XM3K-N/XM3L-N

D-sub SMT Connectors

SMT D-sub Connectors available with 9 or 25 contacts

- **These SMT Connectors can be mounted on the back surfaces of circuit boards.**
- **Circuit board positioning bosses provide for accurate mounting on circuit boards.**
- **Compatible with reflow mounting.**

Terminology

- **SMT**

An abbreviation for surface-mount technology.

Ratings / Characteristics

Rated current	3 A
Rated voltage	300 VAC
Contact resistance	25 mΩ max. (at 20 mVDC, 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.)
Insertion durability	200 times
Ambient operating temperature	- 55 to 105°C (with no condensation or icing)

Materials and Finish

Housing		LCP (UL94 V-0)/black
Contacts	**Mating end**	Copper alloy/gold plating
	Terminals	Copper alloy/tin plating
Shell		Steel/nickel plating
Anchors		Steel/nickel plating
Hold-down		Zinc alloy/tin plating

Connectors

Plug

Appearance				
Accessories	No anchors Mounting holes M3	No anchors Mounting holes #4-40 UNC	With anchors M3	With anchors #4-40 UNC
Model	**XM3K-□□12-02N**	**XM3K-□□12-03N**	**XM3K-□□12-12N**	**XM3K-□□12-13N**

Socket

Appearance				
Accessories	No anchors Mounting holes M3	No anchors Mounting holes #4-40 UNC	With anchors M3	With anchors #4-40 UNC
Model	**XM3L-□□12-02N**	**XM3L-□□12-03N**	**XM3L-□□12-12N**	**XM3L-□□12-13N**

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Part Number Structure

XM3□-□□□□-□□N
(1) (2) (3) (4) (5)

(1) Type
K: plug
L: socket

(2) Number of contacts
09: 9 pins
25: 25 pins

(3) Plating Specification
1: Gold plating

(4) Terminal Shape
2: Right-angle, SMT Pins

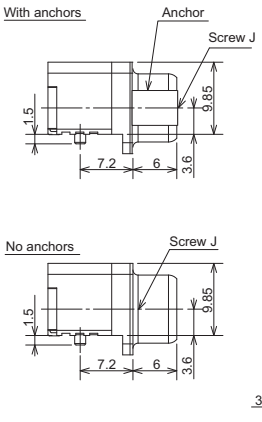
(5) Anchor Specification
02: No anchors (Mounting holes M3)
03: No anchors (Mounting holes #4-40 UNC)
12: With anchors (Anchor screw M3)
13: With anchors (Anchor screw #4-40 UNC)

XM3K-N D-sub Connector Plugs

Dimensions

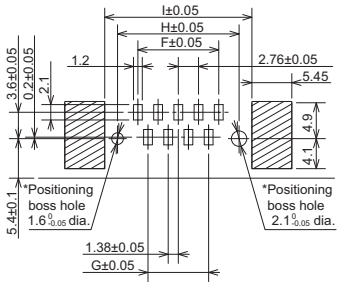
(Unit: mm)

XM3K-□□12-02N
(No anchors Mounting holes M3)
XM3K-□□12-03N
(No anchors Mounting holes #4-40 UNC)
XM3K-□□12-12N
(With anchors M3)
XM3K-□□12-13N
(With anchors #4-40 UNC)



CAD Data

Mounting Holes



(Tolerance: ±0.05)
Note: The overall pattern pitch tolerance for the board is ±0.05. Do not accumulate error.
* The 1.6 and 2.1 diameter holes are for the positioning bosses. Use metal masks to prevent solder from entering these holes.

Table of Dimensions

Model	Number of contacts	A	B	C	D	E	F	G	H	I	J	Anchors
XM3K-0912-02N	09	31.0	16.91	24.99	10.96	8.22	11.04	8.28	16.6	20.1	M3	NO
XM3K-0912-03N											#4-40 UNC	NO
XM3K-0912-12N											M3	YES
XM3K-0912-13N											#4-40 UNC	YES
XM3K-2512-02N	25	53.29	38.96	47.04	33.12	30.36	33.12	30.36	38.64	42.1	M3	NO
XM3K-2512-03N											#4-40 UNC	NO
XM3K-2512-12N											M3	YES
XM3K-2512-13N											#4-40 UNC	YES

Ordering Information

No. of contacts	Accessories	No anchors Mounting holes M3	No anchors Mounting holes #4-40 UNC	With anchors M3	With anchors #4-40 UNC	Minimum packaging unit (pcs)
9		XM3K-0912-02N	XM3K-0912-03N	XM3K-0912-12N	XM3K-0912-13N	160
25		XM3K-2512-02N	XM3K-2512-03N	XM3K-2512-12N	XM3K-2512-13N	160

Note: Order in multiples of minimum packing unit.

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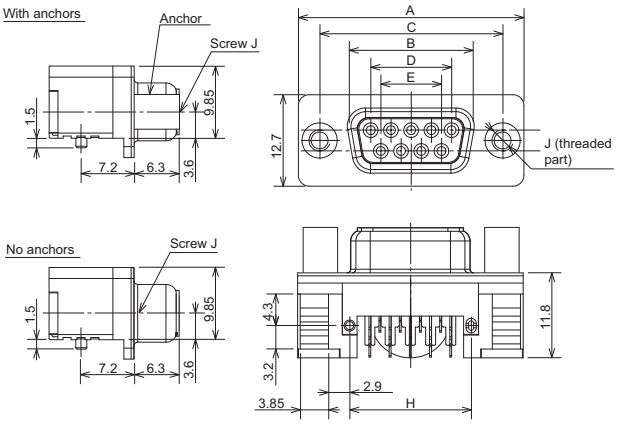
XM3L-N D-sub Connector Sockets

Dimensions

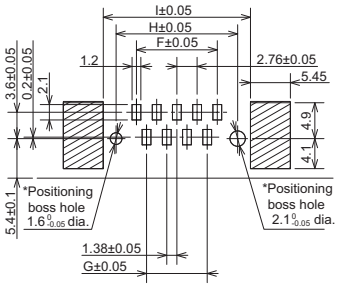
(Unit: mm)

XM3L-□□12-02N
(No anchors Mounting holes M3)
XM3L-□□12-03N
(No anchors Mounting holes #4-40 UNC)
XM3L-□□12-12N
(With anchors M3)
XM3L-□□12-13N
(With anchors #4-40 UNC)



CAD Data

Mounting Holes



(Tolerance: ±0.05)
Note: The overall pattern pitch tolerance for the board is ±0.05.
Do not accumulate error.
* The 1.6 and 2.1 diameter holes are for the positioning bosses.
Use metal masks to prevent solder from entering these holes.

Table of Dimensions

Model	Number of contacts	A	B	C	D	E	F	G	H	I	J	Anchors
XM3L-0912-02N	09	31.0	16.33	24.99	10.96	8.22	11.04	8.28	16.60	20.1	M3	NO
XM3L-0912-03N											#4-40 UNC	NO
XM3L-0912-12N											M3	YES
XM3L-0912-13N											#4-40 UNC	YES
XM3L-2512-02N	25	53.29	38.38	47.04	33.12	30.38	33.12	30.36	38.64	42.1	M3	NO
XM3L-2512-03N											#4-40 UNC	NO
XM3L-2512-12N											M3	YES
XM3L-2512-13N											#4-40 UNC	YES

Ordering Information

No. of contacts	Accessories	No anchors Mounting holes M3	No anchors Mounting holes #4-40 UNC	With anchors M3	With anchors #4-40 UNC	Minimum packaging unit (pcs)
9		XM3L-0912-02N	XM3L-0912-03N	XM3L-0912-12N	XM3L-0912-13N	160
25		XM3L-2512-02N	XM3L-2512-03N	XM3L-2512-12N	XM3L-2512-13N	160

Note: Order in multiples of minimum packing unit.

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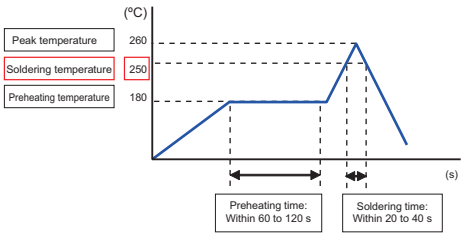
Precautions

Precautions for Correct Use

● Soldering Conditions

• Recommended Reflow Conditions
Maximum temperature: 260°C
Time: Within 20 to 40 s



These conditions, however, depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials. You must check and select the actual conditions.

● Metal Mask Thickness for Cream Solder Printing

We recommend a metal mask thickness of 0.15 to 0.18 mm for cream solder printing. These conditions, however, depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials. You must check and select the actual conditions.

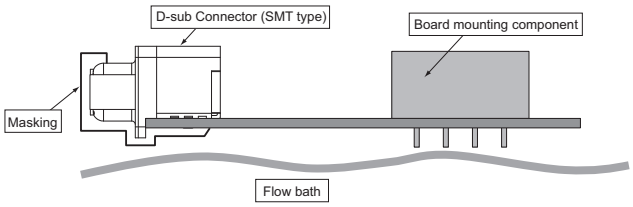
● Pin Deformation

The pins will deform if you subject them to an excessive load. Deformed pins will reduce solderability when the Connectors are mounted. Do not drop the Connectors or handle them roughly. Do not connect or disconnect Connectors that are not mounted to a circuit board. Doing so may deform the pins.

● Soldering in an Automatic Solder Bath after Reflow Soldering

In order to prevent a flux oozing, mask the positioning boss hole on the board with a tape, and then perform automated soldering. Since the Connectors are mounted on the end surface of the board, they will touch the soldered surface of the flow bath as shown in the figure. Therefore, if you are using a flow bath, it is necessary to take heat resistance measures as well as measures against flux oozing.

Mask the mating portion with tape before you perform automatic soldering to prevent flux or solder from entering the mating portion of the Connector. Select and use a suitable masking tape.



● Application Precautions

• Confirm that there is no excessive misalignment or inclination in the mating contact portion between the plug and socket before mating the Connector. Make sure that the Connector is mated all the way to the back. If the Connector is not mated all the way to the back, contact reliability may be lost.
• Do not apply an extreme load during Connector insertion or removal. The Connector may be damaged, and contact failure may result. Twist the plug and socket as little as possible when mating the Connector. Not doing so may deform the terminals or housing or crack the housing.
• Do not insert a foreign object, such as tweezers, into the Connector mating contact portion. Doing so may cause the plating to peel off or deform the terminals.
• Do not connect the Connectors in the wrong direction. Doing so may damage the Connectors.

● Board Mounting Precautions

Be careful of board warping. Warping that is too severe may cause faulty soldering.

● Storage

(1) Do not store the Connectors in locations subject to dust or high humidity.
(2) Do not store the Connectors in locations close to sources of gasses such ammonia gas or sulfide gas.

Approval Standard

The approval rating values for overseas standards are different from the performance values determined individually. Confirm the values before use.

Model	Standard	File No.	Rating
XM3K-□□12-02N	UL/C-UL certified product (Recognized)	E103202	---
XM3K-□□12-03N	UL/C-UL certified product (Recognized)	E103202	---
XM3K-□□12-12N	UL/C-UL certified product (Recognized)	E103202	---
XM3K-□□12-13N	UL/C-UL certified product (Recognized)	E103202	---
XM3L-□□12-02N	UL/C-UL certified product (Recognized)	E103202	---
XM3L-□□12-03N	UL/C-UL certified product (Recognized)	E103202	---
XM3L-□□12-12N	UL/C-UL certified product (Recognized)	E103202	---
XM3L-□□12-13N	UL/C-UL certified product (Recognized)	E103202	---

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