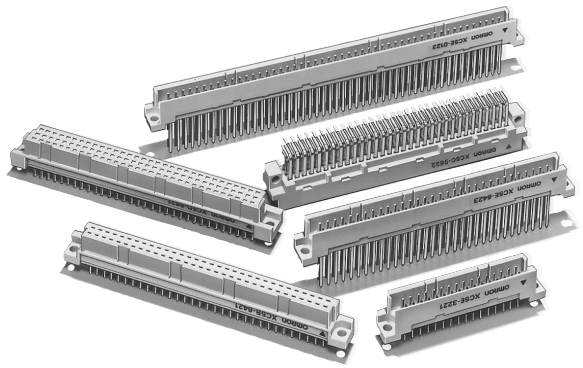
DIN Twin-contact Connectors
XC5

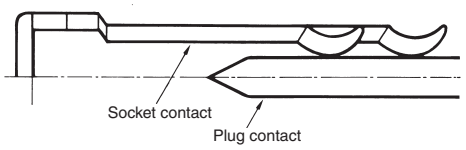
A Wide Variety of DIN Connectors That Conform to UL/CSA Standards.

- Fully preserves the characteristics of normal DIN connectors while increasing the number of terminals available.
- Meets world market needs with products ranging from one-piece connectors (card edge) to two-piece connectors.
- Uses a twin-contact system for high reliability and low cost.
- Lower insertion force as a result of FEM analysis techniques.
- Conform to UL standards (file no. E 103202) and CSA standards (file no. LR 62678).

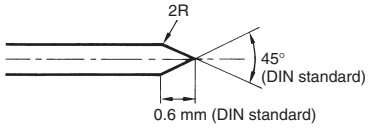


■ Structure

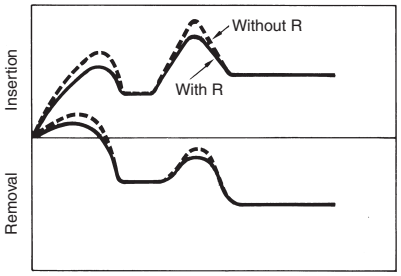
Twin Contacts
(2-point Contact System)



■ Low Insertion Force Design

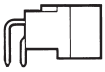
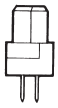
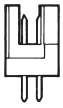
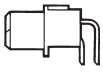


The shape of the Plug contact tip is based on the DIN standard dimensions, however, a small radius, R, has been introduced between the shaft and the tip. This results in less force being required for insertion.

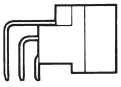
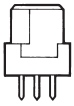
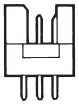
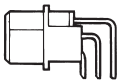


■ Connector Styles

Double-row Connectors

Model	XC5A B type	XC5B B type	XC5E Q type	XC5F Q type
Appearance	Plug with right-angle terminals 	Socket with straight terminals 	Plug with straight terminals 	Socket with right-angle terminals 

Triple-row Connectors

Model	XC5C C type	XC5D C type	XC5G R type	XC5H R type
Appearance	Plug with right-angle terminals 	Socket with straight terminals 	Plug with straight terminals 	Socket with right-angle terminals 

■ Ratings and Characteristics

Rated current	2 A
Rated voltage	300 VAC
Contact resistance	20 mΩ max. (at 20 mV, 100 mA max.)
Insulation resistance	10^6 MΩ min. (at 100 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.)
Connector insertion	0.59 N max. per contact
Contact removal	0.15 N min. (with test gauge, t = 0.56 mm)
Insertion durability	200 times
Ambient temperature	Operating: –55 to 125°C (with no icing)

■ Materials and Finish

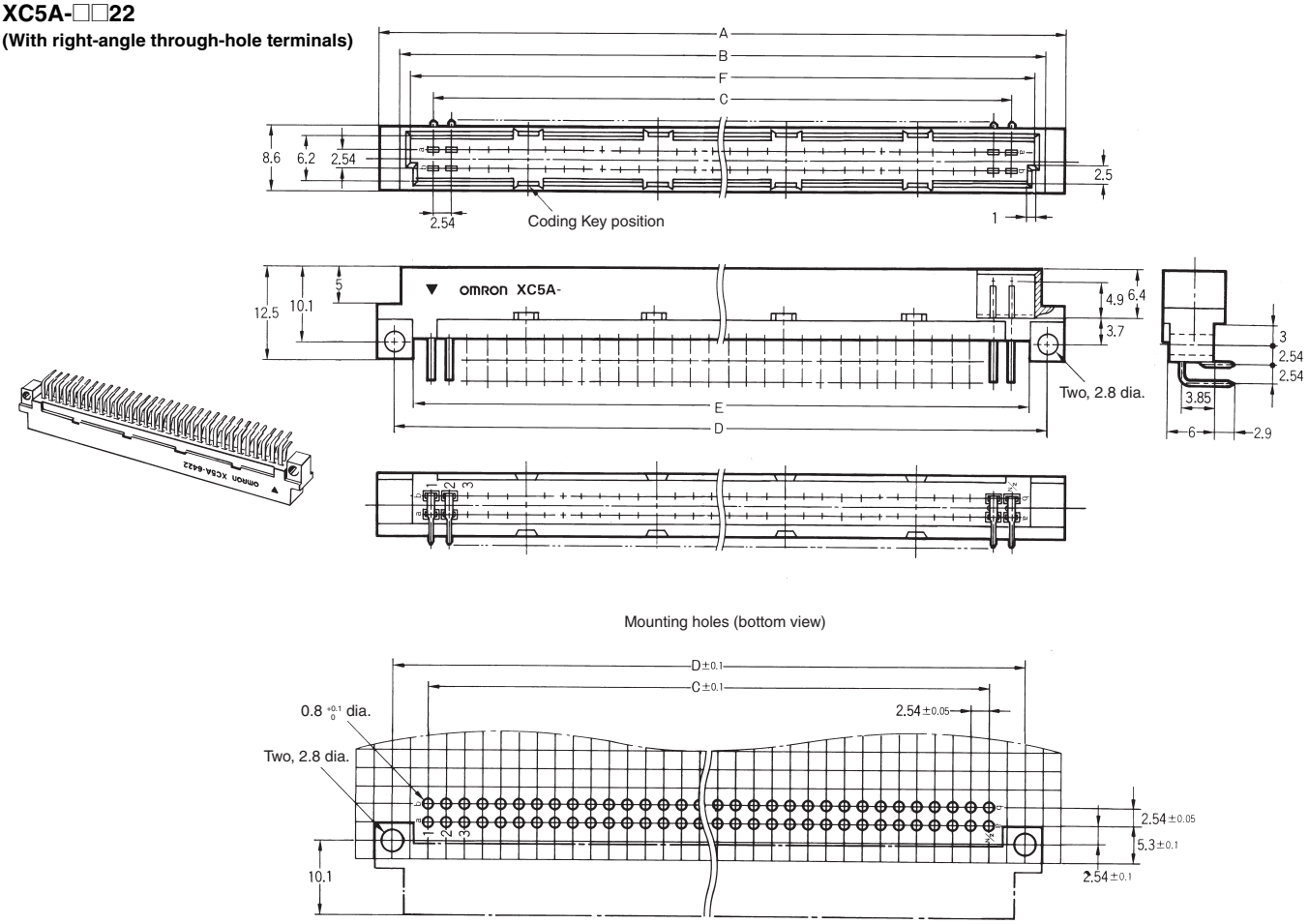
Item		Plugs	Sockets
Housings		Fiber-glass reinforced PBT resin (UL94V-0)/ gray	
Contacts	**Mating end**	Brass/nickel base, 0.4-μm gold plating (See note 1.)	Phosphor bronze/nickel base, 0.4-μm gold plating (See note 1.)
	Terminal	Brass/nickel base, tin plating	Phosphor bronze/nickel base, tin plating

Note: 1. For non-standard plating specifications, contact OMRON
2. Wrap terminal contacts are made from phosphor bronze.
3. See “Precautions” for information about Wire Wrap terminals

XC5A Double-row Plugs, DIN B-type (Standard)

■ Dimensions

XC5A-□□22
(With right-angle through-hole terminals)



No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
20	37.9	32.1	22.86	33.02	28.1	29.3	3, 8
32	53.2	47.4	38.10	48.26	43.3	44.6	5, 12
44	68.4	62.6	53.34	63.50	58.5	59.8	4, 9, 14, 19
50	76.0	70.2	60.96	71.12	66.2	67.4	5, 10, 16, 21
64	93.8	88.0	78.74	88.90	83.9	85.2	6, 13, 20, 27
100	139.5	133.7	124.46	134.62	129.7	130.9	10, 20, 31, 41

■ Ordering Information

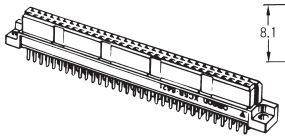
No. of contacts	Terminal type	Model
20*	Right-angle through-hole terminals	**XC5A-2022**
32		**XC5A-3222**
44*		**XC5A-4422**
50*		**XC5A-5022**
64		**XC5A-6422**
100*		**XC5A-0122**

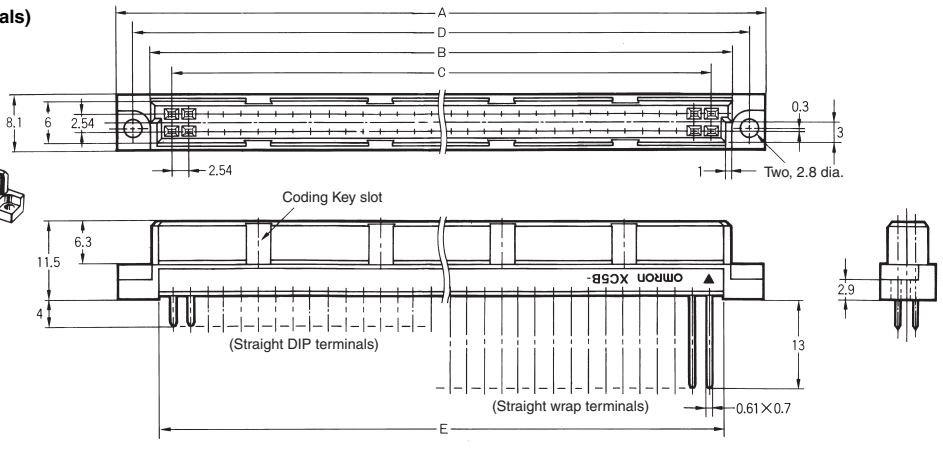
*Marked items have an increased number of contacts while following DIN standards.

XC5B Double-row Sockets, DIN B-type (Standard)

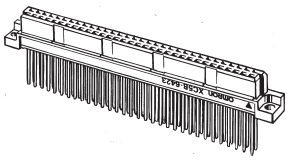
■ Dimensions

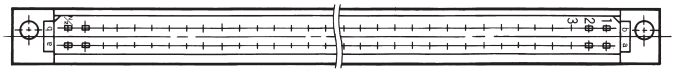
XC5B-□□21
(With straight through-hole terminals)

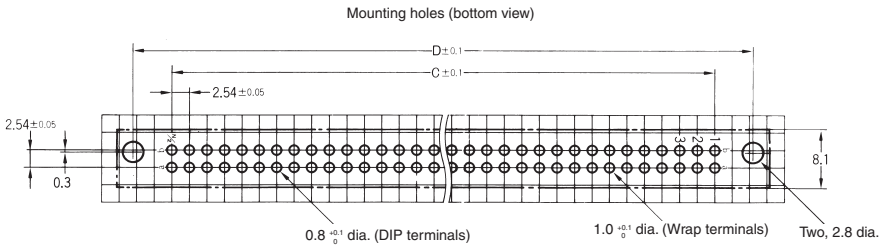




XC5B-□□23
(With straight wrap terminals)







No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
20	38.9	29.1	22.86	34.12	27.1	3, 8
32	54.2	44.4	38.10	49.36	42.3	5, 12
44	69.4	59.6	53.34	64.60	57.5	4, 9, 14, 19
50	77.0	67.2	60.96	72.22	65.2	5, 10, 16, 21
64	94.8	85.0	78.74	90.00	82.9	6, 13, 20, 27
100	140.5	130.7	124.46	135.72	128.7	10, 20, 31, 41

■ Ordering Information

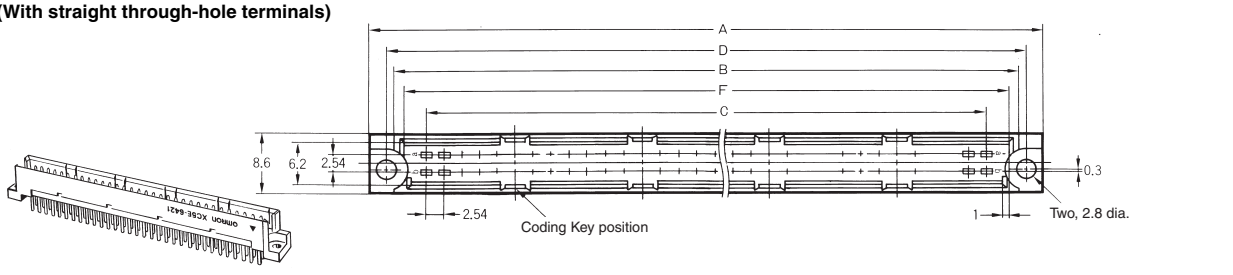
No. of contacts	Terminal type	
	Straight Through-hole terminals	Straight wrap terminals
20*	**XC5B-2021**	**XC5B-2023**
32	**XC5B-3221**	**XC5B-3223**
44*	**XC5B-4421**	**XC5B-4423**
50*	**XC5B-5021**	**XC5B-5023**
64	**XC5B-6421**	**XC5B-6423**
100*	**XC5B-0121**	**XC5B-0123**

*Marked items have an increased number of contacts while following DIN standards.

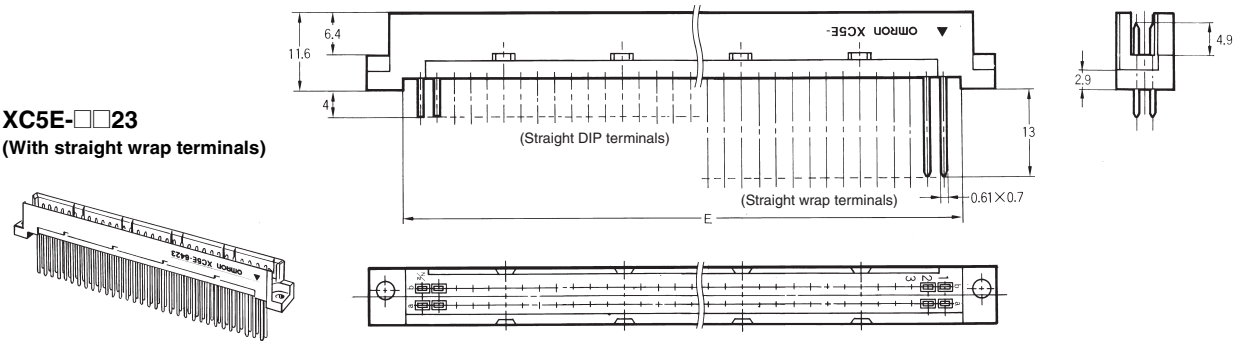
XC5E Double-row Plugs, DIN Q-type (Reverse)

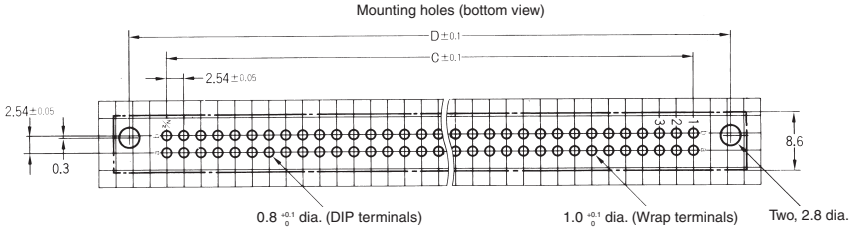
■ Dimensions

XC5E-□□21
(With straight through-hole terminals)



XC5E-□□23
(With straight wrap terminals)





No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
20	38.9	32.1	22.86	34.12	28.1	29.3	3, 8
32	54.2	47.4	38.10	49.36	43.3	44.6	5, 12
44	69.4	62.6	53.34	64.60	58.5	59.8	4, 9, 14, 19
50	77.0	70.2	60.96	72.22	66.2	67.4	5, 10, 16, 21
64	94.8	88.0	78.74	90.00	83.9	85.2	6, 13, 20, 27
100	140.5	133.7	124.46	135.72	129.7	130.9	10, 20, 31, 41

■ Ordering Information

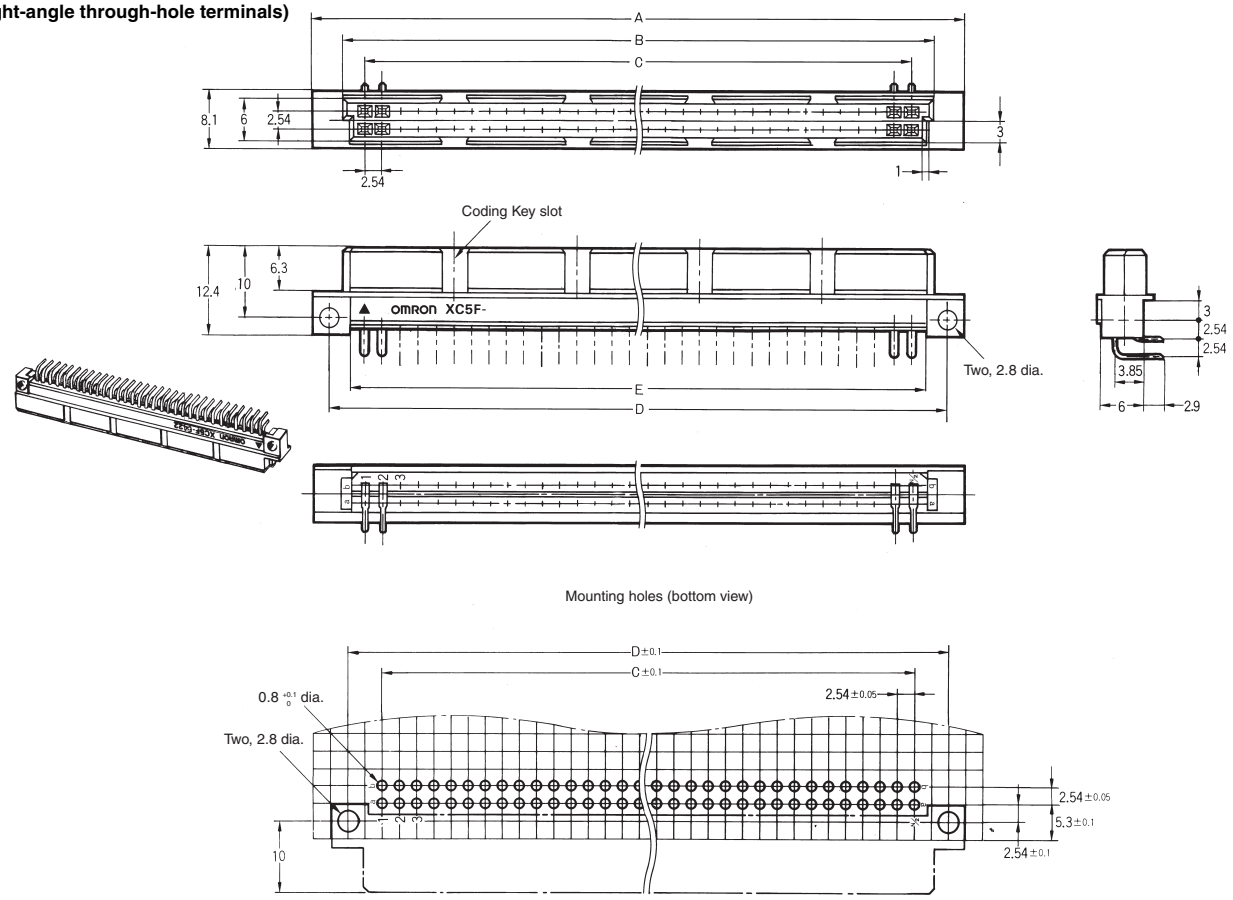
No. of contacts	Terminal type	
	Straight through-hole terminals	Straight wrap terminals
20*	**XC5E-2021**	**XC5E-2023**
32	**XC5E-3221**	**XC5E-3223**
44*	**XC5E-4421**	**XC5E-4423**
50*	**XC5E-5021**	**XC5E-5023**
64	**XC5E-6421**	**XC5E-6423**
100*	**XC5E-0121**	**XC5E-0123**

*Marked items have an increased number of contacts while following DIN standards.

XC5F Double-row Sockets, DIN Q-type (Reverse)

■ Dimensions

XC5F-□□22
(With right-angle through-hole terminals)



No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
20	37.9	29.1	22.86	33.02	27.1	3, 8
32	53.2	44.4	38.10	48.26	42.3	5, 12
44	68.4	59.6	53.34	63.50	57.5	4, 9, 14, 19
50	76.0	67.2	60.96	71.12	65.2	5, 10, 16, 21
64	93.8	85.0	78.74	88.90	82.9	6, 13, 20, 27
100	139.5	130.7	124.46	134.62	128.7	10, 20, 31, 41

■ Ordering Information

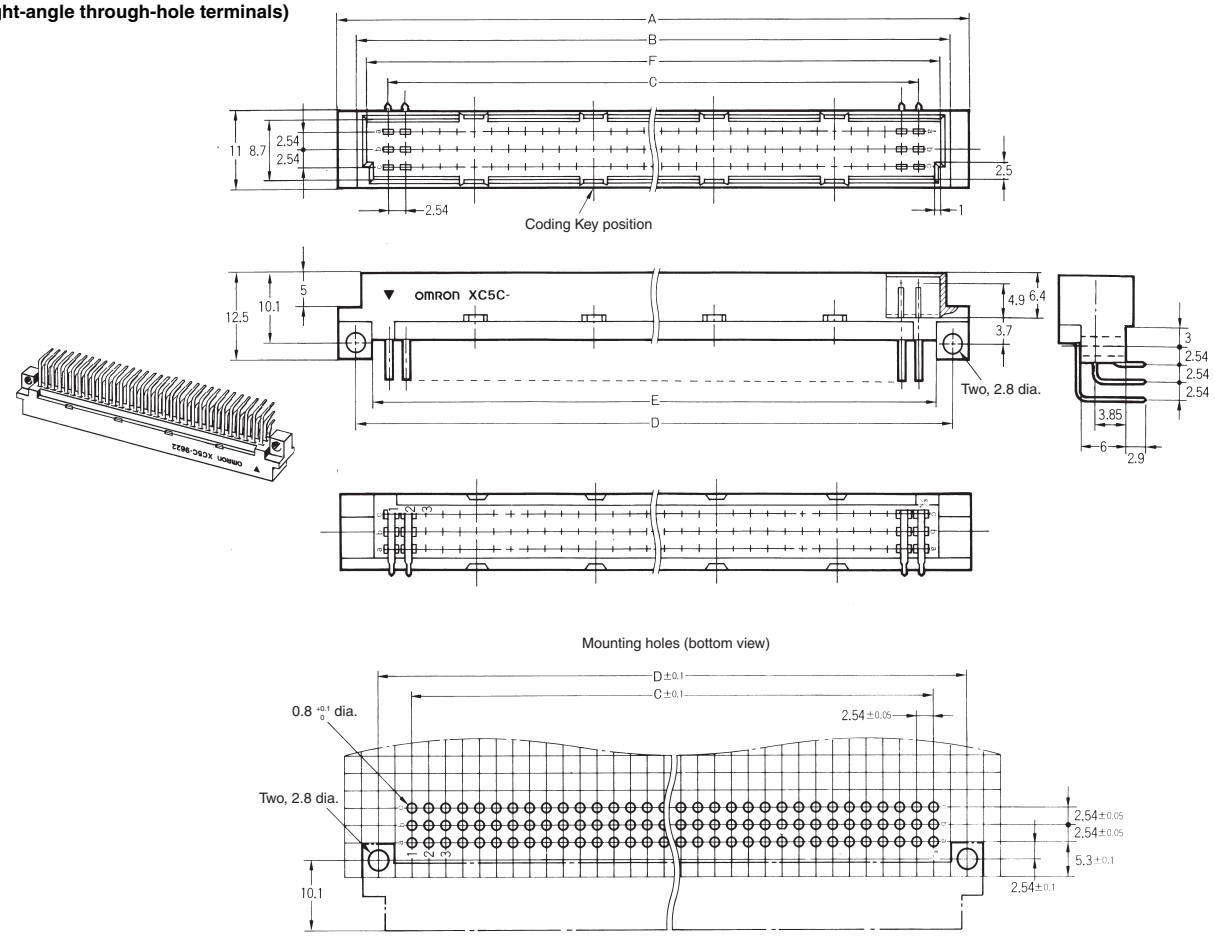
No. of contacts	Terminal type	Model
20*	Right-angle through-hole terminals	**XC5F-2022**
32		**XC5F-3222**
44*		**XC5F-4422**
50*		**XC5F-5022**
64		**XC5F-6422**
100*		**XC5F-0122**

*Marked items have an increased number of contacts while following DIN standards.

XC5C Triple-row Plugs, DIN C-type (Standard)

■ Dimensions

XC5C-□□22
(With right-angle through-hole terminals)



No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
32*	53.2	47.4	38.10	48.26	43.3	44.6	5, 12
48	53.2	47.4	38.10	48.26	43.3	44.6	5, 12
64*	93.8	88.0	78.74	88.90	83.9	85.2	6, 13, 20, 27
96	93.8	88.0	78.74	88.90	83.9	85.2	6, 13, 20, 27

*Has no center row (row b).

■ Ordering Information

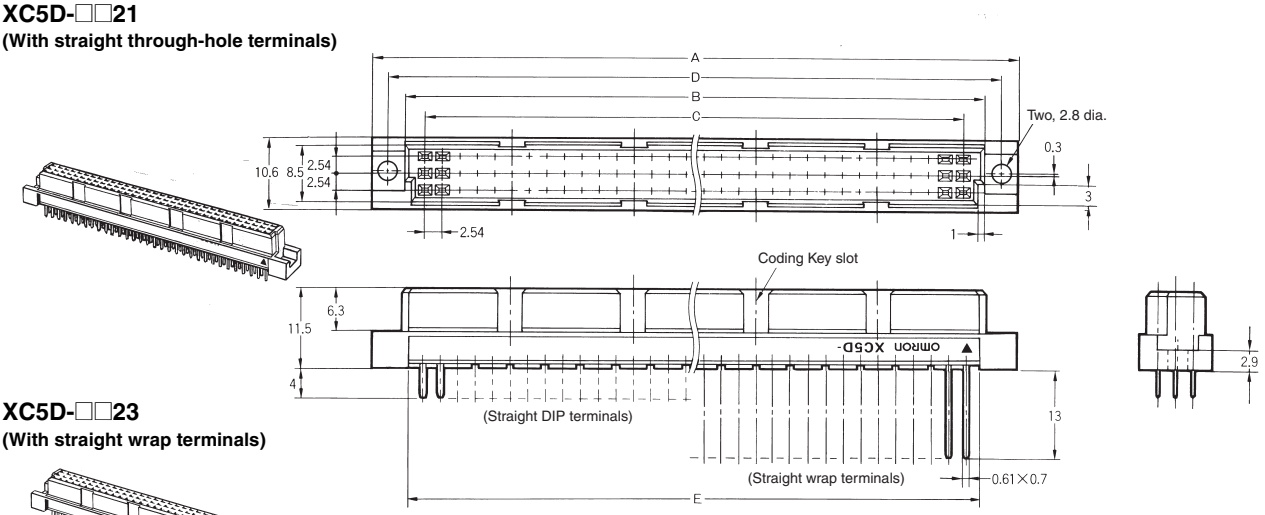
No. of contacts	Terminal type	Model
32*	Right-angle through-hole terminals	**XC5C-3222**
48		**XC5C-4822**
64*		**XC5C-6422**
96		**XC5C-9622**

*Has no center row (row b).

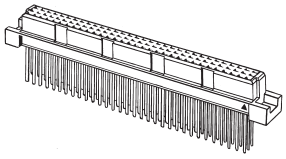
XC5D Triple-row Sockets, DIN C-type (Standard)

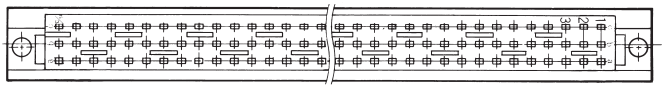
■ Dimensions

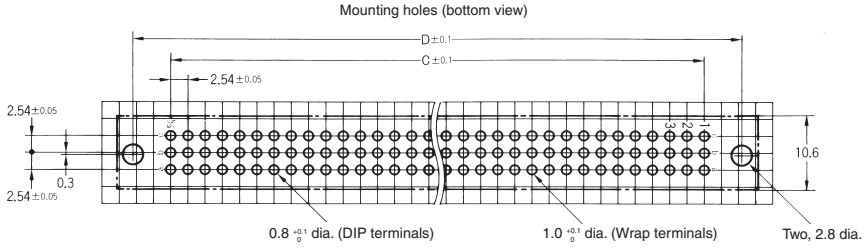
XC5D-□□21
(With straight through-hole terminals)



XC5D-□□23
(With straight wrap terminals)







No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
32*	54.2	44.4	38.10	49.36	42.3	5, 12
48	54.2	44.4	38.10	49.36	42.3	5, 12
64*	94.8	85.0	78.74	90.00	82.9	6, 13, 20, 27
96	94.8	85.0	78.74	90.00	82.9	6, 13, 20, 27

*Has no center row (row b).

■ Ordering Information

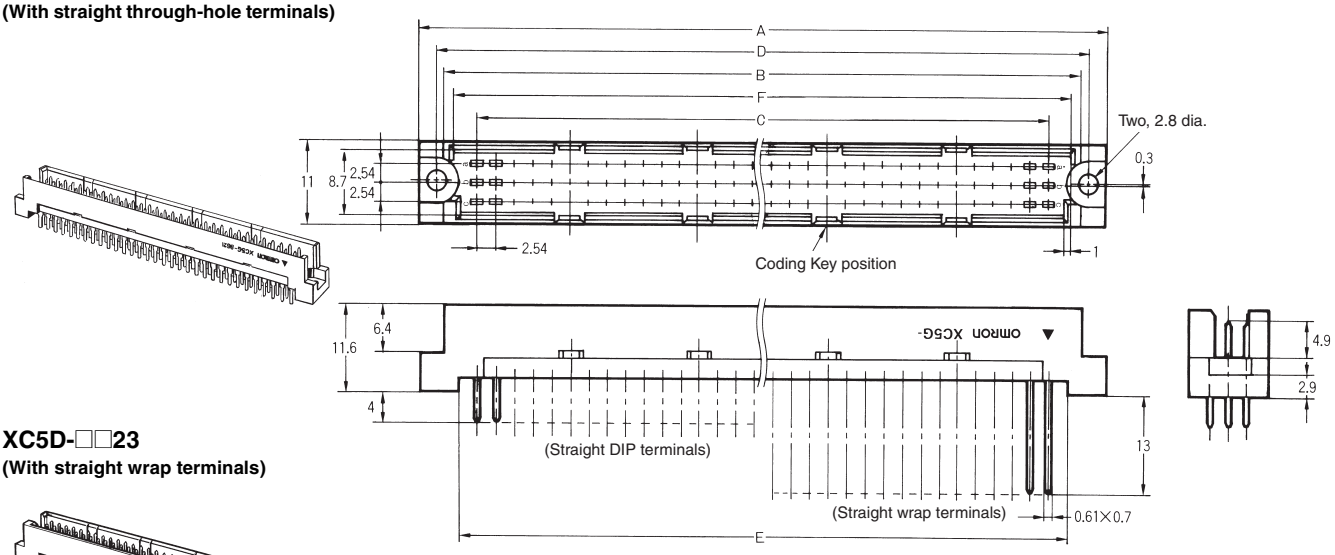
No. of contacts	Terminal type	
	Straight through-hole terminals	Straight wrap terminals
32*	**XC5D-3221**	---
48	**XC5D-4821**	**XC5D-4823**
64*	**XC5D-6421**	**XC5D-6423**
96	**XC5D-9621**	**XC5D-9623**

*Has no center row (row b).

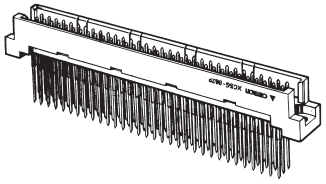
XC5G Triple-row Plugs, DIN R-type (Reverse)

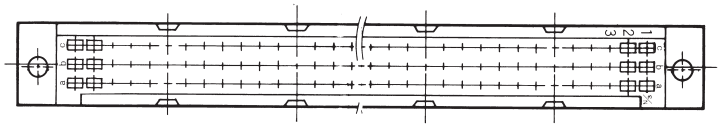
■ Dimensions

XC5G-□□21
(With straight through-hole terminals)

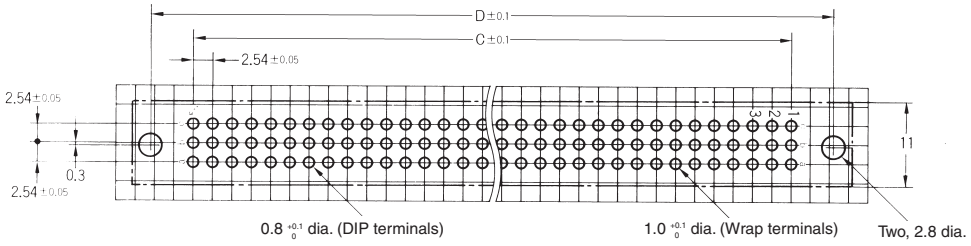


XC5D-□□23
(With straight wrap terminals)





Mounting holes (bottom view)



No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
48	54.2	47.4	38.10	49.36	43.3	44.6	5, 12
64*	94.8	88.0	78.74	90.00	83.9	85.2	6, 13, 20, 27
96	94.8	88.0	78.74	90.00	83.9	85.2	6, 13, 20, 27

*Has no center row (row b).

■ Ordering Information

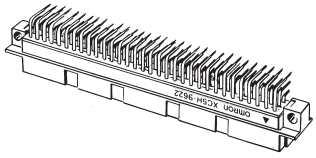
No. of contacts	Terminal type	
	Straight through-hole terminals	Straight wrap terminals
48	**XC5G-4821**	**XC5G-4823**
64*	**XC5G-6421**	**XC5G-6423**
96	**XC5G-9621**	**XC5G-9623**

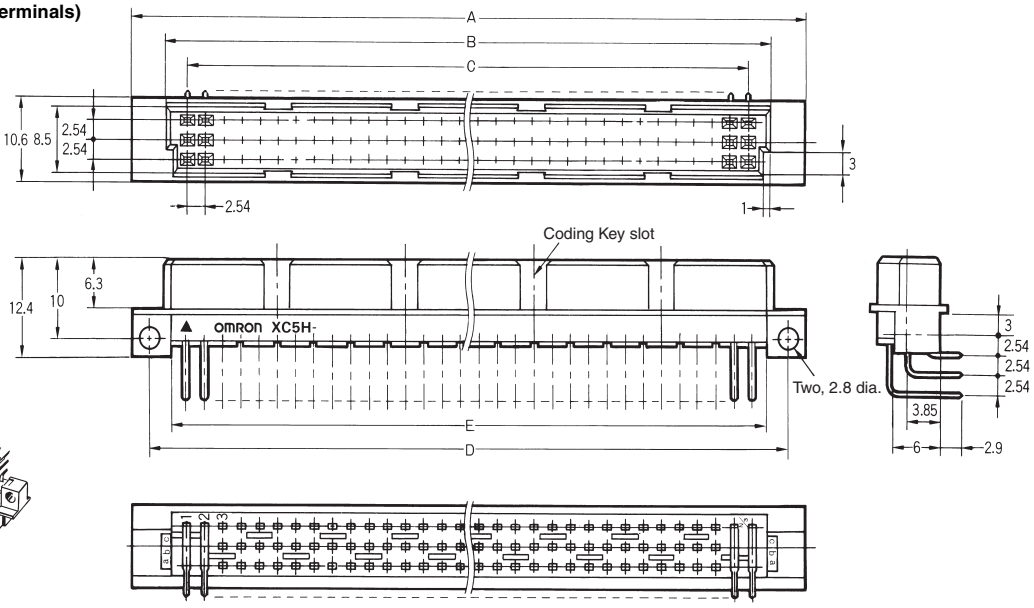
*Has no center row (row b).

XC5H Triple-row Sockets, DIN R-type (Reverse)

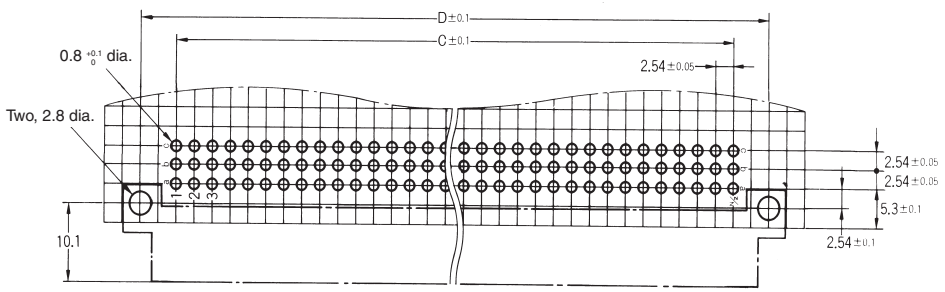
■ Dimensions

XC5H-□□22
(With right-angle through-hole terminals)





Mounting holes (bottom view)



No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
48	53.2	44.4	38.10	48.26	42.3	5, 12
64*	93.8	85.0	78.74	88.90	82.9	6, 13, 20, 27
96	93.8	85.0	78.74	88.90	82.9	6, 13, 20, 27

*Has no center row (row b).

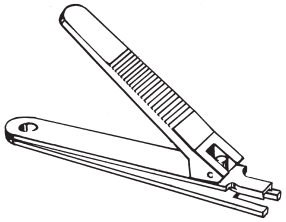
■ Ordering Information

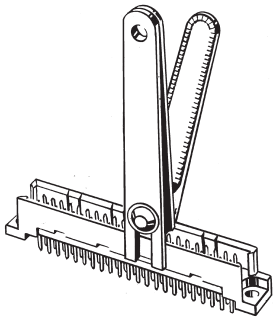
No. of contacts	Terminal type	Model
48	Right-angle through-hole terminals	**XC5H-4822**
64*		**XC5H-6422**
96		**XC5H-9622**

*Has no center row (row b).

Tools and Accessories (Sold Separately)

Coding Cutter
XY2D-0001



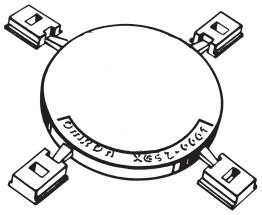


Cut the Coding Key on the Plug and insert the Coding Key in the Coding Key slots on the Socket to prevent improper insertion of the Plug into the Socket.

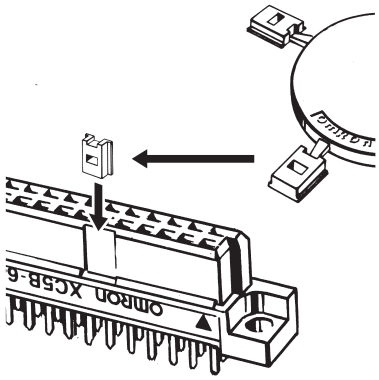
1. Cut the Coding Key(s) in the slot in the plug housing wall with the special cutting tool (XY2D-0001).

Note: Coding Cutters may not work with some DIN-style connector combinations. In that case, contact your OMRON representative.

Coding Key
XC5Z-0001



Material: PBT resin (UL94HB)/white



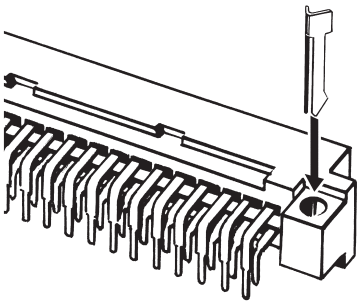
2. Insert the special Coding Key (XC5Z-0001) into the Coding Key slots in the housing wall of the corresponding Socket.

Note: 1. Each XC5Z-0001 has four Coding Keys.

2. Coding Keys may not work with some DIN-style connector combinations. In that case, contact your OMRON representative.

Temporary Fastening Pins
XC5Z-0002

(For use with 1.6-mm boards)



Fastening pins (XC5Z-0002) are used to keep the connector flush against the board during automated soldering.

Note: 1. For the XC5A, XC5F, XC5C, and XC5H.

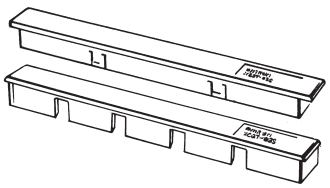
2. Temporary fastening pins cannot be used with DIN-style connectors.

Dust Cover
XC5T-962

(For DIN41612 C- or R-type Triple-row Plugs with 64 or 96 contacts)

XC5T-963

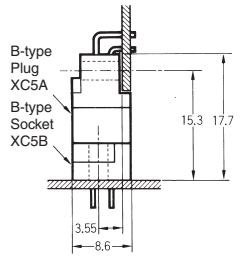
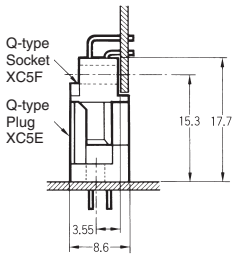
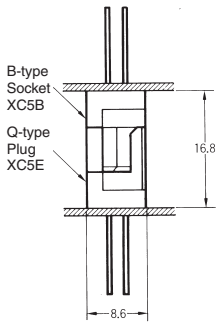
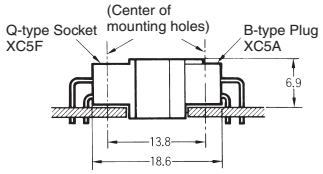
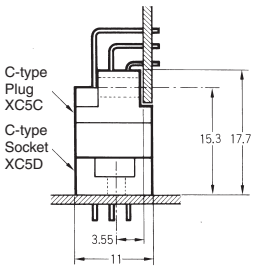
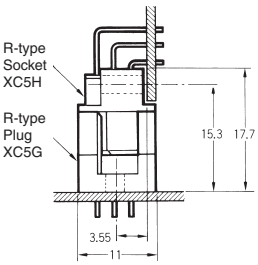
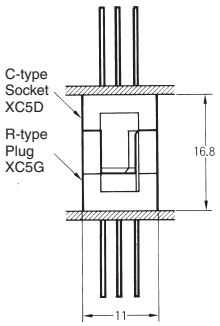
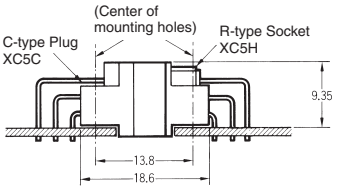
(For DIN41612 C- or R-type Triple-row Sockets with 64 or 96 contacts)



Material: Polyamide resin (UL94V-2)/white

This cover is for protection against dust only, and should not be used for flux protection during automated soldering.

Mating Diagrams

	Vertical (Standard)	Vertical (Reverse)	Stacking (See note.)	Horizontal (See note.)
Double-row Connectors				
Triple-row Connectors				

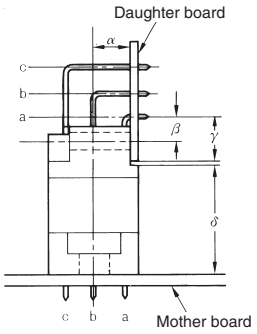
Note: By combining a Standard and a Reverse Connector, stacking and horizontal connections can be made. In this case, the triangular marks (terminal number 1) on the Plug and the Socket will not match.

Precautions

■ Correct Use

Basic Mating Dimensions

Mating dimensions for all Connectors should be as shown in the following diagram.



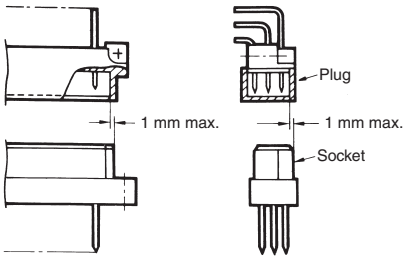
α: 3.55 mm
The distance between the center line of the mounting holes on the mother board and the daughter board. (This center line is shifted 0.3 mm toward row a from row b.)

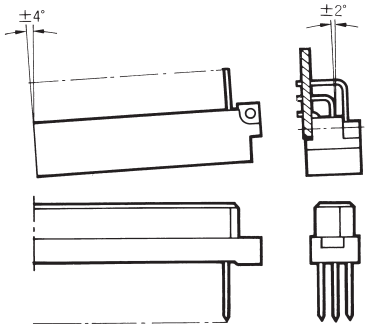
β: 2.54 mm
The distance between the mounting holes on the daughter board and row a.

γ: 5.3 mm
The distance between the edge of the daughter board and row a.

δ: 12.4 to 14.2 mm
To ensure reliability, be sure to keep the Connectors within these dimensions when mounting.

The allowable margins for mating the Connectors are shown below.





Applicable Wrap Post Wire Sizes

AWG30, AWG28, AWG26, or AWG24
(Solid wire: 0.25 to 0.51 mm dia.)

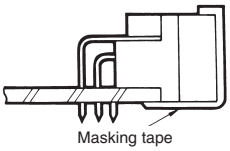
Wrap Post Length

3 wires

Soldering

Automated Soldering

Use masking tape to mask Right-angle Connectors before automated soldering.

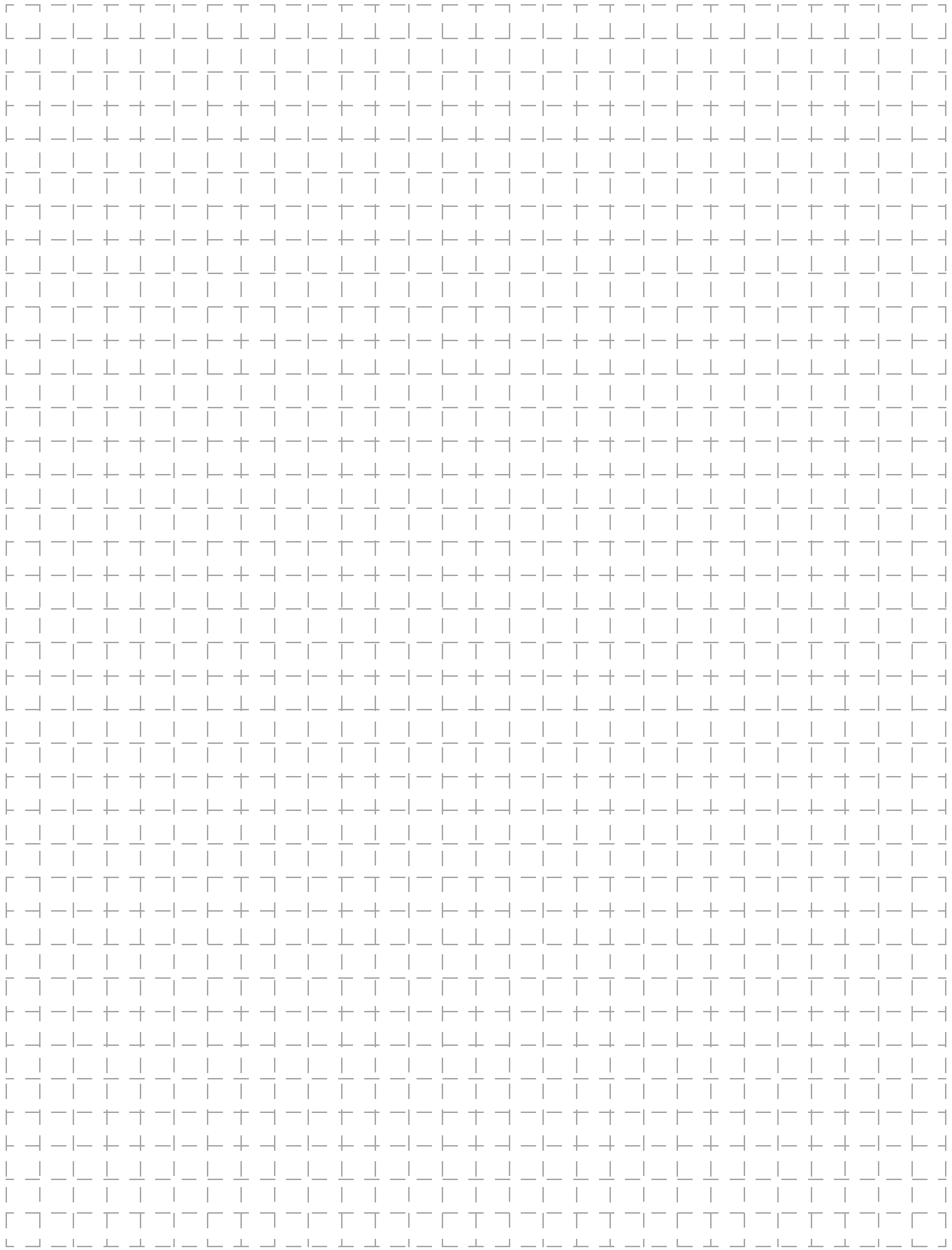


(Recommended tape: 3M Sumitomo #214)

Automated Soldering Conditions (Jet Flow)

1. Soldering temperature: 250±5°C
2. Continuous soldering time: Within 5 s

MEMO



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