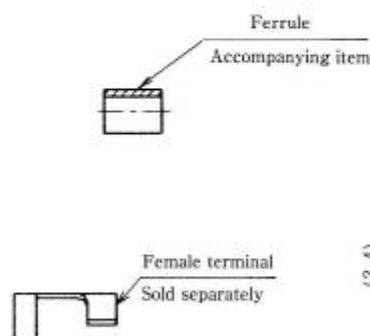
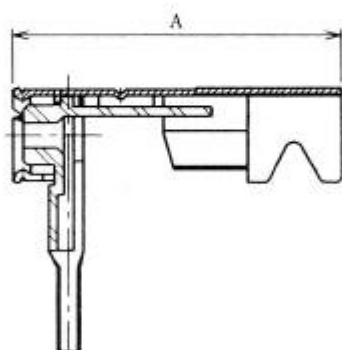
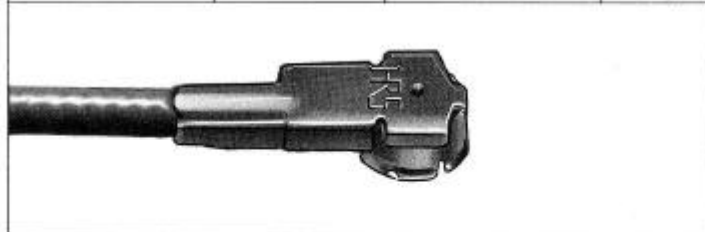
■ PERFORMANCE

Item	Rated value
Characteristic impedance	50Ω
Insulation resistance	500MΩ or greater at DC 250V
Contact resistance	20mΩ (center), 10mΩ (exterior) at DC 10mA
Dielectric strength	AC 300V (r.m.s), 1 minute
Contact service life	50 times
Voltage standing wave ratio	1.3 or less, DC to 3,000MHz (target value)

■ PRODUCT INFORMATION

▲ L-shaped plugs

Item	HRS No.	Model No.	Sales Quantities	Applicable cable	A length	B length
Right-angle plug shell	CL331-0503-4-01	H.FL-LP-DFS111 (01)	Sold by the package (100 pieces per pack)	Hitachi CO-6F and FH-SB Junkosha DFS111-UL1979 Sumitomo 0.8DS-PBE	10.4	(6.95)
	CL331-0504-7-01	H.FL-LP-A32 (01)	Sold by the package (100 pieces per pack)	Junkosha A12B0733	10.8	(7.35)
	CL331-0506	H.FL-LP-1.25C (01)	Sold by the package (100 pieces per pack)	Hitachi 1.25C-6FFH	10.4	(6.95)
Female contacts	CL331-0511-2	H.FL-LP Female contacts	Sold by the reel (10,000 contacts per reel)	The same as above		



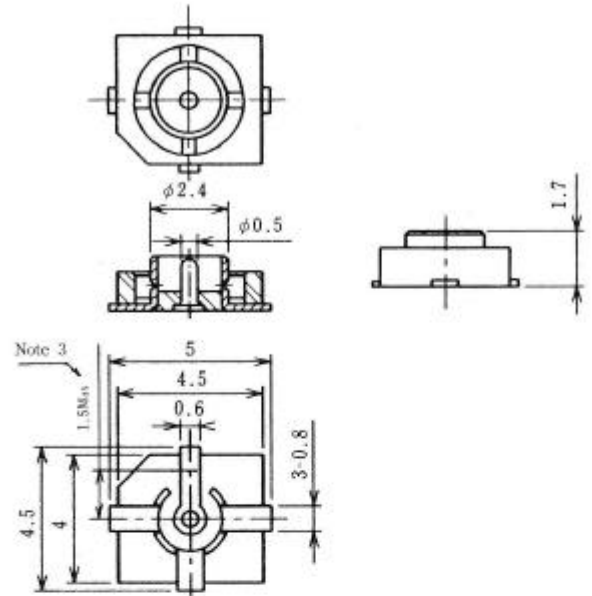
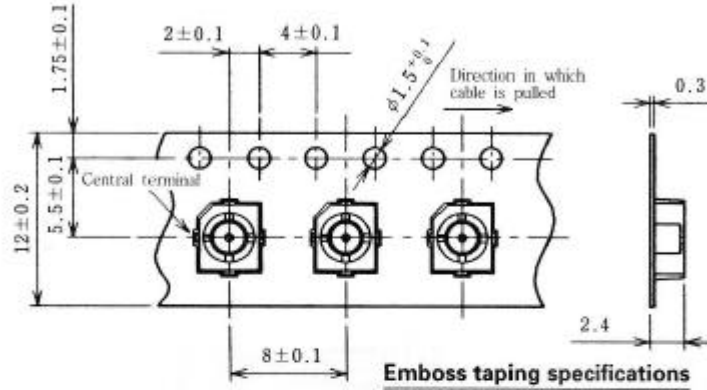
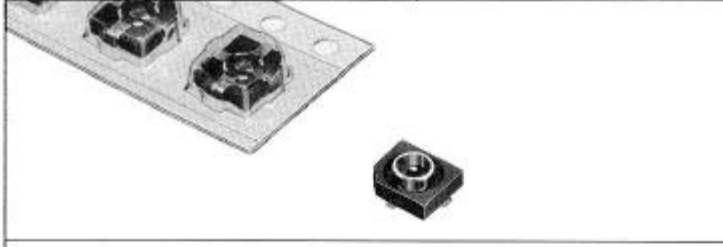
View after connected to cable

NOTE 1 : Sales quantities of the H.FL-LP-DFS111 (01), H.FL-LP-A32 (01) are in units of 1 package (containing 100 pieces).
Also note that the H.FL-LP female contacts are sold in units of 1 reel (containing 10,000 pieces).

NOTE 2 : The female contacts are sold as separate items.

▲ Receptacles

HRS No.	Model No.	Sales Quantities
CL331-0521-6-01	H.FL-R-SMT (01)	Sold by the package (100 pieces per pack)
CL331-0521-6-10	H.FL-R-SMT (10)	Sold by the reel (2,500 pieces per reel)



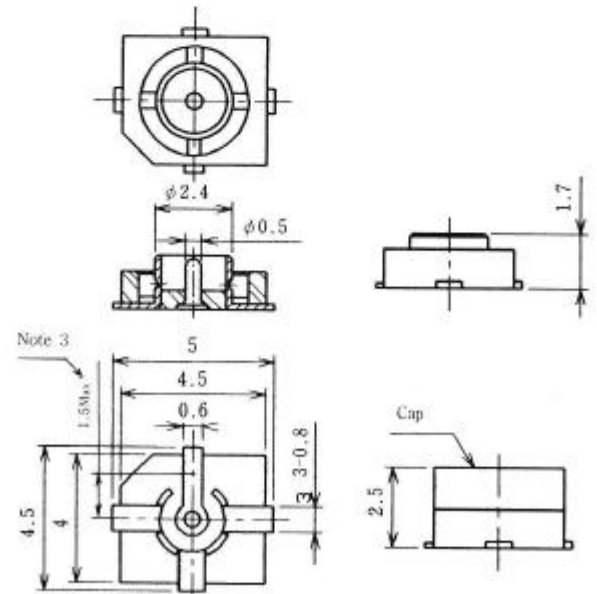
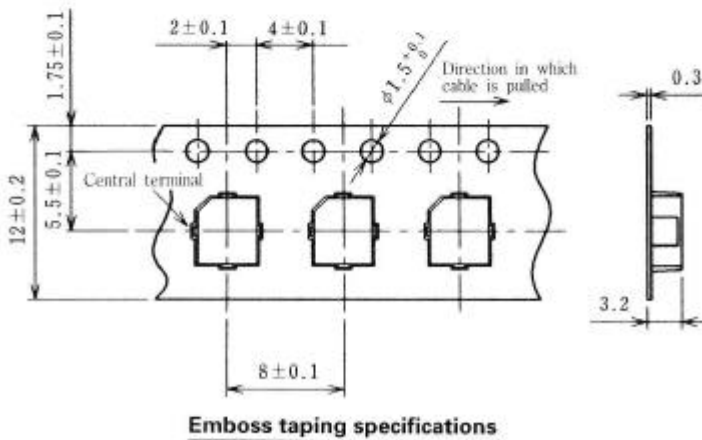
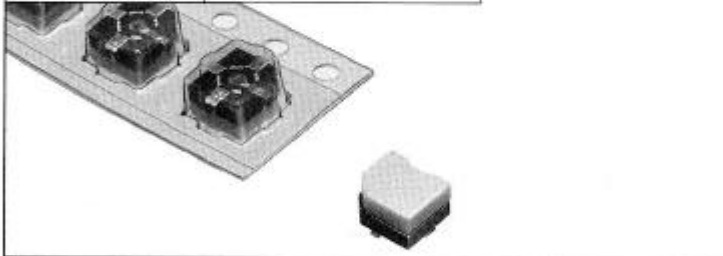
NOTE 1 : Sales quantities of the H.FL-R-SMT (01) are in units of 1 package (containing 100 pieces).
Also note that the H.FL-R-SMT (10) are sold in units of 1 reel (containing 2,500 pieces).

NOTE 2 : Special placement equipment may be required.

NOTE 3 : Allowable mold plastic on central terminal.

▲ Receptacles (with caps)

HRS No.	Model No.
CL331-0522-9-10	H.FL-R-SMT (C) (10)



NOTE 1 : These receptacles are sold in minimum units of 1 reel (2,500 receptacles).

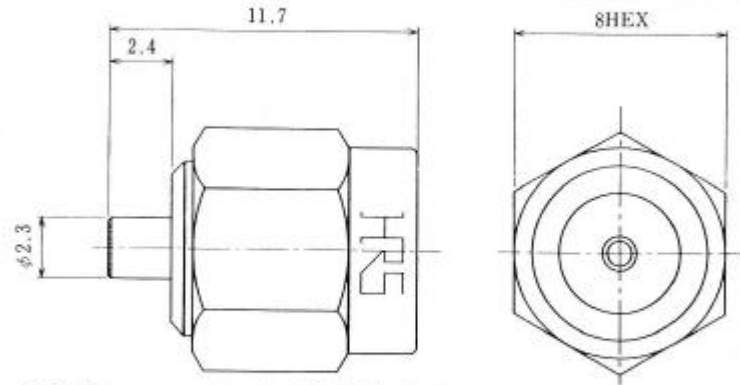
NOTE 2 : These products include caps so that they can be mounted with any mounters. They cannot be inserted as such. Remove the cap after reflow.

NOTE 3 : Allowable mold plastic on central terminal.

Final product diagram

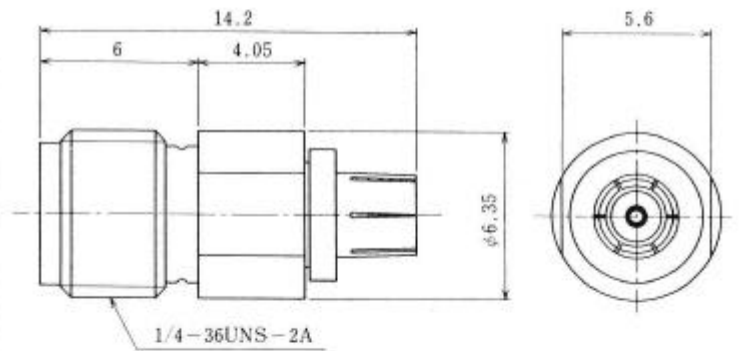
▲ Conversion Adapters

HRS No.	Model No.
CL311-0232-4	HRMP-H,FLJ



NOTE : The engagement portion of the H.F.L side does not have a lock mechanism and so this item cannot be used other than for performance measurements.

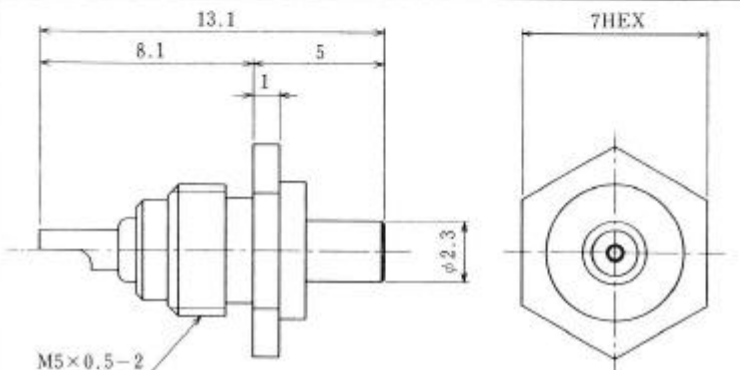
HRS No.	Model No.
CL311-0264-0	HRMJ-H,FLP-3



NOTE : The engagement portion of the H.F.L side does not have a lock mechanism and so this item cannot be used other than for performance measurements.

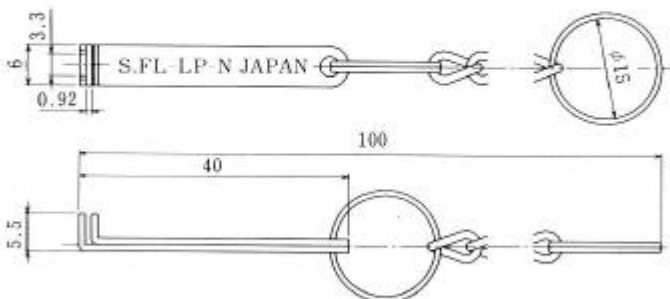
▲ Accessories

HRS No.	Model No.
CL331-0516-6	H,FL-R-1



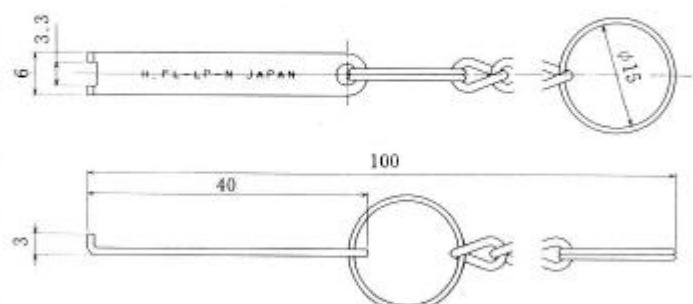
NOTE : This receptacle is used for testing the conduction, withstand pressure and other aspects of the harness part.

HRS No.	Model No.
CL331-0151-9	S,FL-LP-N



NOTE : The jig is used to pull out from the engaged condition.

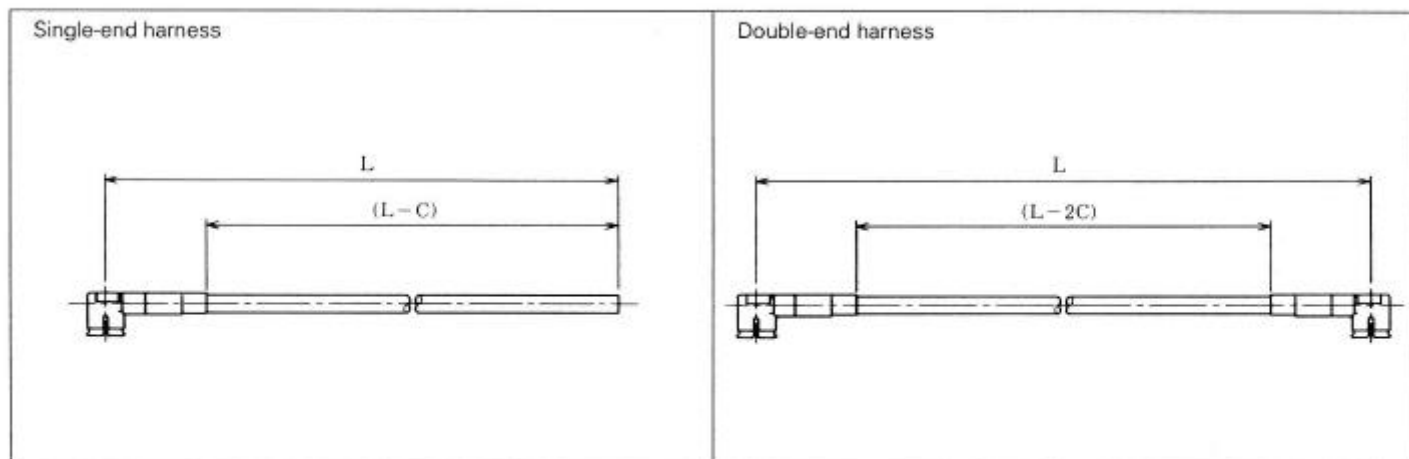
HRS No.	Model No.
CL331-0551-7	H,FL-LP-N



NOTE : This jig can be inserted from the cable side which allows it to be used in narrow spaces.

◆ Harness Items

The dimension specifications of the harness items of the H.FL Series should be made as indicated below.



Please specify the dimensions from the connector center for both the double-end and single-end types.
The standard tolerances are as follows :

Total length	Tolerance (mm)
35 ~ 200	± 4
201 ~ 500	± 8
501 ~ 1000	± 12
1001 ~	± 1.5%

NOTE : The shortest length is 35 mm.

C Dimension

H.FL-LP-DFS111 : 6.95

H.FL-LP-A32 : 7.35

◆ Usage Precautions

▲ Plugs

• Disconnection and Connection of Connectors

a. The disconnection and connection of the connectors is accomplished by hooking the end portion of the S.FL-LP-N or H.FL-LP-N onto the connector hook portion, aligning with the connector coupling axis, and pulling it off perpendicularly, or, holding the connector body, aligning with the connector coupling axis and pulling it off.

Holding the cable to pull off the connector should never be attempted since doing so will damage the connector.

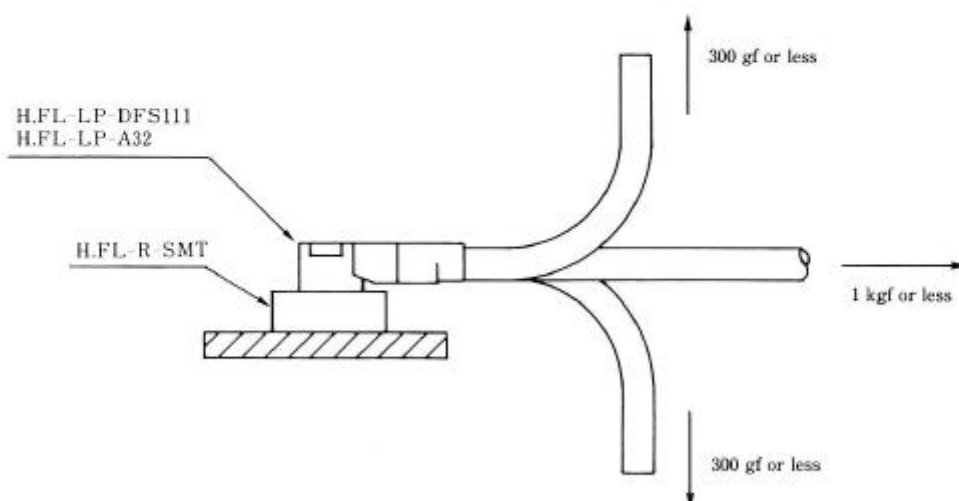
b. To join connectors, the coupling axes of both connectors are aligned and inserted as perpendicular as possible.

Do not attempt an insertion on an extreme angle.

• Permissible Load On the Cable After Connector Coupling

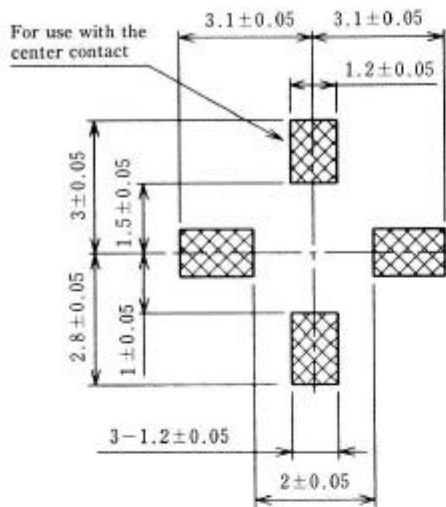
The permissible load on the cable after connector coupling is indicated in the diagram below.

A load in excess of this value should not be applied to the cable.



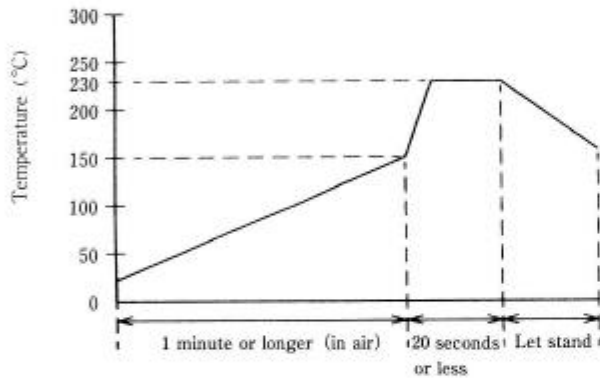
▲ Receptacles

• Board Pattern Dimensions



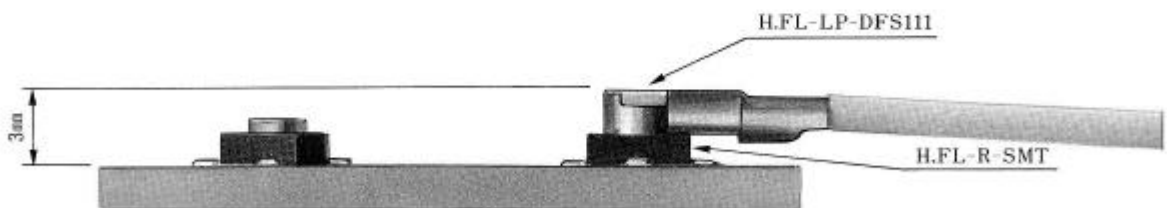
- The pattern dimensions listed to the left should be strictly observed. Pattern dimensions other than those specified could lead to short circuits or a drop in the binding force of the board.
- A screen thickness of 0.15 to 0.25 mm is recommended for cream solder printing.

• Mounting Temperature Profile (Reference)



- NOTE : Reflow soldering should be conducted with a printed circuit board surface peak temperature of 240 °C for 5 seconds or less. The mounting temperature profile will change depending on such factors as the size of the board, solder used, and the solder thickness.

◆ View of mounted connector



MEMO:

Lined area for writing a memo, consisting of multiple horizontal dashed lines.



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