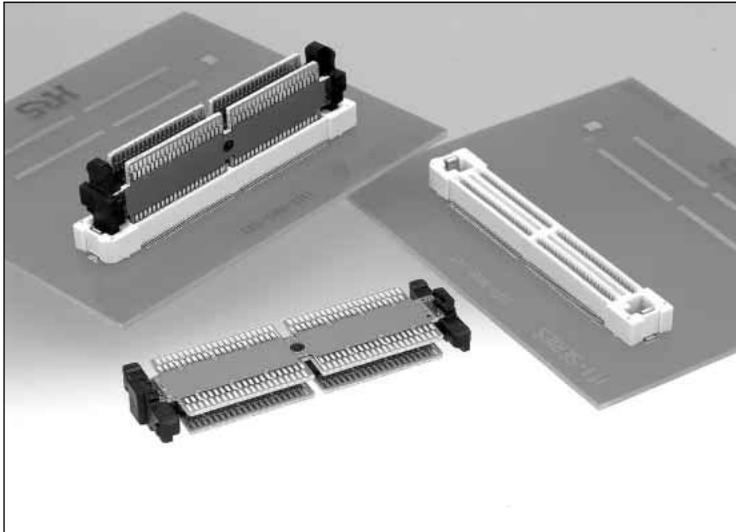


High Speed, Matched-Impedance, Parallel Board-to-board Connector

IT1 Series



IT1 Series Outline

High-speed matched-impedance parallel board-to-board connector designed for applications requiring board-to-board spacing with transmission speeds exceeding 1GHz. The connection system has matched impedance of 50 ohm or can be customized. Contacts are on 0.5mm pitch.

■ Features

1. Impedance Matching using a 4-Layer Board

The innovative transmission module uses PC boards with a strip line design of transmission lines, providing matched impedance of 50 ohms, for standard product.

2. Supports Multiple Connectors per board

Designed with a tolerance of +/- 0.2mm for both the X and Y-axis. The three-piece structure and the +/- 0.2mm tolerance allows 3 or more IT1's to be mounted on a single board.

3. Customized Board-to-Board Distance

Board-to-board distance can be customized, from 16mm to 40mm.

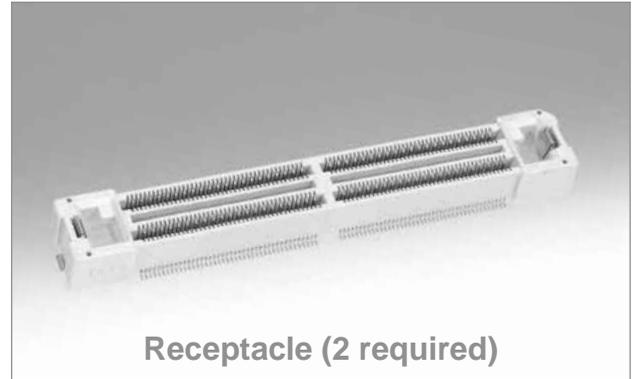
Ground lines or additional traces can be added to support high level, high speed transmission or mixed power/signal applications.

4. Signal to Ground Ratio

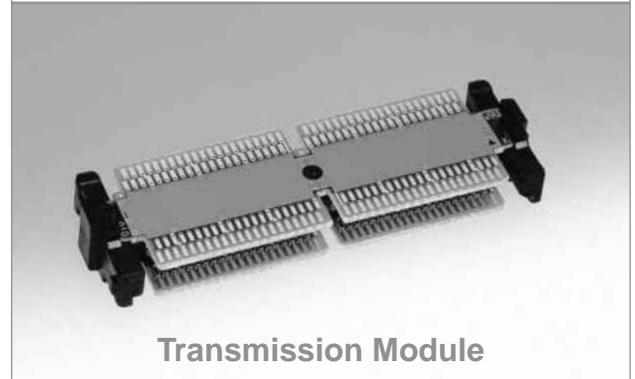
The standard signal-to-ground ratio is 10:2, which makes reliable matching of the characteristic impedance of each transmission line. This ratio also can be customized.

5. Contact Reliability

Use of double contact points on each of the contacts assures highly reliable performance.

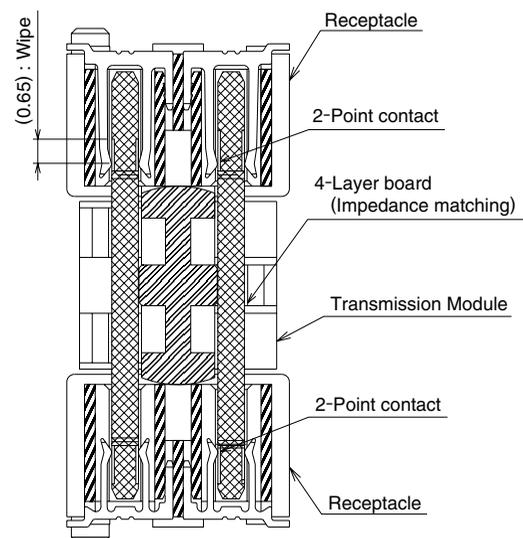


Receptacle (2 required)



Transmission Module

● Connection Cross-Sectional Diagram



■ Applications

Routers, servers, base stations and other telecommunication equipment.

Product Specifications

Rating	Current rating	0.4 A (Note 1)	Operation Temperature Range	-55°C to +85°C	Storage Temperature Range	-10°C to +60°C (Note 2)
	Voltage rating	50V AC	Operation Humidity Range	Relative humidity 95% max. (No condensation)	Storage Humidity Range	40% to 70% (Note 2)

Item	Specification	Conditions
1. Insulation resistance	100 M ohms min.	Measured at 100V DC
2. Withstanding voltage	No flashover or insulation breakdown	150 V AC/one minute
3. Contact resistance	100 m ohms max.	Measured at 100 mA
4. Vibration	No electrical discontinuity of 1 μ s or more. No damage, cracks, or parts dislocation.	Frequency of 10 to 55 Hz, 0.75mm single amplitude, for 10 cycles in each of 3 directions
5. Shock	No electrical discontinuity of 1 μ s. min. No damage, cracks, or parts dislocation	Acceleration of 490 m/s ² , 11 ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis.
6. Humidity	Contact resistance: 110 m ohms max. Insulation resistance: 100 M ohms min. No damage, cracks, or parts dislocation	96 hours/40°C/ humidity of 90% to 95%
7. Temperature cycle	Contact resistance: 110 m ohms max. Insulation resistance: 100 M ohms min. No damage, cracks, or parts dislocation	Temperature: -55°C → +15°C to +35°C → +85°C → +15°C to +35°C Duration: 30 → 2 to 3 → 30 → 2 to 3 (Minutes) 5 cycles
8. Durability (insertion/ withdrawal)	Contact resistance: 110 m ohms max. No damage, cracks, or parts dislocation.	20 cycles
9. Resistance to Soldering Heat	No deformation of components affecting performance.	Reflow: At the recommended temperature profile Manual soldering: 350°C for 3 seconds

Note1: If the connector is going to be used at a current in excess of the 0.4 A, please contact your Sales Representative.

Note2: The term "storage" refers to products 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.

Material

Receptacles

Part	Material	Finish	Remarks
Insulator	LCP	Color : Beige	UL94V-0
Contacts	Phosphor bronze	Gold plating	—
Metal fittings	Phosphor bronze	Tin plating	—

Transmission Module

Part	Material	Finish	Remarks
Insulator	PBT	Color : Black	UL94V-0
Board	FR-4	Contact portion : Gold plating	—

Ordering information

Receptacles

IT 1 # - * S - SV (* *)

① ② ③ ④ ⑤ ⑥

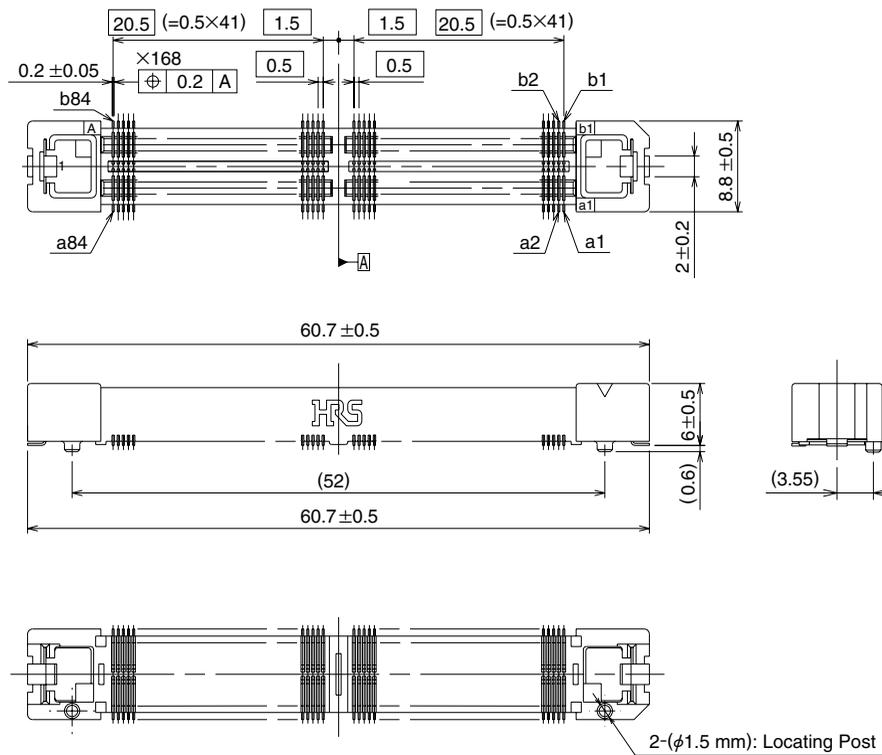
Transmission Module

IT 1 - * P / * - *H

① ③ ④ ⑦ ⑧

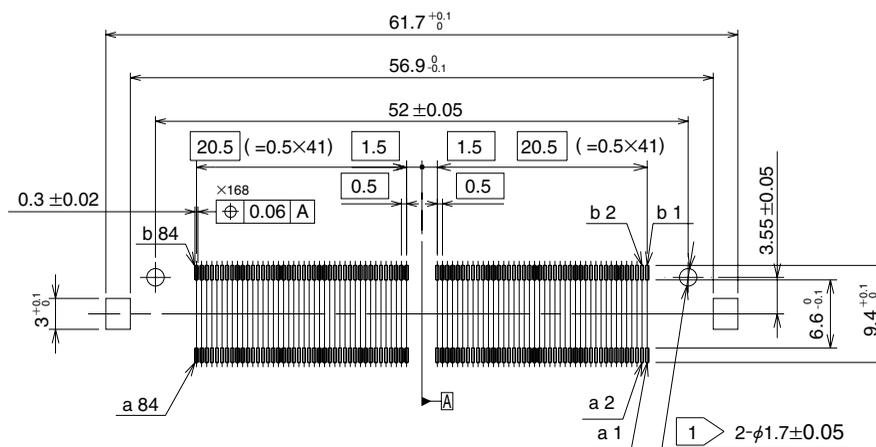
① Series name	: IT1	⑤ Lead	SV : Straight SMT
② Locating Post type Blank	: With Locating Post	⑥ Packaging	Blank : Tray (25) : Tray(connectors with attached tape for a vacuum board placement)
A	: Without Locating Post		
③ Number of contacts	: 168, 252	⑦ Number of ground contacts	: 28, 44
④ Connector	S : Receptacle Socket P : Transmission Plug Module	⑧ Board-to-board Distance:	19mm,23mm,30mm

Receptacles - 168 Contacts



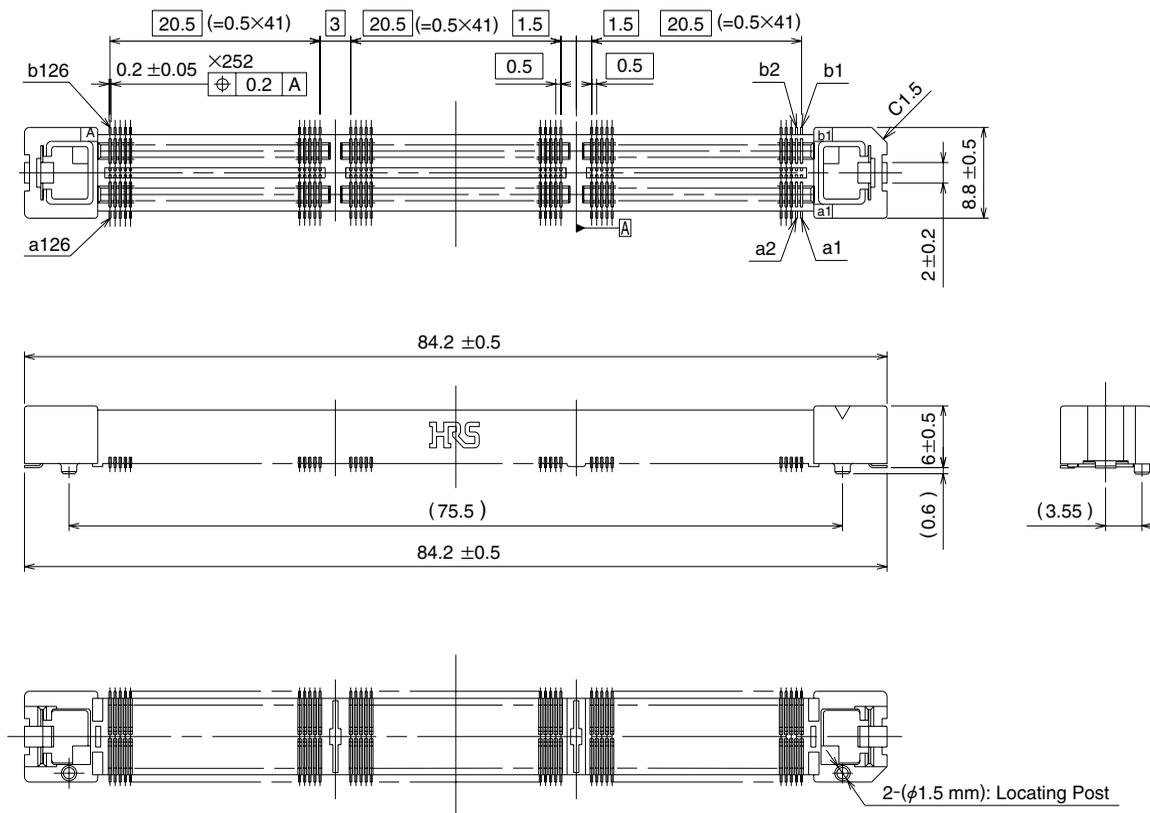
Part Number	CL No.	Locating Post Type	RoHS
IT1-168S-SV	641-0002-0	With Locating Post	YES
IT1A-168S-SV	641-0012-4	Without Locating Post	

Recommended PCB mounting pattern



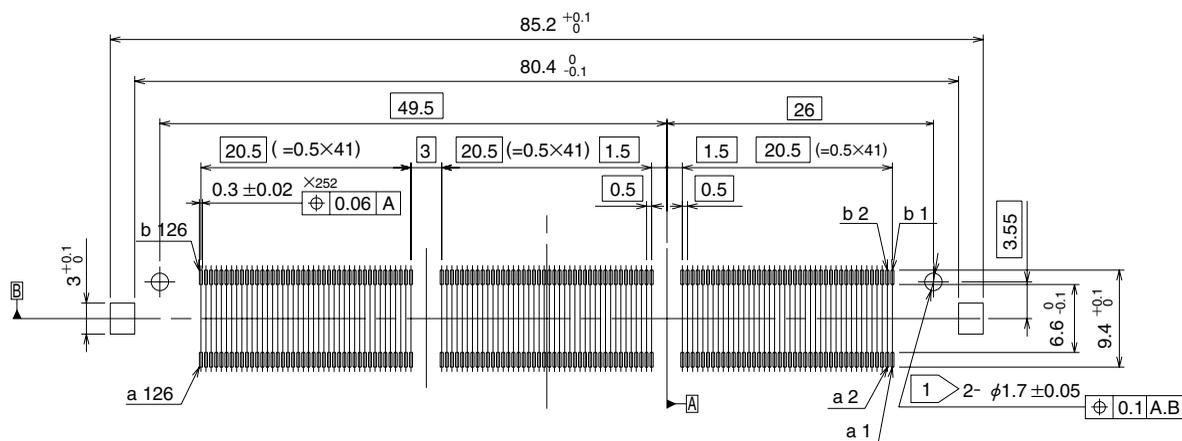
1 Not required for products without Locating Post.

Receptacles - 252 Contacts



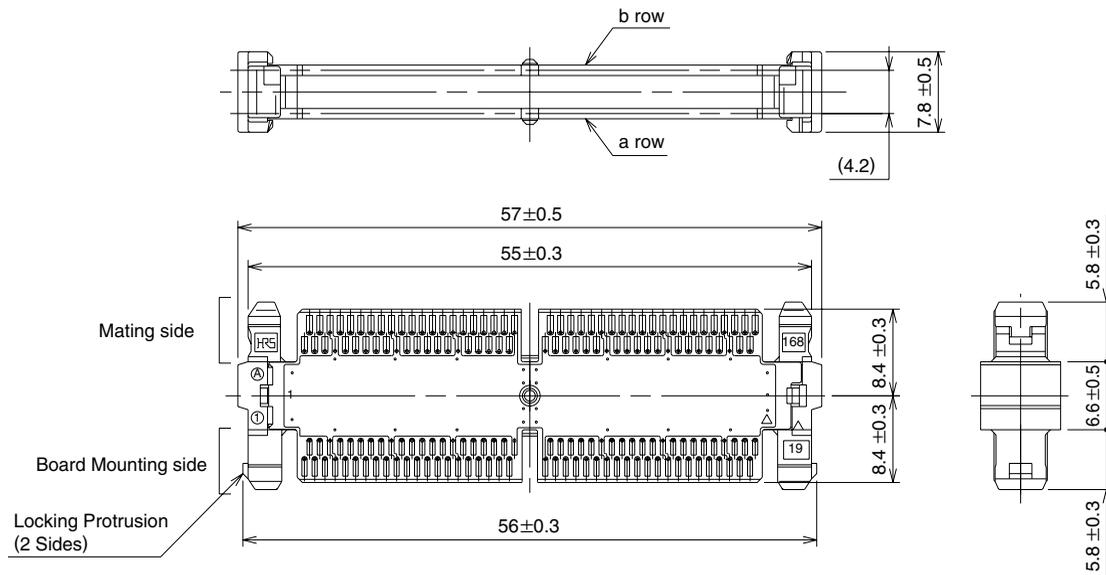
Part Number	CL No.	Locating Post Type	RoHS
IT1-252S-SV	641-0003-3	With Locating Post	YES
IT1A-252S-SV	641-0013-7	Without Locating Post	

Recommended PCB mounting pattern



1 Not required for products without locating Post.

Transmission Module - 168 Contacts



Part Number	CL No.	Board-to-board Distance	A	B	C	RoHS
IT1-168P/28-19H	641-0192-8	19mm	8.4	8.4	6.6	YES
IT1-168P/28-30H	641-0303-7	30mm	13.9	13.9	17.6	

Connection Table

The connection table indicates contact numbers in the mated condition, as illustrated in Fig. 1.

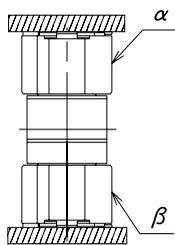


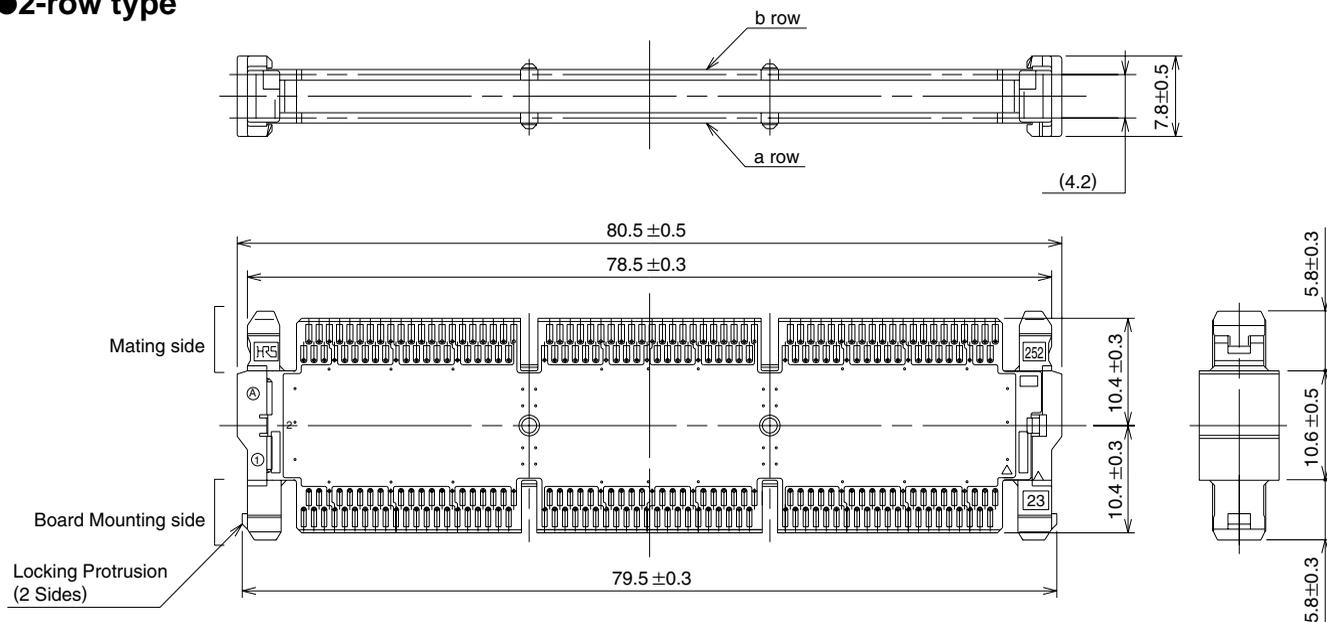
Fig. 1

		a row	
		$\alpha - \beta$	$\alpha - \beta$
Signal	a 1 - a84	Signal	a44 - a41
	a 2 - a83		
	a 3 - a82		
	a 4 - a81		
	a 5 - a80		a53 - a32
Ground	a 6 - a79	Ground	a54 - a31
	a 7 - a78		a55 - a30
Signal	a 8 - a77	Signal	a56 - a29
Ground	a17 - a68	Ground	a65 - a20
	a18 - a67		a66 - a19
Signal	a19 - a66	Signal	a67 - a18
	a20 - a65		a68 - a17
Ground	a29 - a56	Ground	a77 - a 8
	a30 - a55		a78 - a 7
Signal	a31 - a54	Signal	a79 - a 6
	a32 - a53		a80 - a 5
Ground		Ground	a81 - a 4
			a82 - a 3
Signal		Signal	a83 - a 2
			a84 - a 1
Ground	a41 - a44	Ground	
	a42 - a43		
Signal	a43 - a42	Signal	

		b row	
		$\alpha - \beta$	$\alpha - \beta$
Signal	b 1 - b84	Signal	b44 - b41
	b 2 - b83		
	b 3 - b82		
	b 4 - b81		
	b 5 - b80		b53 - b32
Ground	b 6 - b79	Ground	b54 - b31
	b 7 - b78		b55 - b30
Signal	b 8 - b77	Signal	b56 - b29
Ground	b17 - b68	Ground	b65 - b20
	b18 - b67		b66 - b19
Signal	b19 - b66	Signal	b67 - b18
	b20 - b65		b68 - b17
Ground		Ground	b77 - b 8
			b78 - b 7
Signal	b29 - b56	Signal	b79 - b 6
	b30 - b55		b80 - b 5
Ground	b31 - b54	Ground	b81 - b 4
	b32 - b53		b82 - b 3
Signal		Signal	b83 - b 2
			b84 - b 1
Ground	b41 - b44	Ground	
	b42 - b43		
Signal	b43 - b42	Signal	

Transmission Module - 252 Contacts

2-row type



Part Number	CL No.	Board-to-board Distance	A	B	C	RoHS
IT1-252P/44-23H	641-0231-8	23mm	10.4	10.4	10.6	YES
IT1-252P/44-30H	641-0304-0	30mm	13.9	13.9	17.6	

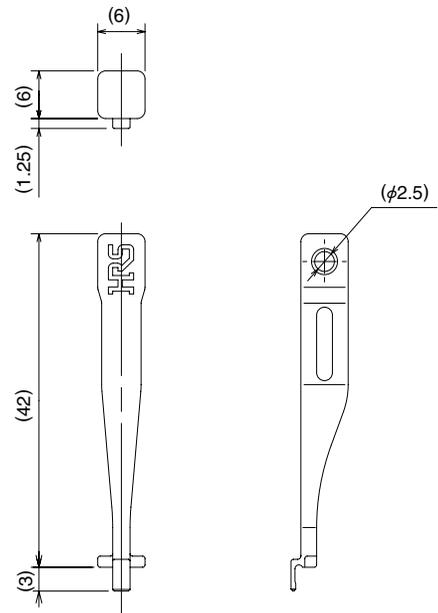
Connection Table

The connection table indicates contact numbers in the mated condition, as illustrated in Fig. 1.

a row				b row			
	α - β		α - β		α - β		α - β
Signal	a 1 - a126	Signal	a44 - a83	Signal	b 1 - b126	Signal	b86 - b41
	a 5 - a122		a53 - a74		a95 - a32		
Ground	a 6 - a121	Ground	a54 - a73	Ground	b 5 - b122	Ground	b95 - b32
	a 7 - a120		a55 - a72		a96 - a31		
Signal	a 8 - a119	Signal	a56 - a71	Signal	b 6 - b121	Ground	b96 - b31
	a17 - a110		a57 - a70		a97 - a30		
Ground	a18 - a109	Ground	a58 - a69	Ground	b 7 - b120	Signal	b97 - b30
	a19 - a108		a60 - a67		a98 - a29		
Signal	a20 - a107	Signal	a61 - a68	Signal	b 8 - b119	Signal	b98 - b29
	a29 - a98		a62 - a65		a107 - a20		
Ground	a30 - a97	Ground	a63 - a64	Ground	b17 - b110	Signal	b107 - b20
	a31 - a96		a64 - a63		a108 - a19		
Signal	a32 - a95	Signal	a65 - a62	Signal	b18 - b109	Ground	b108 - b19
	a41 - a86		a66 - a61		a109 - a18		
Ground	a42 - a85	Ground	a67 - a60	Ground	b19 - b108	Signal	b109 - b18
	a43 - a84		a68 - a59		a110 - a17		
Signal	a44 - a83	Signal	a69 - a58	Signal	b20 - b107	Signal	b110 - b17
	a45 - a82		a70 - a57		a119 - a 8		
Ground	a46 - a81	Ground	a71 - a56	Ground	b29 - b98	Signal	b119 - b 8
	a47 - a80		a72 - a55		a120 - a 7		
Signal	a48 - a79	Signal	a73 - a54	Signal	b30 - b97	Ground	b120 - b 7
	a49 - a78		a74 - a53		a121 - a 6		
Ground	a50 - a77	Ground	a75 - a52	Ground	b31 - b96	Signal	b121 - b 6
	a51 - a76		a76 - a51		a122 - a 5		
Signal	a52 - a75	Signal	a77 - a50	Signal	b32 - b95	Signal	b122 - b 5
	a53 - a74		a78 - a49		b41 - b86		
Ground	a54 - a73	Ground	a79 - a48	Ground	b42 - b85	Signal	b83 - b44
	a55 - a72		a80 - a47		b43 - b84		
Signal	a56 - a71	Signal	a81 - a46	Signal	b44 - b83	Ground	b84 - b43
	a57 - a70		a82 - a45		b45 - b83		
Ground	a58 - a69	Ground	a83 - a44	Ground	b46 - b82	Signal	b85 - b42
	a59 - a68		a84 - a43		b47 - b81		
Signal	a60 - a67	Signal	a85 - a42	Signal	b48 - b80	Signal	b86 - b41
	a61 - a66		a86 - a41		b49 - b79		
Ground	a62 - a65	Ground	a87 - a40	Ground	b50 - b78	Signal	b87 - b40
	a63 - a64		a88 - a39		b51 - b77		
Signal	a64 - a63	Signal	a89 - a38	Signal	b52 - b76	Ground	b88 - b39
	a65 - a62		a90 - a37		b53 - b74		
Ground	a66 - a61	Ground	a91 - a36	Ground	b54 - b73	Signal	b89 - b38
	a67 - a60		a92 - a35		b55 - b72		
Signal	a68 - a59	Signal	a93 - a34	Signal	b56 - b71	Signal	b90 - b37
	a69 - a58		a94 - a33		b57 - b70		
Ground	a70 - a57	Ground	a95 - a32	Ground	b58 - b70	Signal	b91 - b36
	a71 - a56		a96 - a31		b59 - b69		
Signal	a72 - a55	Signal	a97 - a30	Signal	b60 - b68	Ground	b92 - b35
	a73 - a54		a98 - a29		b61 - b67		
Ground	a74 - a53	Ground	a99 - a29	Ground	b62 - b65	Signal	b93 - b34
	a75 - a52		a100 - a28		b63 - b64		
Signal	a76 - a51	Signal	a101 - a27	Signal	b64 - b63	Signal	b94 - b33
	a77 - a50		a102 - a26		b65 - b62		
Ground	a78 - a49	Ground	a103 - a26	Ground	b66 - b61	Signal	b95 - b32
	a79 - a48		a104 - a25		b67 - b60		
Signal	a80 - a48	Signal	a105 - a25	Signal	b68 - b59	Ground	b96 - b31
	a81 - a47		a106 - a24		b69 - b58		
Ground	a82 - a46	Ground	a107 - a24	Ground	b70 - b57	Signal	b97 - b30
	a83 - a45		a108 - a23		b71 - b56		
Signal	a84 - a44	Signal	a109 - a23	Signal	b72 - b55	Signal	b98 - b29
	a85 - a43		a110 - a22		b73 - b54		
Ground	a86 - a43	Ground	a111 - a22	Ground	b74 - b53	Signal	b99 - b28
	a87 - a42		a112 - a21		b75 - b52		
Signal	a88 - a42	Signal	a113 - a21	Signal	b76 - b51	Signal	b100 - b27
	a89 - a41		a114 - a20		b77 - b50		
Ground	a90 - a41	Ground	a115 - a20	Ground	b78 - b49	Signal	b101 - b26
	a91 - a40		a116 - a19		b79 - b48		
Signal	a92 - a40	Signal	a117 - a19	Signal	b80 - b47	Signal	b102 - b25
	a93 - a39		a118 - a18		b81 - b46		
Ground	a94 - a39	Ground	a119 - a18	Ground	b82 - b45	Signal	b103 - b24
	a95 - a38		a120 - a17		b83 - b44		
Signal	a96 - a38	Signal	a121 - a17	Signal	b84 - b43	Signal	b104 - b23
	a97 - a37		a122 - a16		b85 - b42		
Ground	a98 - a37	Ground	a123 - a16	Ground	b86 - b41	Signal	b105 - b22
	a99 - a36		a124 - a15		b87 - b40		
Signal	a100 - a36	Signal	a125 - a15	Signal	b88 - b39	Signal	b106 - b21
	a101 - a35		a126 - a14		b89 - b38		
Ground	a102 - a35	Ground	a127 - a14	Ground	b90 - b37	Signal	b107 - b20
	a103 - a34		a128 - a13		b91 - b36		
Signal	a104 - a34	Signal	a129 - a13	Signal	b92 - b35	Signal	b108 - b19
	a105 - a33		a130 - a12		b93 - b34		
Ground	a106 - a33	Ground	a131 - a12	Ground	b94 - b33	Signal	b109 - b18
	a107 - a32		a132 - a11		b95 - b32		
Signal	a108 - a32	Signal	a133 - a11	Signal	b96 - b31	Signal	b110 - b17
	a109 - a31		a134 - a10		b97 - b30		
Ground	a110 - a31	Ground	a135 - a10	Ground	b98 - b29	Signal	b111 - b16
	a111 - a30		a136 - a9		b99 - b28		
Signal	a112 - a30	Signal	a137 - a9	Signal	b100 - b27	Signal	b112 - b15
	a113 - a29		a138 - a8		b101 - b26		
Ground	a114 - a29	Ground	a139 - a8	Ground	b102 - b25	Signal	b113 - b14
	a115 - a28		a140 - a7		b103 - b24		
Signal	a116 - a28	Signal	a141 - a7	Signal	b104 - b23	Signal	b114 - b13
	a117 - a27		a142 - a6		b105 - b22		
Ground	a118 - a27	Ground	a143 - a6	Ground	b106 - b21	Signal	b115 - b12
	a119 - a26		a144 - a5		b107 - b20		
Signal	a120 - a26	Signal	a145 - a5	Signal	b108 - b19	Signal	b116 - b11
	a121 - a25		a146 - a4		b109 - b18		
Ground	a122 - a25	Ground	a147 - a4	Ground	b110 - b17	Signal	b117 - b10
	a123 - a24		a148 - a3		b111 - b16		
Signal	a124 - a24	Signal	a149 - a3	Signal	b112 - b15	Signal	b118 - b9
	a125 - a23		a150 - a2		b113 - b14		
Ground	a126 - a23	Ground	a151 - a2	Ground	b114 - b13	Signal	b119 - b8
	a127 - a22		a152 - a1		b115 - b12		
Signal	a128 - a22	Signal	a153 - a1	Signal	b116 - b11	Signal	b120 - b7
	a129 - a21		a154 - a0		b117 - b10		
Ground	a130 - a21	Ground	a155 - a0	Ground	b118 - b9	Signal	b121 - b6
	a131 - a20		a156 - a0		b119 - b8		
Signal	a132 - a20	Signal	a157 - a0	Signal	b120 - b7	Signal	b122 - b5
	a133 - a19		a158 - a0		b121 - b6		
Ground	a134 - a19	Ground	a159 - a0	Ground	b122 - b5	Signal	b123 - b4
	a135 - a18		a160 - a0		b123 - b4		
Signal	a136 - a18	Signal	a161 - a0	Signal	b124 - b3	Signal	b124 - b3
	a137 - a17		a162 - a0		b125 - b2		
Ground	a138 - a17	Ground	a163 - a0	Ground	b126 - b1	Signal	b125 - b2
	a139 - a16		a164 - a0		b127 - b1		
Signal	a140 - a16	Signal	a165 - a0	Signal	b128 - b0	Signal	b126 - b1
	a141 - a15		a166 - a0		b129 - b0		
Ground	a142 - a15	Ground	a167 - a0	Ground	b130 - b0	Signal	b127 - b0
	a143 - a14		a168 - a0		b131 - b0		
Signal	a144 - a14	Signal	a169 - a0	Signal	b132 - b0	Signal	b128 - b0
	a145 - a13		a170 - a0		b133 - b0		
Ground	a146 - a13	Ground	a171 - a0	Ground	b134 - b0	Signal	b129 - b0
	a147 - a12		a172 - a0		b135 - b0		
Signal	a148 - a12	Signal	a173 - a0	Signal	b136 - b0	Signal	b130 - b0
	a149 - a11		a174 - a0		b137 - b0		
Ground	a150 - a11	Ground	a175 - a0	Ground	b138 - b0	Signal	b131 - b0
	a151 - a10		a176 - a0		b139 - b0		
Signal	a152 - a10	Signal	a177 - a0	Signal	b140 - b0	Signal	b132 - b0
	a153 - a9		a178 - a0		b141 - b0		
Ground	a154 - a9	Ground	a179 - a0	Ground	b142 - b0	Signal	b133 - b0
	a155 - a8		a180 - a0		b143 - b0		
Signal	a156 - a8	Signal	a181 - a0	Signal	b144 - b0	Signal	b134 - b0
	a157 - a7		a182 - a0		b145 - b0		
Ground	a158 - a7	Ground	a183 - a0	Ground	b146 - b0	Signal	b135 - b0
	a159 - a6		a184 - a0		b147 - b0		
Signal	a160 - a6	Signal	a185 - a0	Signal	b148 - b0	Signal	b136 - b0
	a161 - a5		a186 - a0		b149 - b0		
Ground	a162 - a5	Ground	a187 - a0	Ground	b150 - b0	Signal	b137 - b0
	a163 - a4		a188 - a0		b151 - b0		
Signal	a164 - a4	Signal	a189 - a0	Signal	b152 - b0	Signal	b138 - b0
	a165 - a3		a190 - a0		b153 - b0		
Ground	a166 - a3	Ground	a191 - a0	Ground	b154 - b0	Signal	b139 - b0
	a167 - a2		a192 - a0		b155 - b0		
Signal	a168 - a2	Signal	a193 - a0	Signal	b156 - b0	Signal	b140 - b0
	a169 - a1		a194 - a0		b157 - b0		
Ground	a170 - a1	Ground	a195 - a0	Ground	b158 - b0	Signal	b141 - b0
	a171 - a0		a196 - a0		b159 - b0		
Signal	a172 - a0	Signal	a197 - a0	Signal	b160 - b0	Signal	b142 - b0
	a173 - a0		a198 - a0		b161 - b0		
Ground	a174 - a0	Ground	a199 - a0	Ground	b162 - b0	Signal	b143 - b0
	a175 - a0		a200 - a0		b163 - b0		

◆ IT1 Series Extraction Tool

Part Number	CL No.	Remarks	RoHS
IT1-PICKER(1)	641-1001-3	2-piece Package	YES



Installation and Use Instruction Manual

Table of Contents

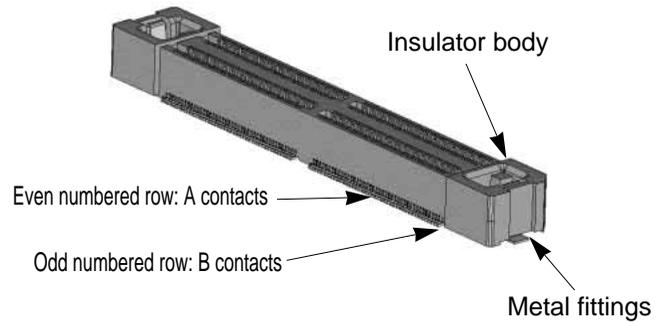
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◆ Connector Handling Precautions

1. System components

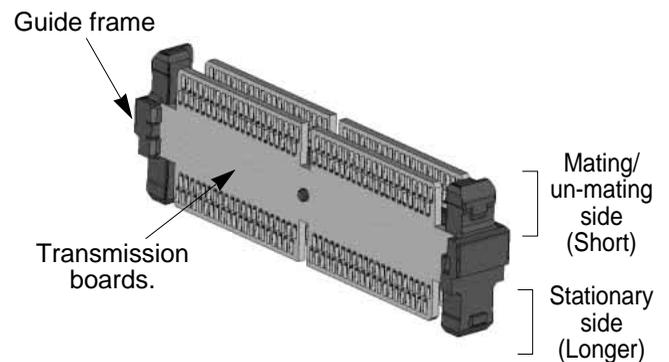
■ Receptacles

- **Contacts**
Row A and row B contacts are arranged alternately starting with No.1 in row B. Placement on board is polarized.
- **Metal Fittings**
Permanently inserted to provide lock with the Transmission Module and additional solder areas with the PCB.
- **Insulator body**
Injection molded single unit provides protection and correct self-alignment of all components.



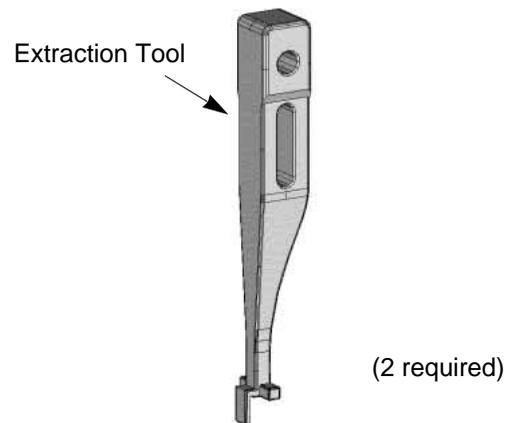
■ Transmission Module Assembly

- Each Module has stationary side and a mating/un-mating side.
- When mounting multiple connectors, please keep uniform orientation of the stationary side.
- Transmission printed circuit boards used in the module are based on JIS standards and quality standards applicable to memory modules.



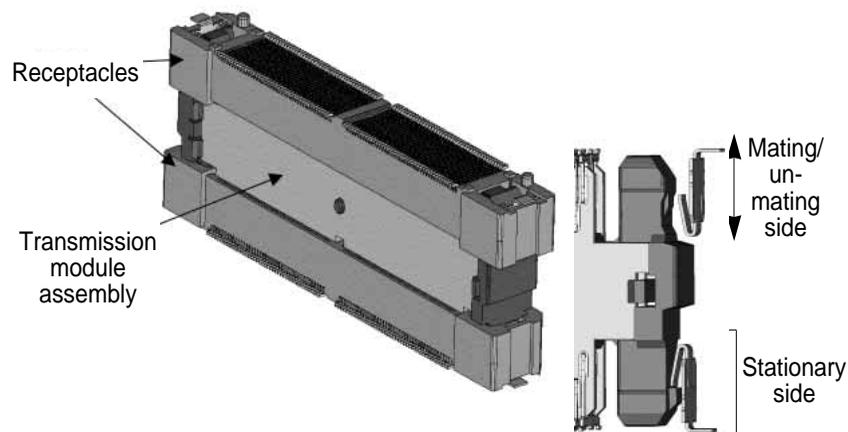
■ Extraction Tool

- Used to release the transmission module from the stationary receptacle.



Fully Connected Condition

The interconnection package consists of 3 main sub-assemblies: Two receptacles and the Transmission Module. The transmission module, held securely by the guide frame has a mating/un-mating side and a stationary side. Once the stationary side is inserted in the receptacle, it can not be removed without the use of extraction tool. The mating/un-mating side allows repeated re-insertion of the receptacle on this side only.



2. Recommended Design Guidelines

2-1 Solder Land Pattern

When placing the receptacles on the Printed Circuit Boards using automatic mounting equipment or manually, assure that the correct diameters of the holes (Fig. 1) are through the entire thickness of the board.

◆ Locating post hole diameter ◆

The contacts of receptacle assembly are exposed on the bottom surfaces. The exposed areas of the contacts are a distance of 0.25 mm minimum from the surface of the Printed Circuit Board, on which the receptacle assembly is placed (Fig.2). Consideration should be taken not to place or assure insulation of conductive traces under the receptacle assemblies.

Refer to the separate drawings for recommended solder land pattern dimensions of the receptacle, and signals and ground connection diagram of the transmission module.

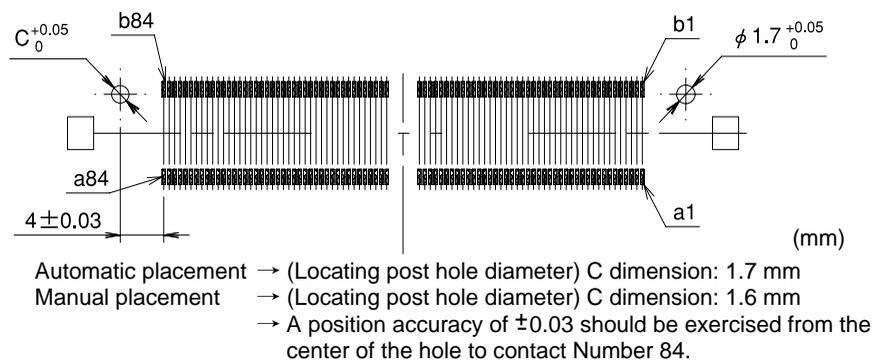


Fig. 1 IT1-168S-SV Recommended Solder Land Pattern

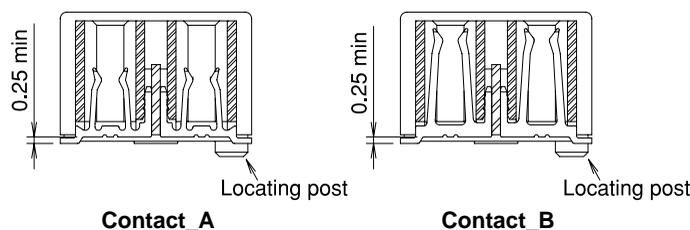


Fig. 2 Cross section of IT1 receptacle

2-2 Board-to-Board Spacer heights

The two parallel boards connected by the IT1 connectors should be fastened to additional spacers between them.

Fig. 3 indicates the connector height tolerance and the spacer's height.

When designing the spacer's height, consideration should be given to the solder paste thickness and any other features, which may affect the full mating of the connector.

Fig. 3 indicates design dimensions for the 19 mm board-to-board distance.

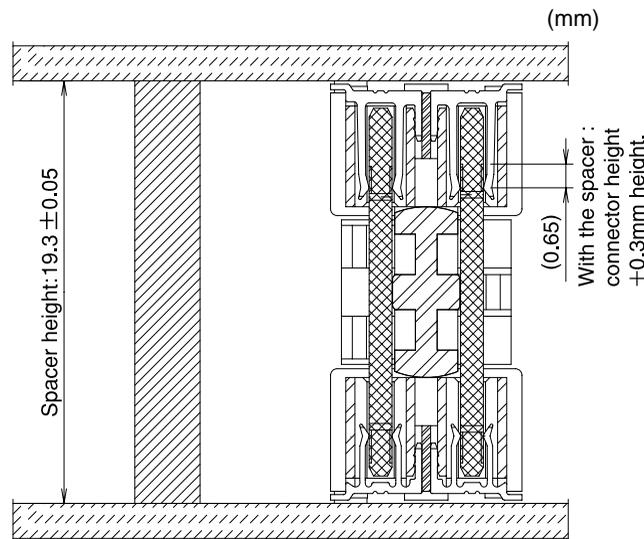


Fig. 3

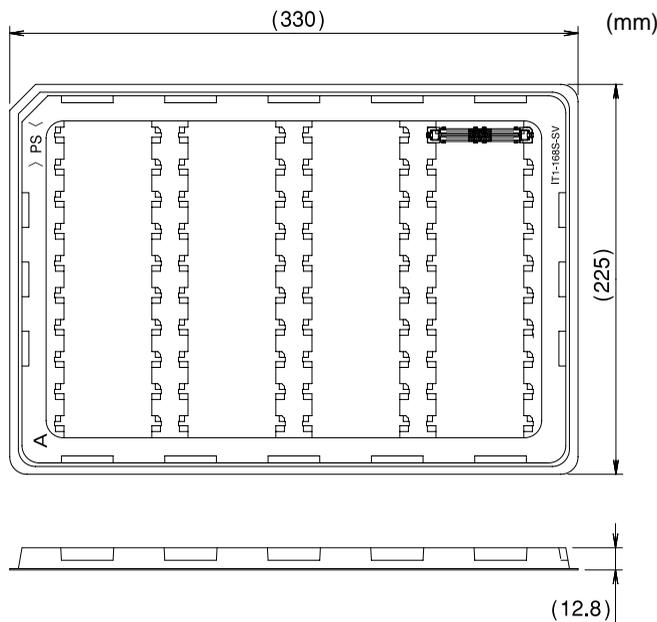
3. Connector Placement

3-1 Packaging Types

- Two types of packaging are available: semi-hard tray and hard tray. Customers may specify a packaging type suitable for their automatic placement machines.
- * Refer to the separate drawings for the detailed dimensions of the trays.

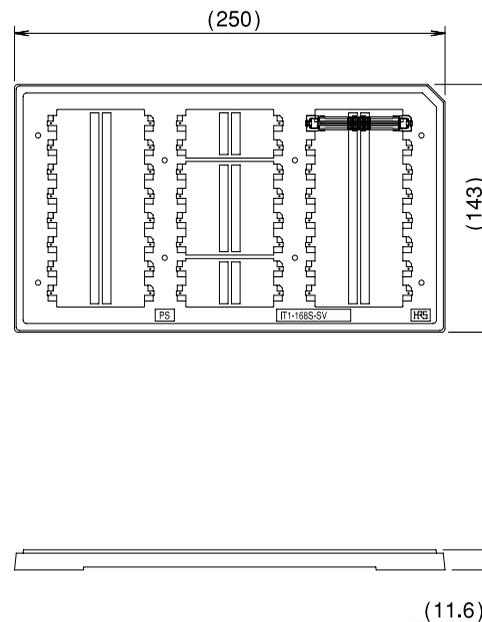
• Semi-hard tray packaging

168 contacts receptacle: 40 pieces per tray
 252 contacts receptacle: 30 pieces per tray



• Hard tray packaging

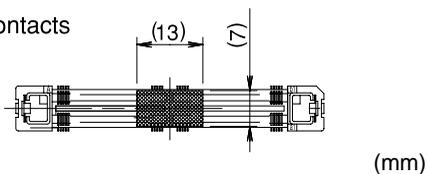
168 contacts receptacle: 24 pieces per tray
 252 contacts receptacle: 16 pieces per tray



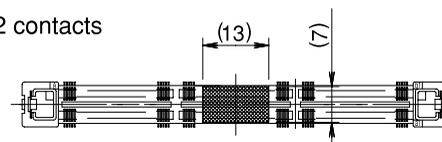
3-2 Automatic placement - Vacuum Pick-and-Place Areas

- Specify "Vacuum Pick-up Tape Specification".
 The area and position of the pick-and-place surface are indicated in the diagrams below.

• 168 contacts



• 252 contacts



3-3 Receptacle Board Placement

- When using automatic placement equipment, verify the packaging type and the Pick-and-place areas.
- When placing manually, pay attention to the possibility of positional shift. Ref. Fig. 4.
- * When placing multiple connectors, to assure positional accuracy, it is advised to use automatic placement equipment.

◆ Precautions for Manual Placement ◆

The orientation posts serve as a prevention measure to avoid incorrect placement of the receptacle assemblies on the board. The contact terminals must be placed correctly over the corresponding solder pad as shown on Fig. 4-1.

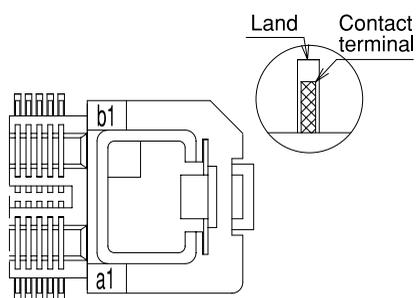


Fig. 4-1 = Correct

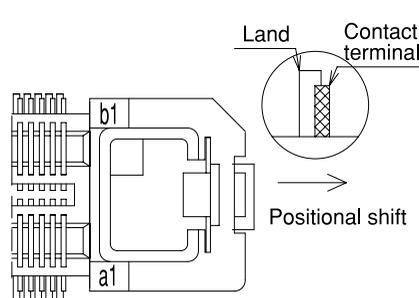


Fig. 4-2 = Incorrect

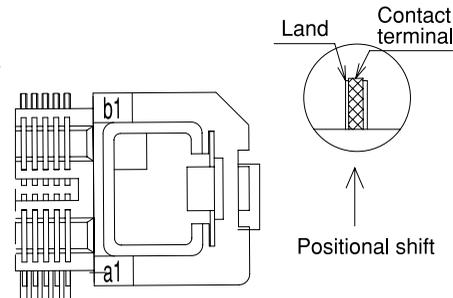
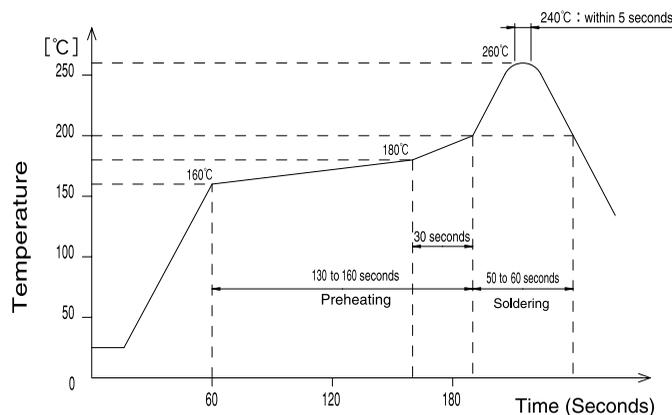


Fig. 4-3 = Incorrect

3-4 Recommended Reflow Conditions



Applicable Conditions

- Reflow system : IR reflow
- Solder : Paste type (Sn:96.5, AG:3.0, Cu:5.0)
(Flux content 9wt%)
- Test board : Glass epoxy (FR-4), 85mm x 110mm x 1.6 mm
- Metal mask thickness : 0.15 mm

* Shown recommended temperature profile.

3-5 Solder Repairs

Assure that flux is not reaching the contact areas of the connector.
Wash the assembly as recommended below.

◆Cleaning Conditions◆

<Organic Solvent Cleaning>

Solvent Type	Normal temperature	Heated
IPA (Isopropyl alcohol)	Good	Good

<Water Based Cleaning>

When using water based cleaning agents (e.g., terpene, and alkali saponifiers), select the cleaning agent based on the documentation issued by the various manufacturers, which describes its effects on metals and resins. Care should be taken not to leave moisture on the connectors.

<Cleaning Precautions>

Residual flux or cleaning agent remaining on the connectors when cleaning with organic solvents or water based cleaners may cause deterioration of the electrical performance. It is important to check that a thorough washing has been performed.

4. Mating Procedure

Follow the procedure described below.

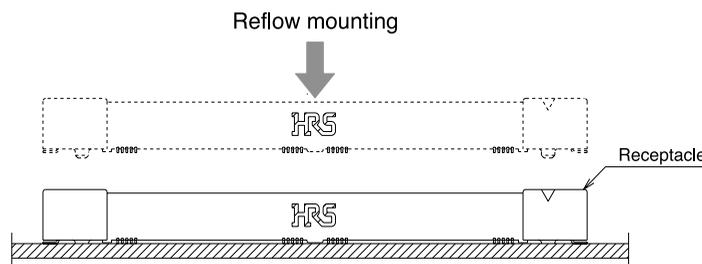
- Note:
- The transmission module must be fully inserted into receptacle assembly already placed and soldered to a board.
 - The Transmission Module cannot be exposed to heat temperatures of the soldering process.

Step 1

Receptacle Placement on the board – stationary side

Assure that the orientation posts are aligned with the holes on the board.

When specifying receptacle assemblies without the orientation posts exercise extra caution to assure correct orientation and connection with the solder pads.

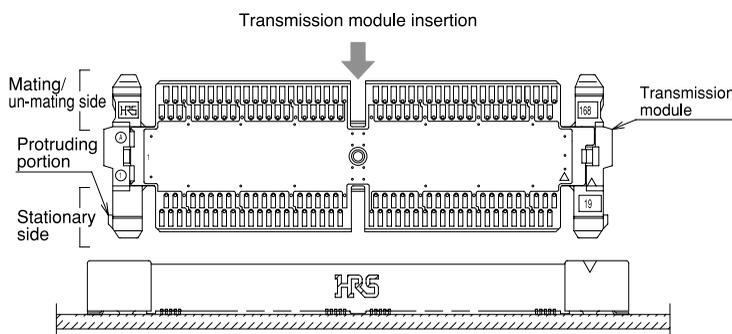


Step 2

Insertion of the Transmission Module

Fully insert the Transmission Module in the board-installed receptacle assembly.

It is critical that the insertion is done straight and uniformly.



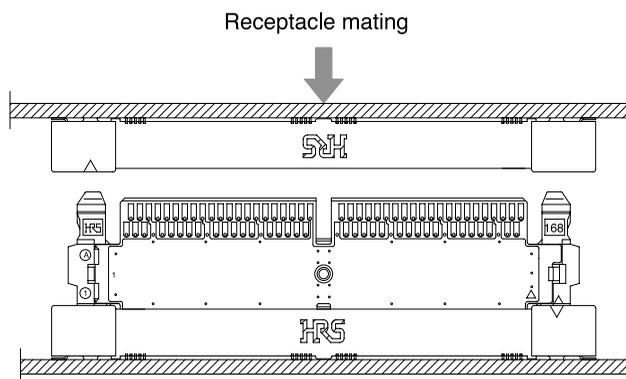
Step 3

Mating/un-mating

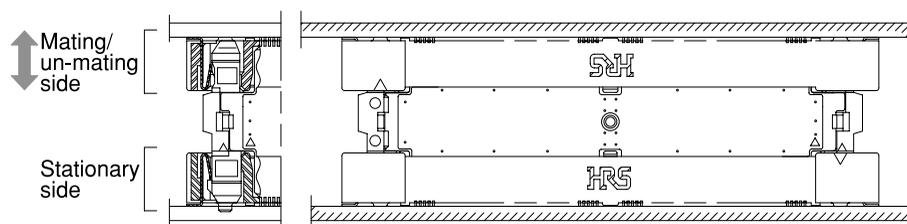
Assure that the receptacle assembly is correctly aligned with the Transmission Module.

Fully insert the receptacle assembly on the Transmission Module.

It is critical that the insertion is done straight and uniformly.



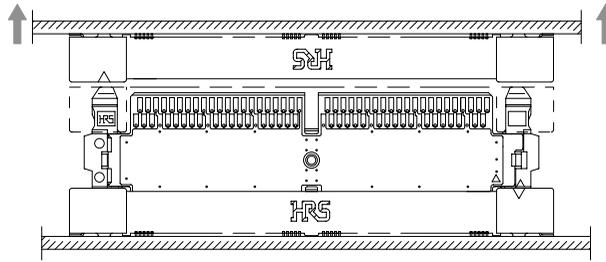
Step 4



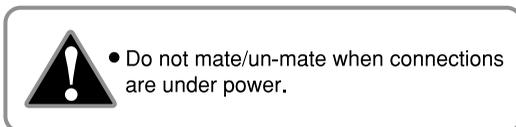
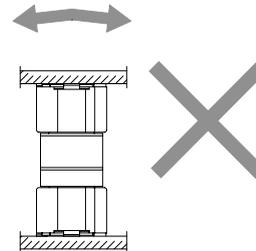
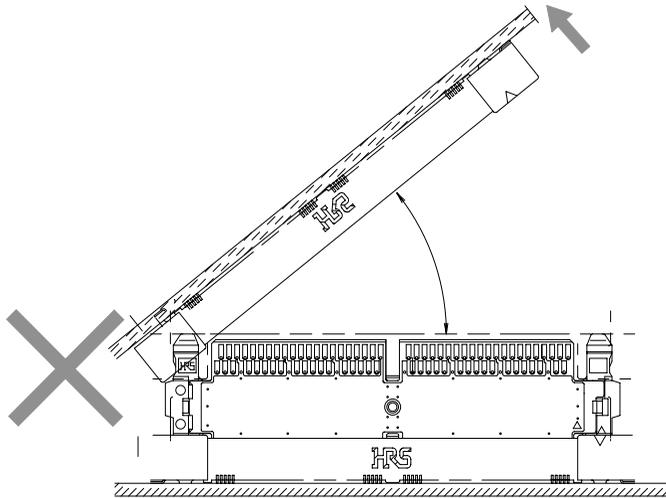
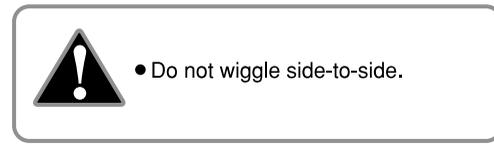
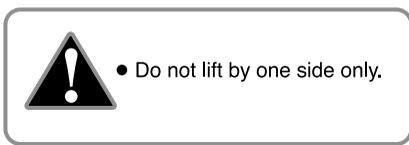
5. Un-mating of Connectors

Recommended Method

- Pull uniformly straight up.



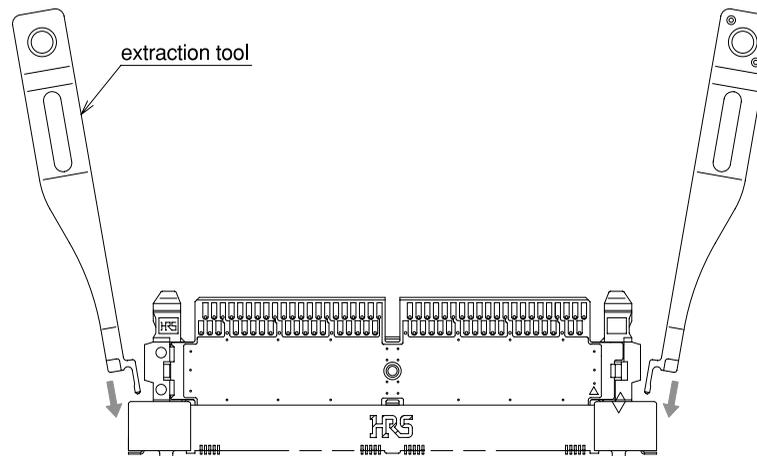
Prohibited un-mating Methods



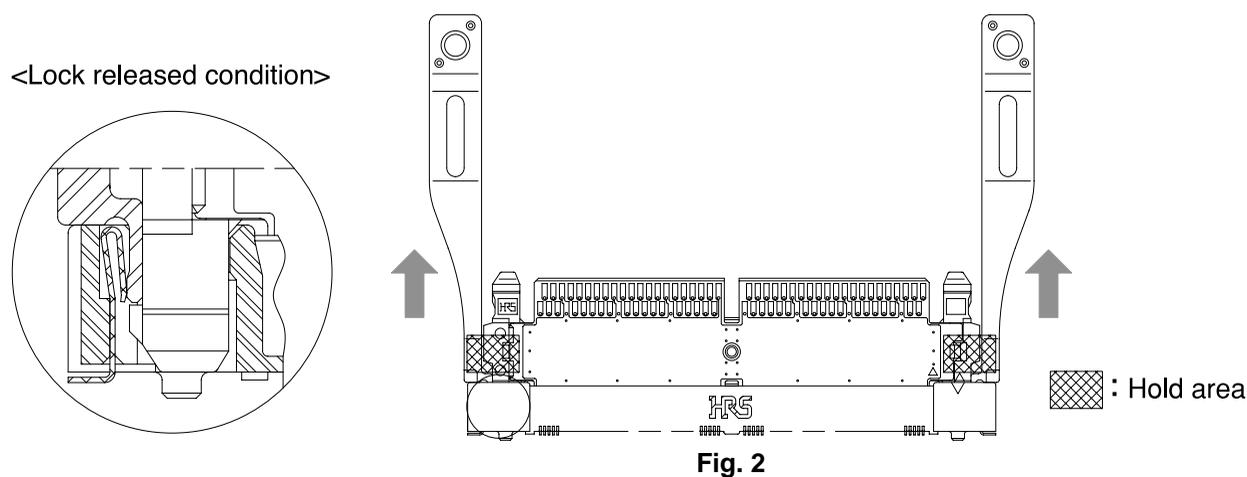
6. Removal of the Transmission Module - stationary side

- Requires use of dedicated extraction tool. Two are required.

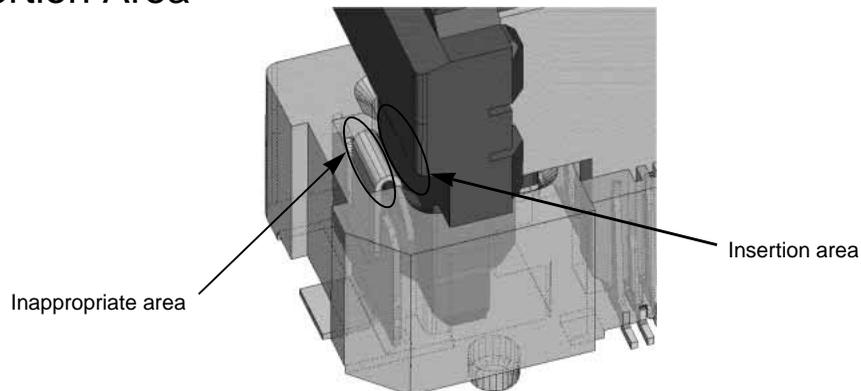
- Step 1**
- Fully insert the tools into each end of the receptacle assembly (Fig. 1) assuring that they will be over the hold areas of the Transmission Module frame. Ref. Fig. 2



- Step 2**
- Pull out the transmission module holding the tools straight.



extraction tool Insertion Area



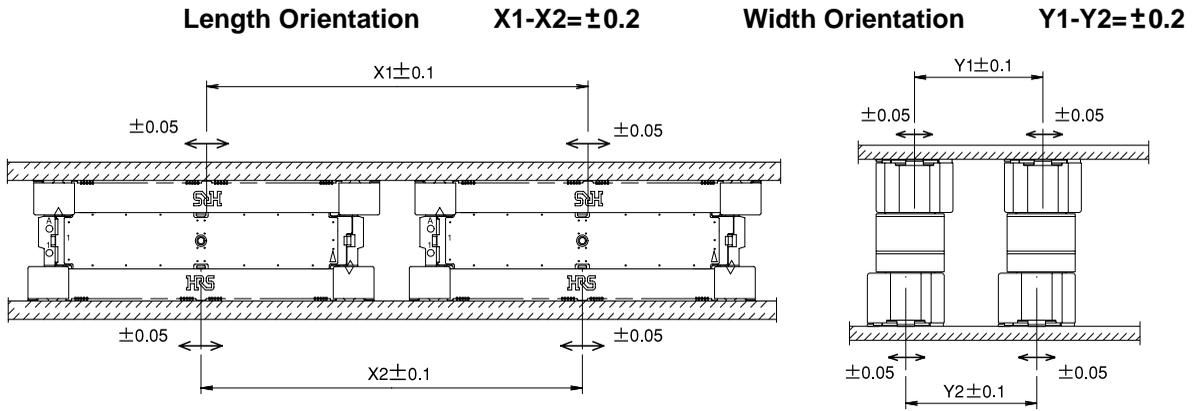
7. Precautions When Mounting Multiple Connectors

Note: Observe the requirements as listed in paragraph 7-1 and 7-2.

The mating/un-mating forces will increase with use of multiple assemblies. It is recommended that a dedicated tooling is used for mating / un-mating of multiple connector assemblies in a single operation.

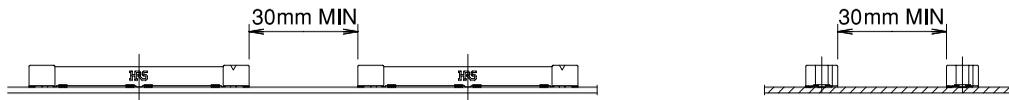
7-1 Allowable Amount of Misalignment

Maximum allowable misalignment in X and Y directions is ± 0.2 mm total.
 Refer to the drawings below.



7-2 Recommended Connector Placement

It is recommended to leave min. of 30 mm space between the adjacent connector assemblies.



7-3 Examples of Prohibited Placement Positions

To assure reliability of solder joints and mating/ un-mating without damage, **DO NOT PLACE MULTIPLE CONNECTORS** as illustrated below.



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