

Registration No. 1248

JAXA-QTS-2060/F201

22 October 2019

CONNECTORS, RECTANGULAR, MICROMINIATURE,
HIGH RELIABILITY, SPACE USE,
DETAIL SPECIFICATION FOR

Prepared by ITT Cannon, Ltd.

Issued by Japan Aerospace Exploration Agency

This document is the English version of JAXA QTS/ADS which was originally written and authorized in Japanese and carefully translated into English for international users. If any question arises as to the context or detailed description, it is strongly recommended to verify against the latest official Japanese version.

The release date of the English version of this specification: January 13, 2022

Revision Log

Rev.	Date	Revised Contents
NC	22 Oct. 2019	Original

Contents

1. GENERAL	1
1.1 Scope.....	1
1.2 Part Number.....	1
1.3 Rating	3
2. APPLICABLE DOCUMENTS.....	3
3. REQUIREMENTS	4
3.1 Materials	4
3.2 Shape, Physical Dimensions, Marking and Mass	4
3.2.1 Shape and Physical Dimensions	4
3.2.2 Marking	4
3.2.3 Mass	5
3.3 Performance	6
3.3.1 Contact Resistance	7
3.3.2 Low-Signal Level Contact Resistance	8
4. QUALITY ASSURANCE PROVISIONS.....	9
4.1 Qualification Test	9
4.2 Quality Conformance Inspection	11
4.3 Test Method	12
4.3.1 Electrical Performance	12
4.3.1.1 Contact Resistance	12
4.3.1.2 Low-Signal Level Contact Resistance	13
4.4 Long-Term Storage	13
4.5 Change to Tests and Inspections	13
5. PREPARATION FOR DELIVERY.....	14
5.1 Packaging	14
5.2 Marking on Package.....	14
6. NOTES.....	14
6.1 Notes for Purchaser	15
6.1.1 Items to be Specified for Procurement	15

**CONNECTORS, RECTANGULAR, MICROMINIATURE,
HIGH RELIABILITY, SPACE USE,
DETAIL SPECIFICATION FOR**

1. GENERAL

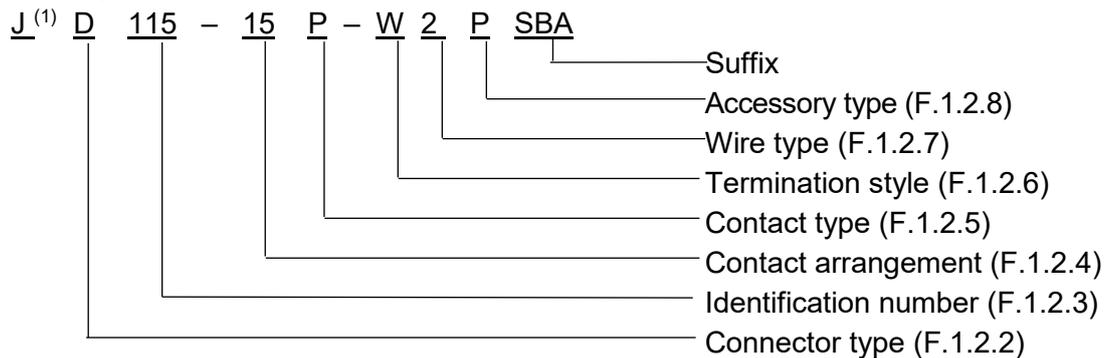
1.1 Scope

This specification establishes the requirements for rectangular microminiature connectors (herein after referred to as “connectors”) specified in Connectors, High Reliability, Space Use, General Specification for (JAXA-QTS-2060), Appendix F.

1.2 Part Number

The part number shall identify connector type, identification number, contact arrangement, contact type and termination style as specified in Table 1 and example is as follows.

[Example]



Note: ⁽¹⁾ "J" indicates the part is for space use.

Table 1. Part Number

Item	Applicable paragraph of JAXA-QTS-2060, Appendix F	Description
Connector type	F.1.2.2	D: D-type shell rectangular connector
Identification number	F.1.2.3	<p>Series: "5" indicates that the connector conforms to appendix F.</p> <p>Shell surface finishes: 1 – Electroless nickel plating</p> <p>Shell materials: 1 – Aluminum alloy</p>
Contact arrangement	F.1.2.4	Number of contacts (9, 15, 21, 25, 31, 37, 51 and 100)
Contact type	F.1.2.5	P: Pin contact (male) S: Socket contact (female)

Table 1. Part Number (Cont.)

Item	Applicable paragraph of JAXA-QTS-2060, Appendix F	Description			
Termination style	F.1.2.6	W: Wire S: Soldering R: Right angle			
Wire type (only for termination style "W")	F.1.2.7	Code	Wire type	Wire size	Wire color
		2	M22759/33	26AWG	Single-color (white)
		3			Repetition of 10 colors (MIL-STD-618 SYSTEM1)
Accessory type	F.1.2.8	As specified in Table 2.			
Suffix	-	As specified in Table 3.			

Table 2. Accessory Type

Code	Type		Shape of screw	Shape of screw head
P	Jackpost assembly ⁽¹⁾	For 9 to 51 contacts	-	-
M	Floating jackscrew assembly		-	Slot
L	Jackscrew assembly		Low profile	Slot
R	Jackscrew assembly		Low profile	Hexagon
K	Jackscrew assembly		High profile	Slot
Q	Jackscrew assembly		High profile	Hexagon
S	Jackpost assembly ⁽²⁾	For 100 contacts	-	-
F	Fixed jackscrew assembly		-	Slot
J	Jackscrew assembly		Low profile	Slot
N	Jackscrew assembly		Low profile	Hexagon
H	Jackscrew assembly		High profile	Slot
T	Jackscrew assembly		High profile	Hexagon

Notes: ⁽¹⁾ Applicable to all jackscrew assemblies for 9 to 51 contacts.

⁽²⁾ Applicable to all jackscrew assemblies for 100 contacts.

Table 3. Suffix

Termination Style	Suffix	Description
Wire	####	Wire length shall be displayed in 4 digits and the unit shall be set to mm.
Right Angle	###	 <p>Terminal length ⁽¹⁾ A: 2.9mm B: 3.1mm C: 2.5mm</p> <p>Terminal bending position ⁽¹⁾ A: 7.5mm B: 6.5mm C: 11mm</p> <p>Orientation of mating direction when mounted on top plane of the printed wiring board ⁽¹⁾ S: Standard R: Reverse</p>

Note: ⁽¹⁾ Combinations of the manufacturable number of contacts, terminal bending position and orientation of mating direction are shown in Supplementary Figures F-6 and F-7.

1.3 Rating

The ratings shall be as specified in Table 4.

Table 4. Rating

Item	Applicable paragraph of JAXA-QTS-2060, Appendix F	Description
Voltage (V _{AC})	F.3.4	At barometric pressure: 200 At reduced pressure: 50 (4.4kPa{33.0mmHg})
Current (A)		3/Contact
Operating temperature range (°C)		-65 to +125°C

2. APPLICABLE DOCUMENTS

The applicable documents shall be as specified in paragraph F.2.1 of JAXA-QTS-2060.

3. REQUIREMENTS

The requirements shall be as follows and as specified in paragraph F.3 of JAXA-QTS-2060.

3.1 Materials

The materials shall be as shown in Table 5.

Table 5. Materials

Item	Applicable paragraph of JAXA-QTS-2060, Appendix F	Description
Dissimilar metal	F.3.2.1	As specified in JAXA-QTS-2060, Appendix F.
Nonmagnetic material	F.3.2.2	As specified in JAXA-QTS-2060, Appendix F.
Sublimation	F.3.2.3	As specified in JAXA-QTS-2060, Appendix F.
Contact	F.3.2.4	Copper alloy
Insert	F.3.2.5	LCP
Shell	F.3.2.6	Aluminum alloy (Spec.: QQ-A-250 6061)
Filling compound	F.3.2.7	Epoxy resin
Interfacial seal (Gasket)	F.3.2.8	Silicon (Spec.: A-A-59588)
Wire	F.3.2.9	Wire type: as specified in Table 1. Right angle type: Phosphor bronze with gold plating (Spec.: JIS H 3270)
Accessories	F.3.2.10	Stainless steel (Spec.: FED-STD-H28)
Bacteria resistance	F.3.2.11	As specified in JAXA-QTS-2060, Appendix F.
Surface finish	F.3.2.12	Contact: Gold plating over copper plating (Spec.: SAE-AMS 2422) Shell: Electroless nickel plating (Spec.: SAE-AMS-C-26074)

3.2 Shape, Physical Dimensions, Marking and Mass

3.2.1 Shape and Physical Dimensions

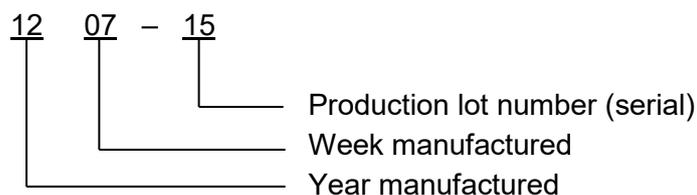
Shape and physical dimensions of connectors and accessories shall be in accordance with Supplementary Figures F-1 through F-11 of this specification.

3.2.2 Marking

The following items shall be marked in the locations as shown in Supplementary Figures F-2 through F-7.

- a) Manufacturer's name or its abbreviation (put abbreviation "ITT" on products)
- b) Part number

c) Year and week manufactured and lot number



3.2.3 Mass

Mass of the connectors, accessories and wires shall be as specified in Tables 6.1 through 6.3.

Table 6.1. Mass (Connectors)

Part number	Product Name	No. of contacts	Mass (unit: g)			
			Pin connector		Socket connector	
			Standard	Max.	Standard	Max.
JD115- 9*-W	Wire type ⁽²⁾	9	1.8	2.1	1.6	1.9
JD115- 15*-W		15	2.2	2.6	2.1	2.5
JD115- 21*-W		21	2.7	3.1	2.5	2.9
JD115- 25*-W		25	3.1	3.6	3.0	3.4
JD115- 31*-W		31	3.6	4.2	3.3	3.9
JD115- 37*-W		37	4.1	4.7	3.8	4.4
JD115- 51*-W		51	4.6	5.2	4.3	4.9
JD115-100*-W		100	7.7	8.6	8.3	9.2
JD115- 9*-S	Soldering type	9	1.9	2.2	1.7	2.1
JD115- 15*-S		15	2.5	2.9	2.4	2.7
JD115- 21*-S		21	3.1	3.5	2.8	3.3
JD115- 25*-S		25	3.6	4.0	3.4	3.8
JD115- 31*-S		31	4.2	4.7	3.9	4.4
JD115- 37*-S		37	4.7	5.4	4.5	5.0
JD115- 51*-S		51	5.6	6.2	5.3	5.9
JD115-100*-S		100	9.9	10.7	10.4	11.3
JD115- 9*-R	Right angle type ⁽³⁾	9	2.1	2.4	1.9	2.2
JD115- 15*-R		15	2.7	3.1	2.6	3.0
JD115- 21*-R		21	3.3	3.7	3.1	3.5
JD115- 25*-R		25	3.9	4.4	3.8	4.2
JD115- 31*-R		31	4.5	5.0	4.2	4.7
JD115- 37*-R		37	5.3	5.9	5.0	5.6
JD115- 51*-R		51	6.0	6.6	5.7	6.3
JD115-100*-R		100	11.4	12.3	12.0	12.9

Notes: ⁽¹⁾ Mass of accessories is not included in the mass specified in this specification.

⁽²⁾ Mass of wires is not included. Mass of wires specified in this specification shall be added to the specified mass for calculating mass.

⁽³⁾ Mass of connectors with 42mm solid wires.

Table 6.2. Mass (Accessories)

Code	Type		Shape of screw	Shape of screw head	Max. mass (unit: g)
P	Jackpost assembly	For 9 to 51 contacts	-	-	0.6
M	Floating jackscrew assembly		-	Slot	0.9
L	Jackscrew assembly		Low profile	Slot	0.4
R	Jackscrew assembly		Low profile	Hexagon	0.4
K	Jackscrew assembly		High profile	Slot	1.3
Q	Jackscrew assembly		High profile	Hexagon	1.3
S	Jackpost assembly	For 100 contacts	-	-	2.4
F	Fixed jackscrew assembly		-	Slot	1.7
J	Jackscrew assembly		Low profile	Slot	0.8
N	Jackscrew assembly		Low profile	Hexagon	0.9
H	Jackscrew assembly		High profile	Slot	2.9
T	Jackscrew assembly		High profile	Hexagon	3.0

Note: ⁽¹⁾ Mass of accessories is for one accessory. Mass of two accessories shall be added to the specified mass for calculating product mass.

Table 6.3. Mass (Wires)

Wire type	Wire type	wire size	Maximum mass (unit: g/1,000mm)
2 and 3	M22759/33	26AWG	2.1

3.3 Performance

The performance requirements for the connectors shall be as specified in Table 7.

Table 7. Performance Requirement

Item	Applicable paragraph of JAXA-QTS-2060, Appendix F	Requirements
Externals, physical dimensions and marking	F.3.3	As specified in JAXA-QTS-2060, Appendix F.
Residual magnetization	F.3.2.2	As specified in JAXA-QTS-2060, Appendix F.
Dielectric withstanding voltage (at barometric pressure)	F.3.5.1	As specified in JAXA-QTS-2060, Appendix F.
Dielectric withstanding voltage (at reduced pressure)	F.3.5.1	As specified in JAXA-QTS-2060, Appendix F.
Insulation resistance	F.3.5.2	As specified in JAXA-QTS-2060, Appendix F.
Contact resistance	3.3.1 ⁽¹⁾	As specified in paragraph 3.3.1 ⁽¹⁾ .
Low-signal level contact resistance	3.3.2 ⁽¹⁾	As specified in paragraph 3.3.2 ⁽¹⁾ .
Contact retention	F.3.6.2	As specified in JAXA-QTS-2060, Appendix F.
Contact engagement and separation forces	F.3.6.3	As specified in JAXA-QTS-2060, Appendix F.
Durability	F.3.6.4	As specified in JAXA-QTS-2060, Appendix F.
Insert retention	F.3.6.5	As specified in JAXA-QTS-2060, Appendix F.
Mating and unmating forces	F.3.6.1	As specified in JAXA-QTS-2060, Appendix F.
Crimp tensile strength (contact)	F.3.6.6	As specified in JAXA-QTS-2060, Appendix F.
Resistance to soldering heat	F.3.6.7	As specified in JAXA-QTS-2060, Appendix F.
Solderability	F.3.6.8	As specified in JAXA-QTS-2060, Appendix F.
High frequency vibration	F.3.7.1.1	As specified in JAXA-QTS-2060, Appendix F.
Random vibration	F.3.7.1.2	As specified in JAXA-QTS-2060, Appendix F.
Shock (I)	F.3.7.2.1	As specified in JAXA-QTS-2060, Appendix F.
Shock (II)	F.3.7.2.2	As specified in JAXA-QTS-2060, Appendix F.
Temperature cycling (I)	F.3.7.3.1	As specified in JAXA-QTS-2060, Appendix F.
Temperature cycling (II)	F.3.7.3.2	As specified in JAXA-QTS-2060, Appendix F.
Humidity	F.3.7.4	As specified in JAXA-QTS-2060, Appendix F.
Fluid immersion	F.3.7.5	As specified in JAXA-QTS-2060, Appendix F.
Resistance to corrosive gas	F.3.7.6	As specified in JAXA-QTS-2060, Appendix F.
Salt spray (corrosion)	F.3.7.7	As specified in JAXA-QTS-2060, Appendix F.
Radiation tolerance	F.3.7.8	As specified in JAXA-QTS-2060, Appendix F.
Temperature life	F.3.8.1	As specified in JAXA-QTS-2060, Appendix F.
Outgassing	F.3.2.13	As specified in JAXA-QTS-2060, Appendix F.

Note ⁽¹⁾: This indicates paragraph number of this specification.

3.3.1 Contact Resistance

When connectors are tested in accordance with paragraph 4.3.1.1 of this specification, the contact resistance of the mated contacts shall meet the requirements (voltage drop) specified in Table 8 in this specification.

Table 8. Contact Resistance (Voltage Drop)

Unit: mV

Termination style	Contact size	Wire size (AWG)	Test current (A)	Voltage drop		Wire type
				Initial	After salt spray test	
Wire	24	26	2.5	20 max.	25 max.	M22759/33
Soldering	24	26	2.5	20 max.	25 max.	
Right angle	24	25	2.5	20 max.	25 max.	JIS H 3270

3.3.2 Low-Signal Level Contact Resistance

When connectors are tested in accordance with paragraph 4.3.1.2 of this specification, low-signal level contact resistance shall meet the requirements specified in Table 9.

Table 9. Low-Signal Level Contact Resistance

Unit: mΩ

Termination style	Contact size	Wire size (AWG)	Contact resistance
Wire	24	26	10 max.
Soldering	24	26	10 max.
Right angle	24	25	10 max.

4. QUALITY ASSURANCE PROVISIONS

4.1 Qualification Test

The qualification test for the connectors shall be performed in accordance with paragraph F.4.1 of Appendix F, JAXA-QTS-2060 and Table 10. Sample size shall be as specified in Table 11.

Table 10. Qualification Tests and Quality Conformance Inspection (Group C)

Test item	Requirement paragraph	Test method paragraph	Test group					
			1	2	3	4	5	6
Externals, physical dimensions and marking	F.3.3	F.4.3.3	x	x	x	x	x	x
Residual magnetization ⁽²⁾	F.3.2.2	F.4.3.2.1	x	x				
Dielectric withstanding voltage (barometric pressure)	F.3.5.1	F.4.3.4.1.1	x	x				
Dielectric withstanding voltage (reduced pressure)	F.3.5.1	F.4.3.4.1.2	x	x				
Insulation resistance	F.3.5.2	F.4.3.4.2	x	x				
Contact resistance	3.3.1 ⁽³⁾	4.3.1.1 ⁽³⁾	x	x				
Contact engagement and separation forces	F.3.6.3	F.4.3.5.3	x	x				
Mating and unmating forces	F.3.6.1	F.4.3.5.1	x	x				
Temperature cycling (I)	F.3.7.3.1	F.4.3.6.3.1	x	x				
Humidity	F.3.7.4	F.4.3.6.4	x	x				
Dielectric withstanding voltage (barometric pressure)	F.3.5.1	F.4.3.4.1.1	x	x				
Insulation resistance	F.3.5.2	F.4.3.4.2	x	x				
High frequency vibration	F.3.7.1.1	F.4.3.6.1.1	x	x				
Shock (I)	F.3.7.2.1	F.4.3.6.2.1	x	x				
Durability	F.3.6.4	F.4.3.5.4	x	x				
Contact resistance	3.3.1 ⁽³⁾	4.3.1.1 ⁽³⁾	x	x				
Contact engagement and separation forces	F.3.6.3	F.4.3.5.3	x	x				
Mating and unmating forces	F.3.6.1	F.4.3.5.1	x	x				
Salt spray (corrosion)	F.3.7.7	F.4.3.6.7	x					
Low-signal level contact resistance	3.3.2 ⁽³⁾	4.3.1.2 ⁽³⁾	x					
Contact resistance	3.3.1 ⁽³⁾	4.3.1.1 ⁽³⁾	x					
Mating and unmating forces	F.3.6.1	F.4.3.5.1	x					
Contact retention	F.3.6.2	F.4.3.5.2	x					
Externals, physical dimensions and marking	F.3.3	F.4.3.3	x					
Fluid immersion	F.3.7.5	F.4.3.6.5		x				
Mating and unmating forces	F.3.6.1	F.4.3.5.1		x				
Insert retention	F.3.6.5	F.4.3.5.5		x				
Externals, physical dimensions and marking	F.3.3	F.4.3.3		x				
Outgassing ⁽²⁾	F.3.2.13	F.4.3.2.2			x			
Crimp tensile strength (contact)	F.3.6.6	F.4.3.5.6				x		
Solderability	F.3.6.8	F.4.3.5.8					x	
Resistance to soldering heat	F.3.6.7	F.4.3.5.7						x
Contact retention	F.3.6.2	F.4.3.5.2					x	x

Notes: ⁽¹⁾ The tests identified with the symbol “x” shall be performed.

⁽²⁾ Apply for the qualification tests only.

⁽³⁾ This indicates paragraph number of this specification.

Table 10. Qualification Tests and Quality Conformance Inspection (Group C) (Cont.)

Test item	Requirement paragraph	Test method paragraph	Test group				
			7	8	9	10	11
Externals, physical dimensions and marking	F.3.3	F.4.3.3	×	×	×	×	×
Low-signal level contact resistance	3.3.2 ⁽²⁾	4.3.1.2 ⁽²⁾				×	×
Contact resistance	3.3.1 ⁽²⁾	4.3.1.1 ⁽²⁾	×	×	×	×	
Contact engagement and separation forces	F.3.6.3	F.4.3.5.3				×	
Dielectric withstanding voltage (barometric pressure)	F.3.5.1	F.4.3.4.1.1	×	×	×		
Insulation resistance	F.3.5.2	F.4.3.4.2	×	×	×		
Random vibration	F.3.7.1.2	F.4.3.6.1.2	×				
Shock (II)	F.3.7.2.2	F.4.3.6.2.2		×			
Radiation hardness	F.3.7.8	F.4.3.6.8			×		
Externals and construction	F.3.2, F.3.3	F.4.3.3	×	×	×		
Contact resistance	3.3.1 ⁽²⁾	4.3.1.1 ⁽²⁾	×	×	×		
Dielectric withstanding voltage (barometric pressure)	F.3.5.1	F.4.3.4.1.1	×	×	×		
Insulation resistance	F.3.5.2	F.4.3.4.2	×	×	×		
Temperature cycling (II)	F.3.7.3.2	F.4.3.6.3.2	×				
Externals and construction	F.3.2, F.3.3	F.4.3.3	×				
Contact resistance	3.3.1 ⁽²⁾	4.3.1.1 ⁽²⁾	×				
Dielectric withstanding voltage (barometric pressure)	F.3.5.1	F.4.3.4.1.1	×				
Insulation resistance	F.3.5.2	F.4.3.4.2	×				
Temperature life	F.3.8.1	F.4.3.7.1				×	
Low-signal level contact resistance	3.3.2 ⁽²⁾	4.3.1.2 ⁽²⁾				×	
Contact resistance	3.3.1 ⁽²⁾	4.3.1.1 ⁽²⁾				×	
Contact engagement and separation forces	F.3.6.3	F.4.3.5.3				×	
Resistance to corrosive gas	F.3.7.6	F.4.3.6.6					×
Low-signal level contact resistance	3.3.2 ⁽²⁾	4.3.1.2 ⁽²⁾					×

Notes: ⁽¹⁾ The tests identified with the symbol “x” shall be performed.

⁽²⁾ This indicates paragraph number of this specification.

Table 11. Sample Size of Qualification Tests and Quality Conformance Inspection (Group C)

Unit: pair

Connector type	Test group										
	1	2	3	4	5	6	7	8	9	10	11
Wire	1	1	1	20 ⁽¹⁾			1	1	1	1	1
Soldering	1	1			1	1	1	1	1	1	1
Right angle	1	1		20 ⁽¹⁾	1	1					

Notes:

⁽¹⁾ This indicates number of contacts provided for tests. Pin and socket contacts shall be selected from the same lot used in qualification tests.

4.2 Quality Conformance Inspection

Quality conformance inspection shall be performed in accordance with paragraph F.4.2 of Appendix F, JAXA-QTS-2060 and as specified in Tables 8, 10, 12, and 13.

Table 12. Quality Conformance Inspection (Group A)

Test item	Requirement paragraph	Test method paragraph	Criteria for pass/fail	
			No. of samples	No. of defectives allowed
Externals, physical dimensions and marking ⁽¹⁾	F.3.3	F.4.3.3	100%	Less than 10%
Dielectric withstanding voltage (barometric pressure)	F.3.5.1	F.4.3.4.1.1		
Insulation resistance	F.3.5.2	F.4.3.4.2		
Contact resistance	3.3.1 ⁽²⁾	4.3.1.1 ⁽²⁾		
Mating and unmating forces	F.3.6.1	F.4.3.5.1		

Notes: ⁽¹⁾ Visual inspection.

⁽²⁾ This indicates the paragraph number of this specification.

Table 13. Quality Conformance Inspection (Group B)

Unit: pair

Test item	Requirement paragraph	Test method paragraph	Criteria for pass/fail			
			No. of samples	No. of defectives allowed		
Temperature cycling(I)	F.3.7.3	F.4.3.6.3.1	2	0		
Low-signal level contact resistance	3.3.2 ⁽³⁾	4.3.1.2 ⁽³⁾	2	0		
Crimp tensile strength ⁽¹⁾	Wire	26AWG	F.3.6.6	F.4.3.5.6	4 ⁽²⁾	0
	Right angle	25AWG			4 ⁽²⁾	0

Notes:

- (1) Samples for the crimp tensile strength test shall be randomly selected from the same production lot before installed to connectors. The samples shall not be delivered as products.
- (2) This indicates number of wires or solid wires.
- (3) This indicates paragraph number of this specification.

4.3 Test Method

Test method shall be in accordance with paragraph F.4.3 of JAXA-QTS-2060 and paragraphs 4.3.1.1 and 4.3.1.2 of this specification.

4.3.1 Electrical Performance

Electrical performance tests of connectors shall be performed in accordance with following methods.

4.3.1.1 Contact Resistance

Mated connectors shall be tested as follows. Test circuit for contact resistance is shown in Figure-1.

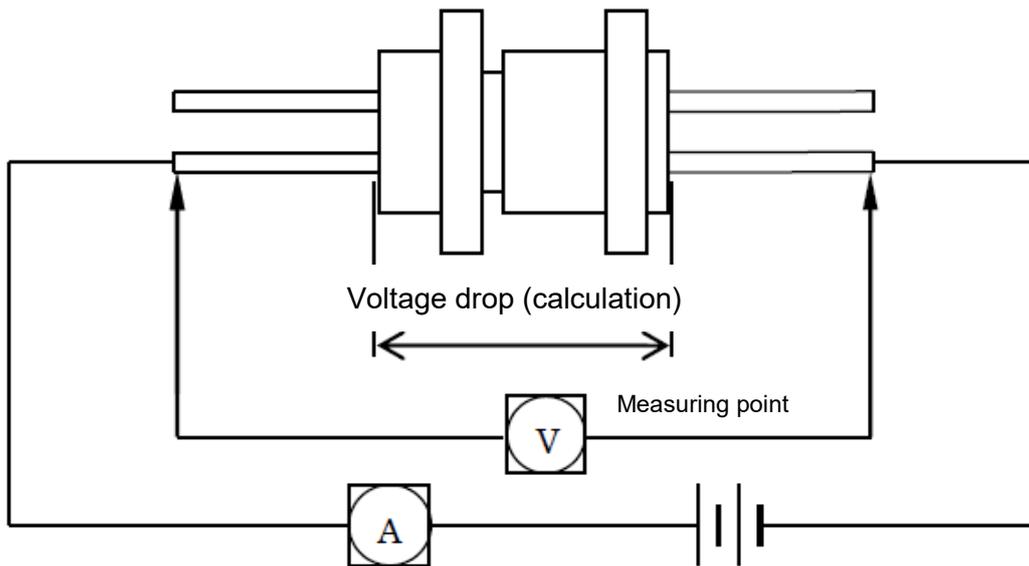


Figure-1 Test Circuit for Contact Resistance

- a) Test current: shown in Table 8.
- b) Contacts equal to or more than 20% of contact arrangement of mated connectors (7 pairs as a minimum) shall be tested.
- c) After applying specified current to contacts at ambient temperature $25^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and contact temperature is stabilized, voltage drop for each mated contacts within specified range (Figure-1) shall be measured.
- d) Contacts shall be mated completely.
- e) Voltage drop shall be calculated by subtracting wire resistance value from measured value between wire ends.

4.3.1.2 Low-Signal Level Contact Resistance

Mated connectors shall be tested in accordance with test method 3002 of MIL-STD-1344. Furthermore, following conditions shall be applied:

- a) Connectors shall be mated to the same depth as common use and voltage drop shall be measured within specified range (Figure-1).
- b) Voltage drop shall be calculated by subtracting wire resistance value from measured value between wire ends.

4.4 Long-Term Storage

The long-term storage shall be in accordance with paragraph F.4.4 of JAXA-QTS-2060.

4.5 Change to Tests and Inspections

Changes to JAXA-QTS-2060, appendix F are as follows:

- a) Contact resistance
(Changed content) Only connectors not including wires shall be tested (refer to paragraph 4.3.1.1 herein). Requirements are shown in Table 8.
(Reason for change) To evaluate resistance value at contact point more accurate without being affected by wire conductive resistance. And to unify standards regardless of termination style.
- b) Low-signal level contact resistance
(Changed content) Only connectors not including wires shall be tested (refer to paragraph 4.3.1.2 herein). Requirements are shown in Table 9.
(Reason for change) To evaluate resistance value at contact point more accurate without being affected by wire conductive resistance. And to unify standards regardless of termination style.

5. PREPARATION FOR DELIVERY

Preparation for delivery shall be in accordance with paragraph F.5, Appendix F of JAXA-QTS-2060.

5.1 Packaging

Packaging shall be as follows:

- a) Mating sections of connectors shall be covered with dust caps. Termination style "R" connectors shall be packed not to cause deformation or damage of contacts during transportation. Each product shall be put in a clear polyethylene bag and heat shall be applied to seal.
- b) As for connectors terminated with ETFE insulated wire, the connectors packed in unsealed containers shall be protected using air cap, etc. When the connectors are protected, air vent shall be provided. Each tag, which shows product name, necessary information and contents shown in paragraph 6.1 of JAXA-QTS-2060, shall be attached on the easily identified packaging areas respectively.
- c) Each sealed connector with tags showing product name, necessary information and precautions shall be repackaged respectively.

5.2 Marking on Package

Marking on package shall be in accordance with paragraph 5.2 of JAXA-QTS-2060.

6. NOTES

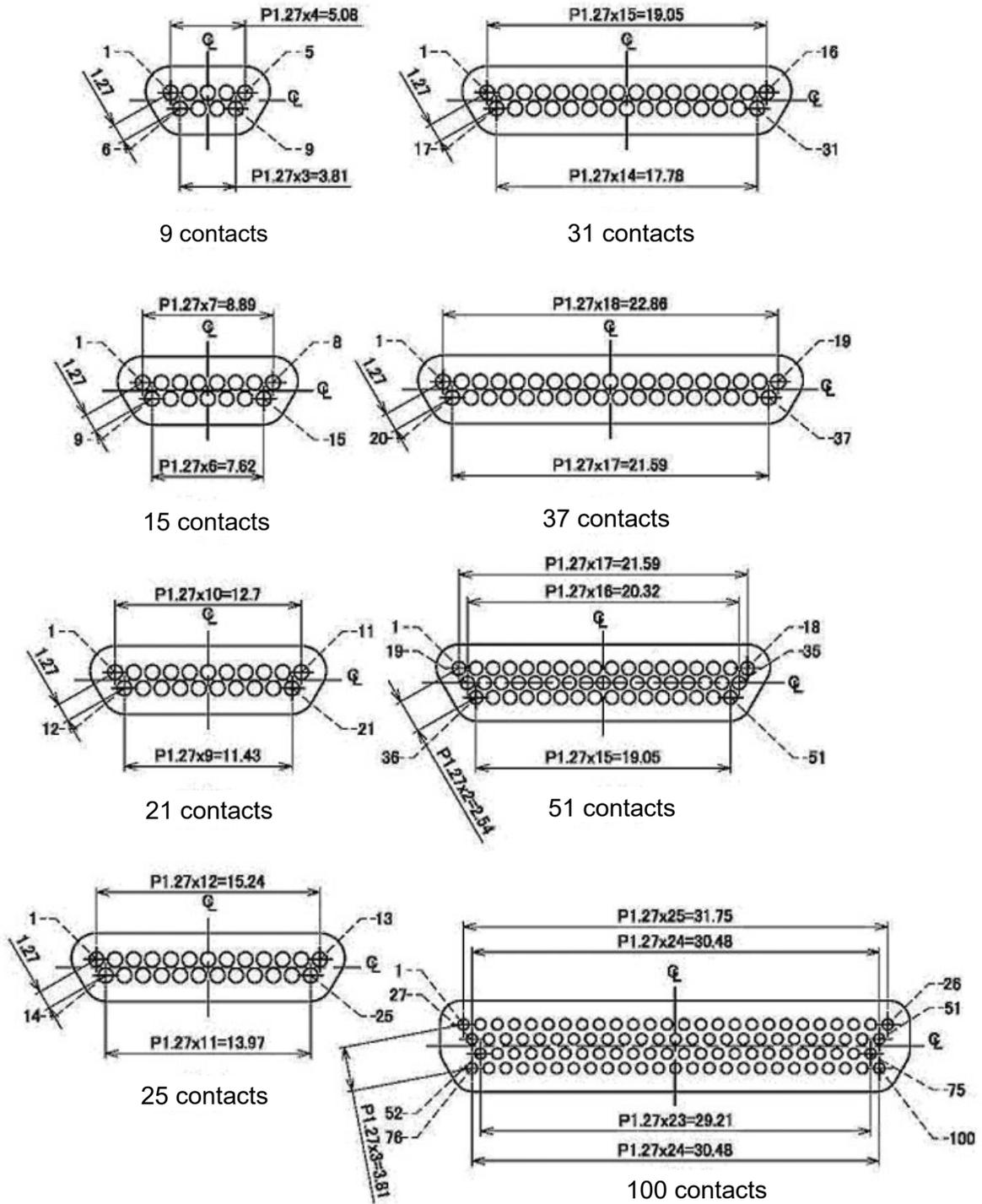
Notes shall be as follows and as specified in paragraph F.6, Appendix F of JAXA-QTS-2060.

6.1 Notes for Purchaser

6.1.1 Items to be Specified for Procurement

To purchase wire type connectors manufactured in compliance with this specification, purchaser shall specify wire type and wire length. And to purchase right-angle type connectors manufactured in compliance with this specification, purchaser shall specify orientation of mating direction, terminal bending position and terminal length.

Unit: mm

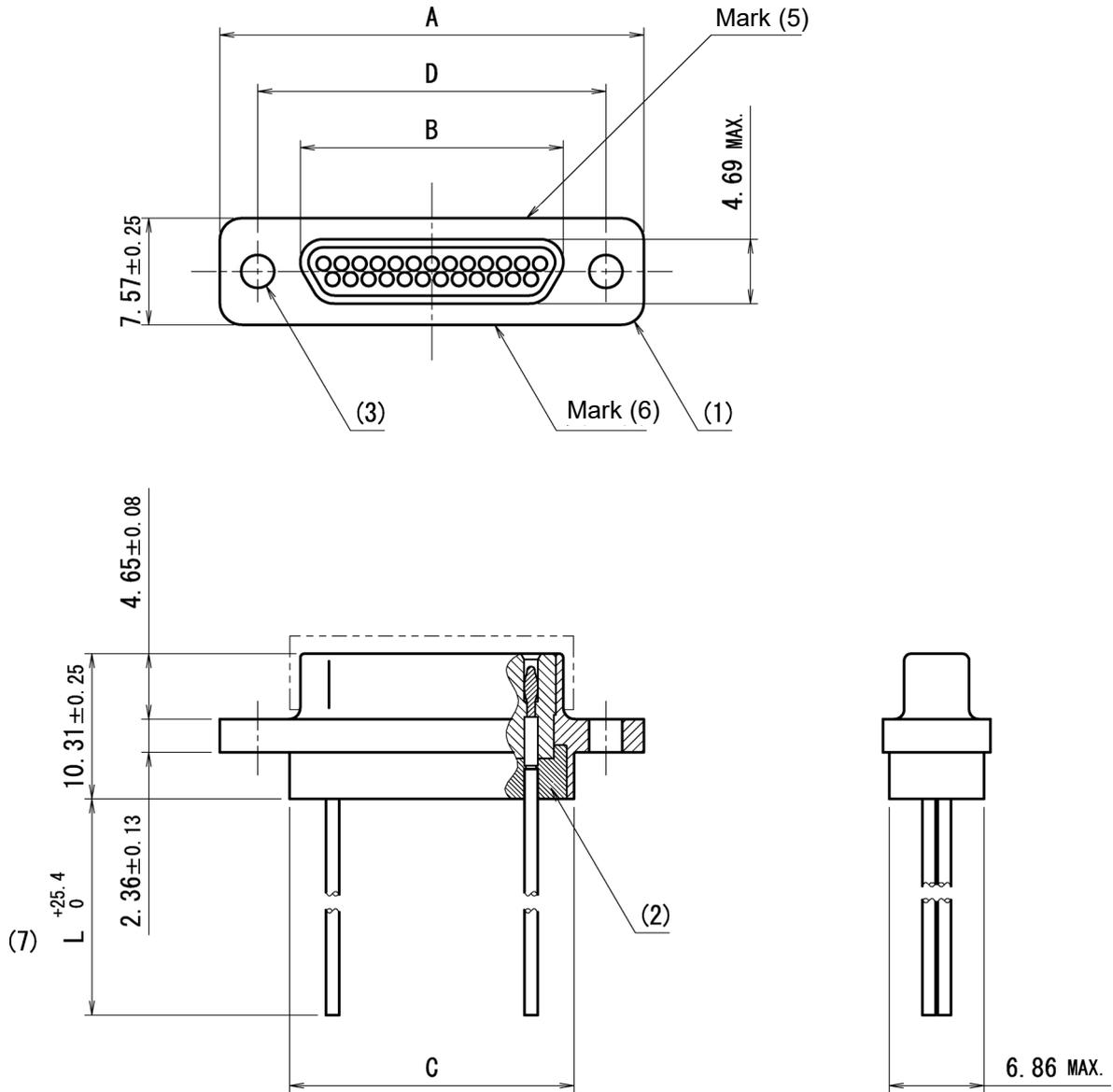


Notes: (1) Engaging face of pin insert shown.

(2) Left and right of contact position numbers are reversed for socket contacts.

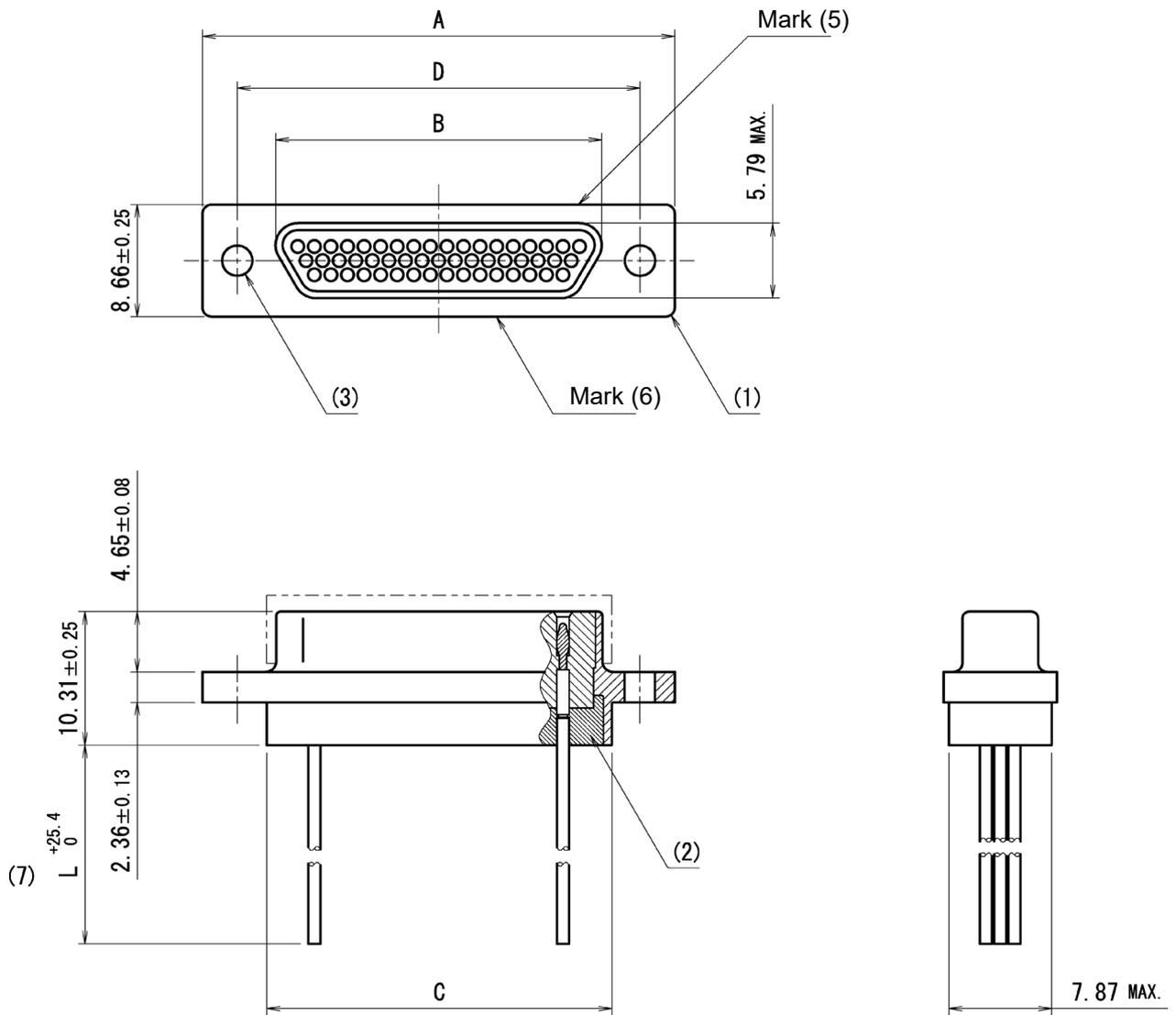
Supplementary Figure F-1. Contact Arrangement

Unit: mm



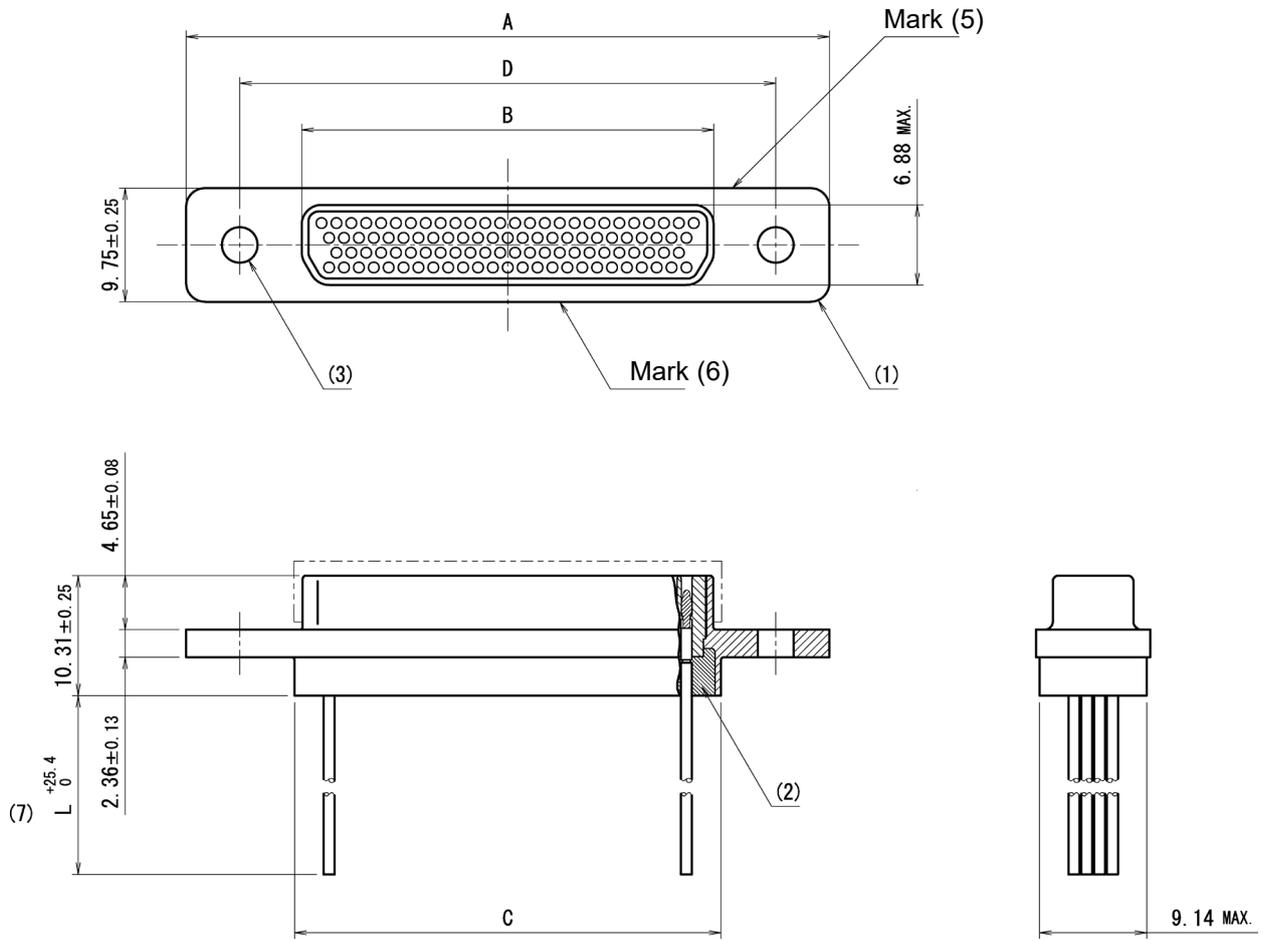
Supplementary Figure F-2. Wire Type Pin Connectors (9 to 37 contacts) (1/4)

Unit: mm



Supplementary Figure F-2. Wire Type Pin Connectors (51 contacts) (2/4)

Unit: mm



Supplementary Figure F-2. Wire Type Pin Connectors (100 contacts) (3/4)

Unit: mm

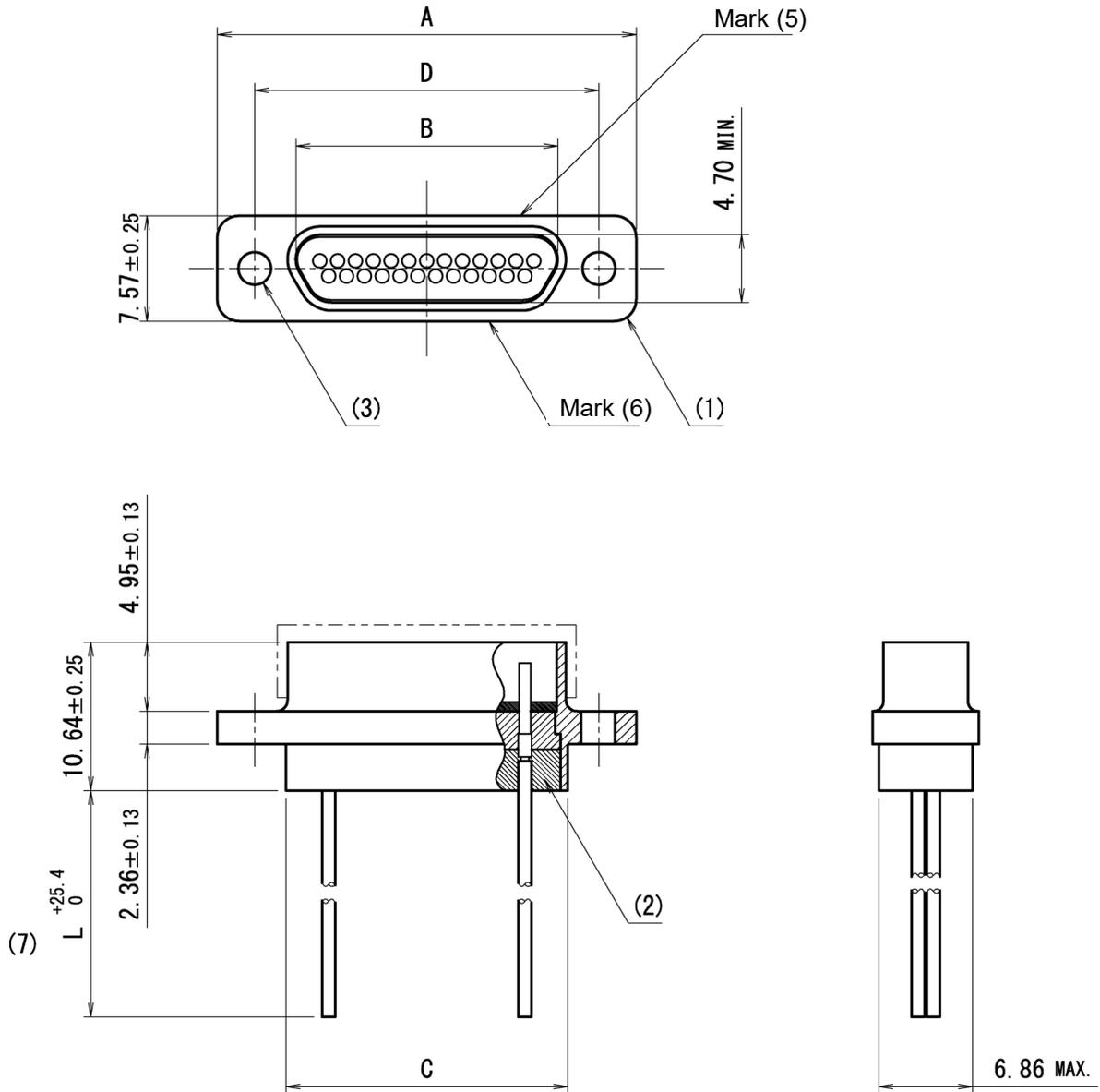
Part number ⁽⁴⁾	Contact arrangement	Physical dimensions			
		A	B max.	C	D±0.13
		±0.25		+0.25 -0.46	
JD115-9P-W**	9	19.68	8.48	9.91	14.35
JD115-15P-W**	15	23.50	12.29	13.72	18.16
JD115-21P-W**	21	27.30	16.10	17.53	21.97
JD115-25P-W**	25	29.84	18.64	20.07	24.51
JD115-31P-W**	31	33.66	22.45	23.88	28.32
JD115-37P-W**	37	37.46	26.26	27.69	32.13
JD115-51P-W**	51	36.20	24.99	26.42	30.86
JD115-100P-W**	100	54.86	35.15	36.37	45.72

Notes:

- (1) Shells shall be reasonably rounded.
- (2) Wiring shall be fixed with filler.
- (3) Designated accessories shall be attachable.
- (4) Part number shall be in accordance with paragraph 1.2.
- (5) Part number shall be shown.
- (6) ITT, year and week manufactured, and production lot number shall be shown.
- (7) L indicates wire length and L shall be designated by the purchaser.

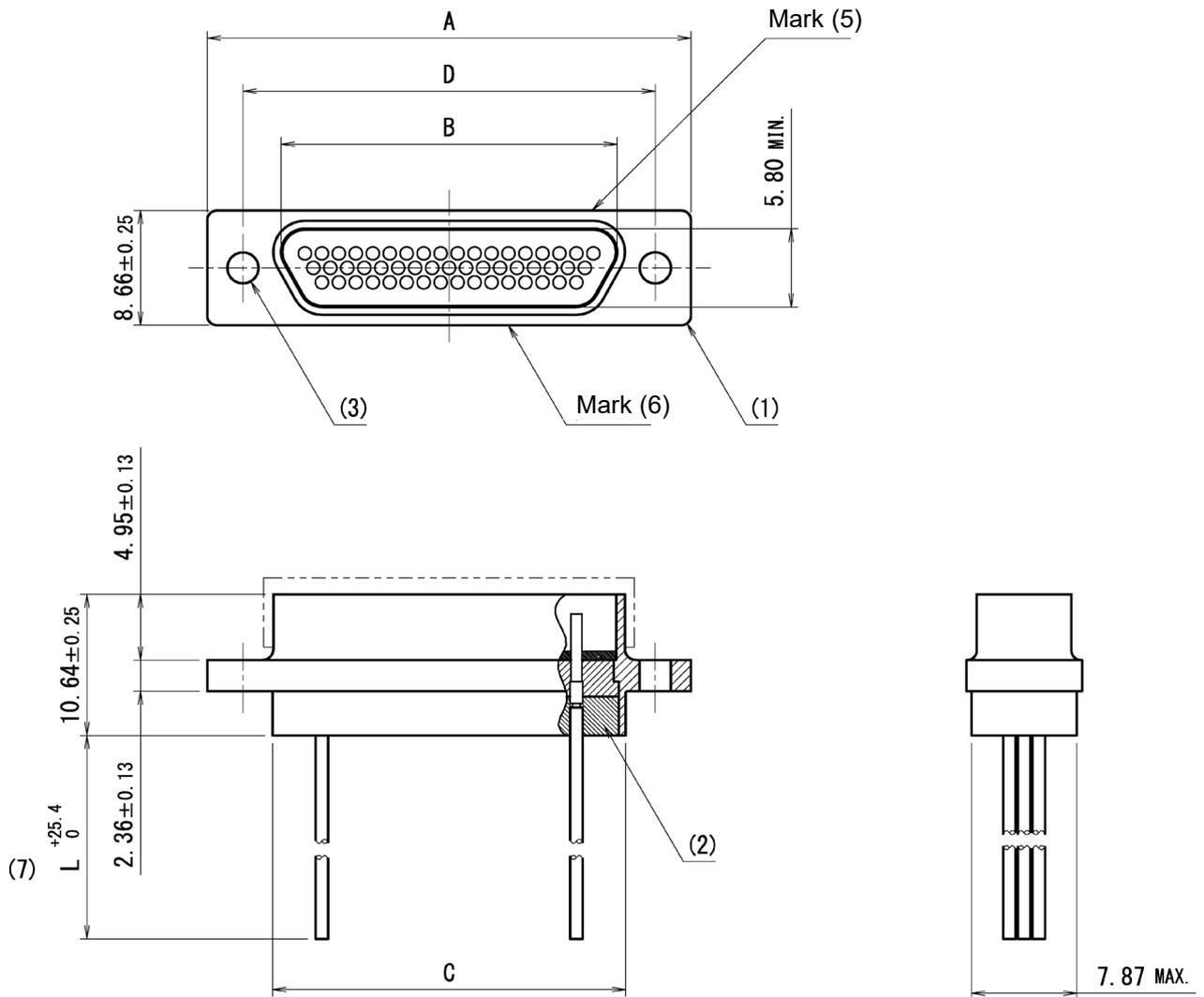
Supplementary Figure F-2. Wire Type Pin Connectors (4/4)

Unit: mm



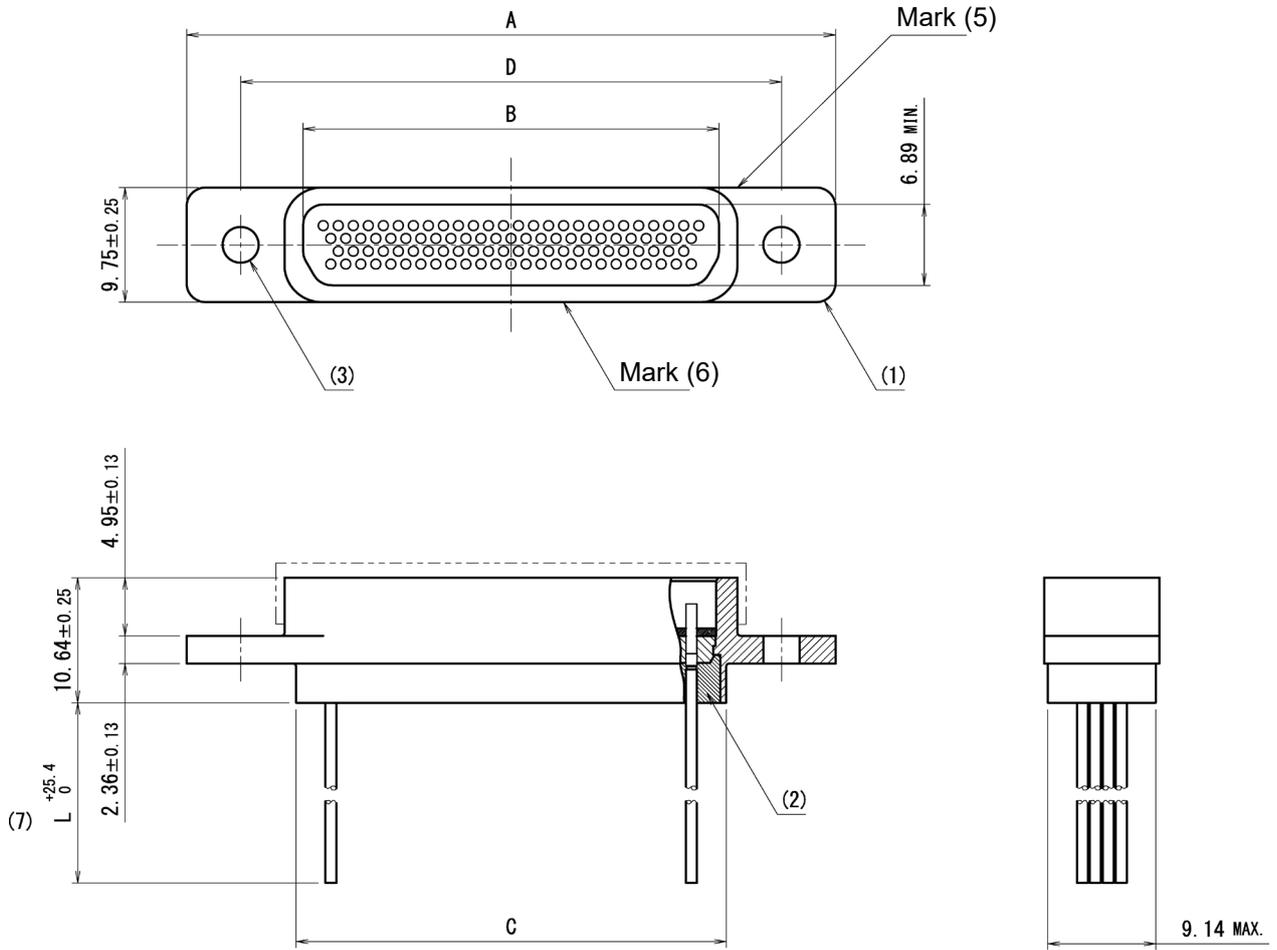
Supplementary Figure F-3. Wire Type Socket Connectors (9 to 37contacts) (1/4)

Unit: mm



Supplementary Figure F-3. Wire Type Socket Connectors (51 contacts) (2/4)

Unit: mm



Supplementary Figure F-3. Wire Type Socket Connectors (100 contacts) (3/4)

Unit: mm

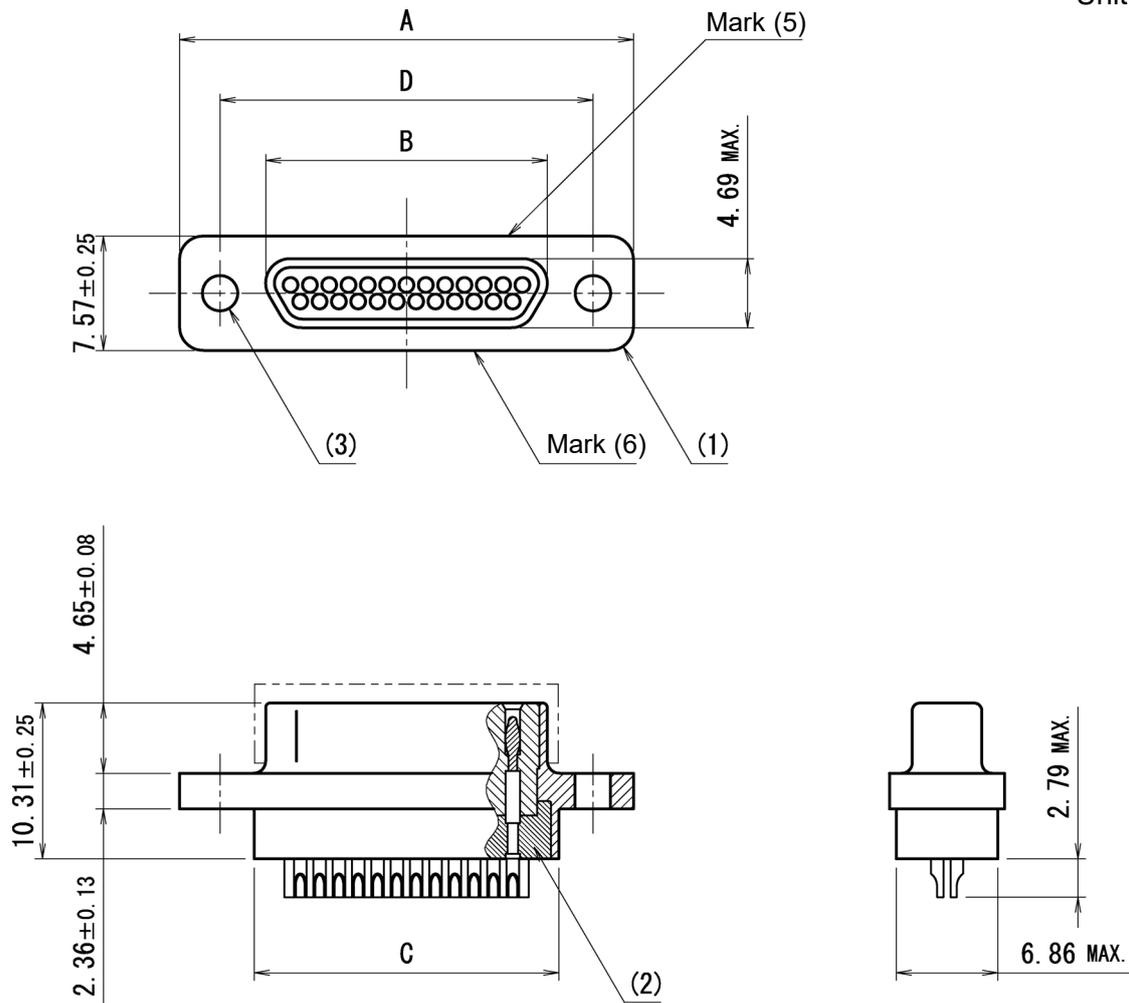
Part number ⁽⁴⁾	Contact arrangement	Physical dimensions			
		A	B min.	C	D ± 0.13
		±0.25		+0.25 -0.46	
JD115-9S-W**	9	19.68	8.49	9.91	14.35
JD115-15S-W**	15	23.50	12.30	13.72	18.16
JD115-21S-W**	21	27.30	16.11	17.53	21.97
JD115-25S-W**	25	29.84	18.65	20.07	24.51
JD115-31S-W**	31	33.66	22.46	23.88	28.32
JD115-37S-W**	37	37.46	26.27	27.69	32.13
JD115-51S-W**	51	36.20	25.00	26.42	30.86
JD115-100S-W**	100	54.86	35.16	36.37	45.72

Notes:

- (1) Shells shall be reasonably rounded.
- (2) Wiring shall be fixed with filler.
- (3) Designated accessories shall be attachable.
- (4) Part number shall be in accordance with paragraph 1.2.
- (5) Part number shall be shown.
- (6) ITT, year and week manufactured, and production lot number shall be shown.
- (7) L indicates wire length and L shall be designated by the purchaser.

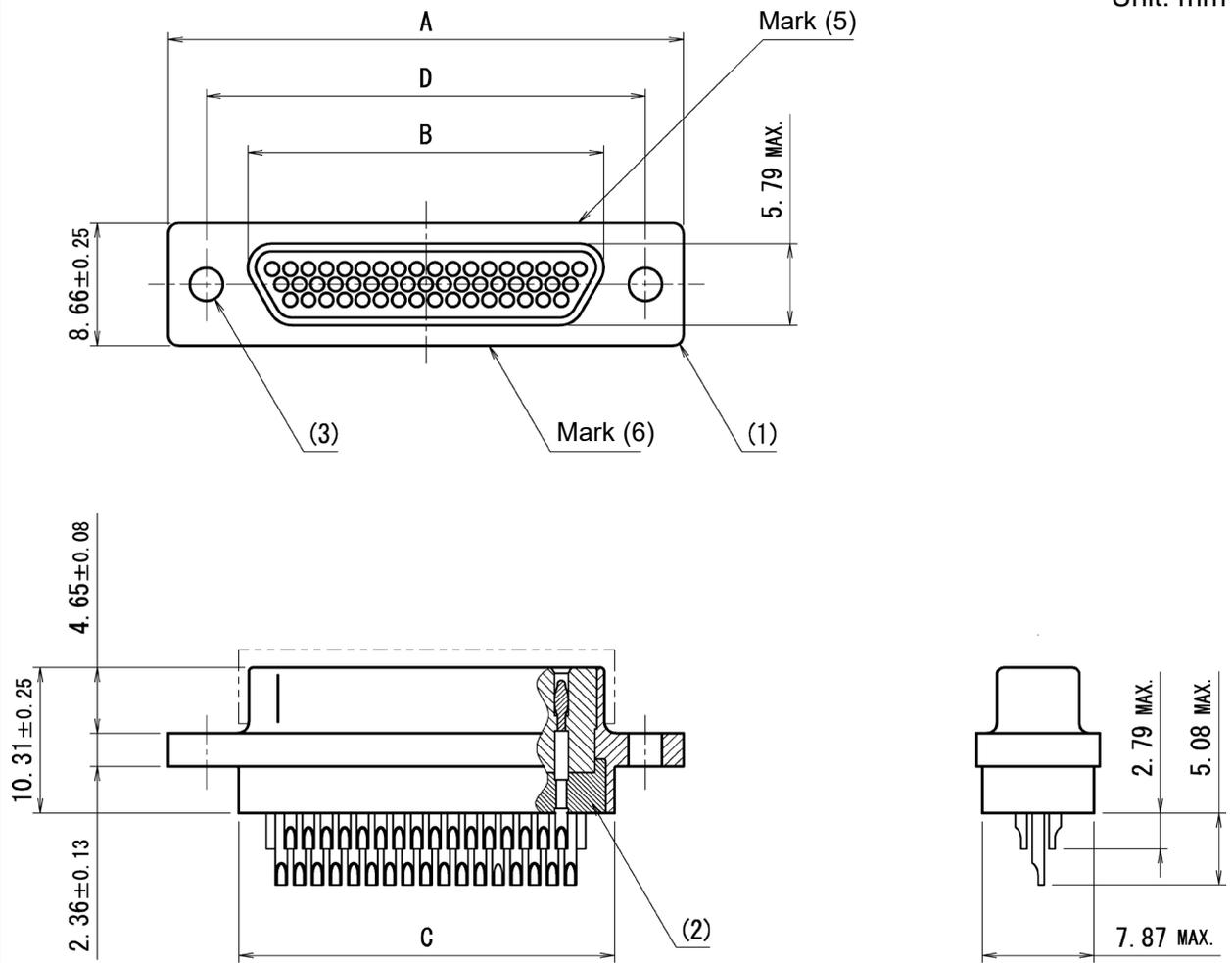
Supplementary Figure F-3. Wire Type Socket Connectors (4/4)

Unit: mm



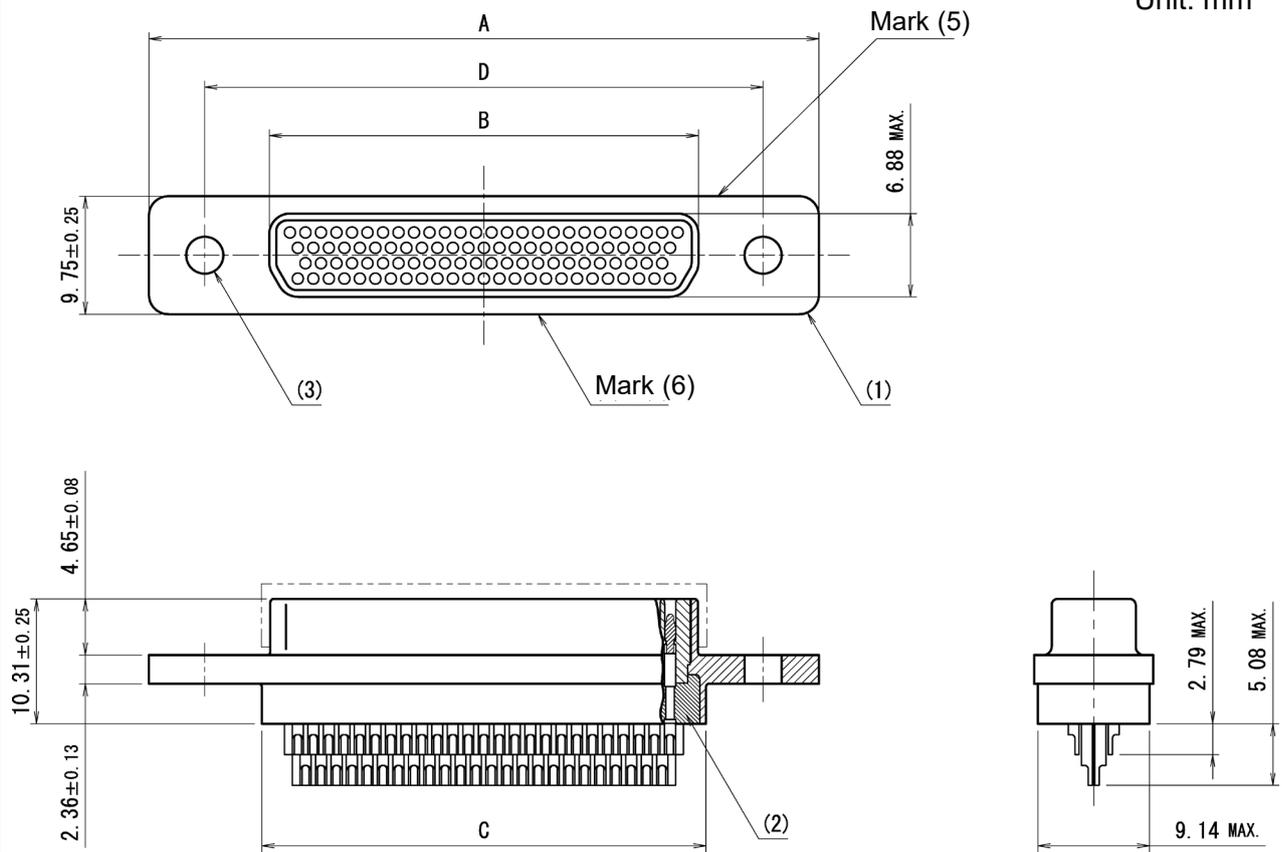
Supplementary Figure F-4. Soldering Type Pin Connectors (9 to 37 contacts) (1/4)

Unit: mm



Supplementary Figure F-4. Soldering Type Pin Connectors (51 contacts) (2/4)

Unit: mm



Supplementary Figure F-4. Soldering Type Pin Connectors (100 contacts) (3/4)

Unit: mm

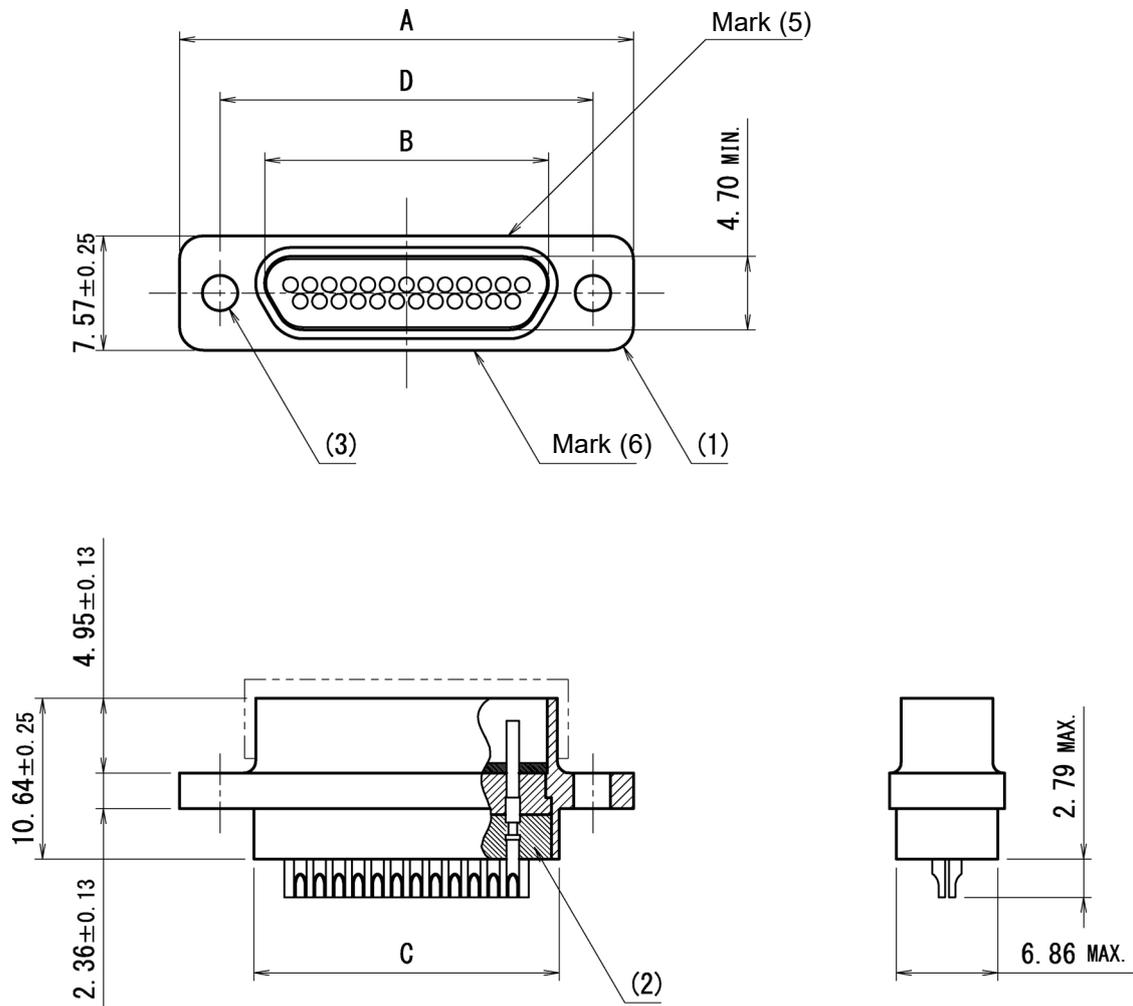
Part number ⁽⁴⁾	Contact arrangement	Physical dimensions			
		A	B max.	C	D±0.13
		±0.25		+0.25 -0.46	
JD115-9P-S**	9	19.68	8.48	9.91	14.35
JD115-15P-S**	15	23.50	12.29	13.72	18.16
JD115-21P-S**	21	27.30	16.10	17.53	21.97
JD115-25P-S**	25	29.84	18.64	20.07	24.51
JD115-31P-S**	31	33.66	22.45	23.88	28.32
JD115-37P-S**	37	37.46	26.26	27.69	32.13
JD115-51P-S**	51	36.20	24.99	26.42	30.86
JD115-100P-S**	100	54.86	35.15	36.37	45.72

Notes:

- (1) Shells shall be reasonably rounded.
- (2) Wiring shall be fixed with filler.
- (3) Designated accessories shall be attachable.
- (4) Part number shall be in accordance with paragraph 1.2.
- (5) Part number shall be shown.
- (6) ITT, year and week manufactured, and production lot number shall be shown.

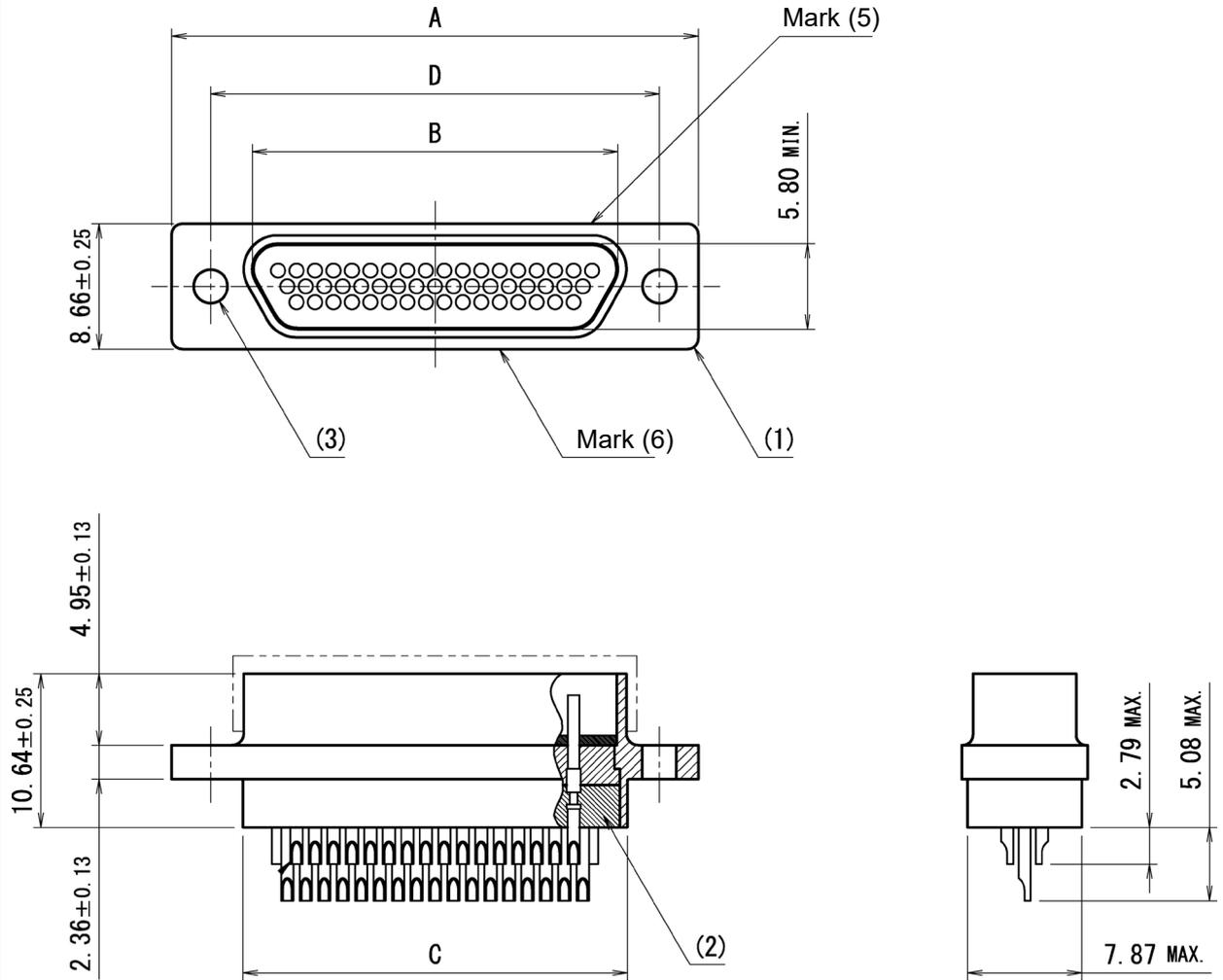
Supplementary Figure F-4. Soldering Type Pin Connectors (4/4)

Unit: mm



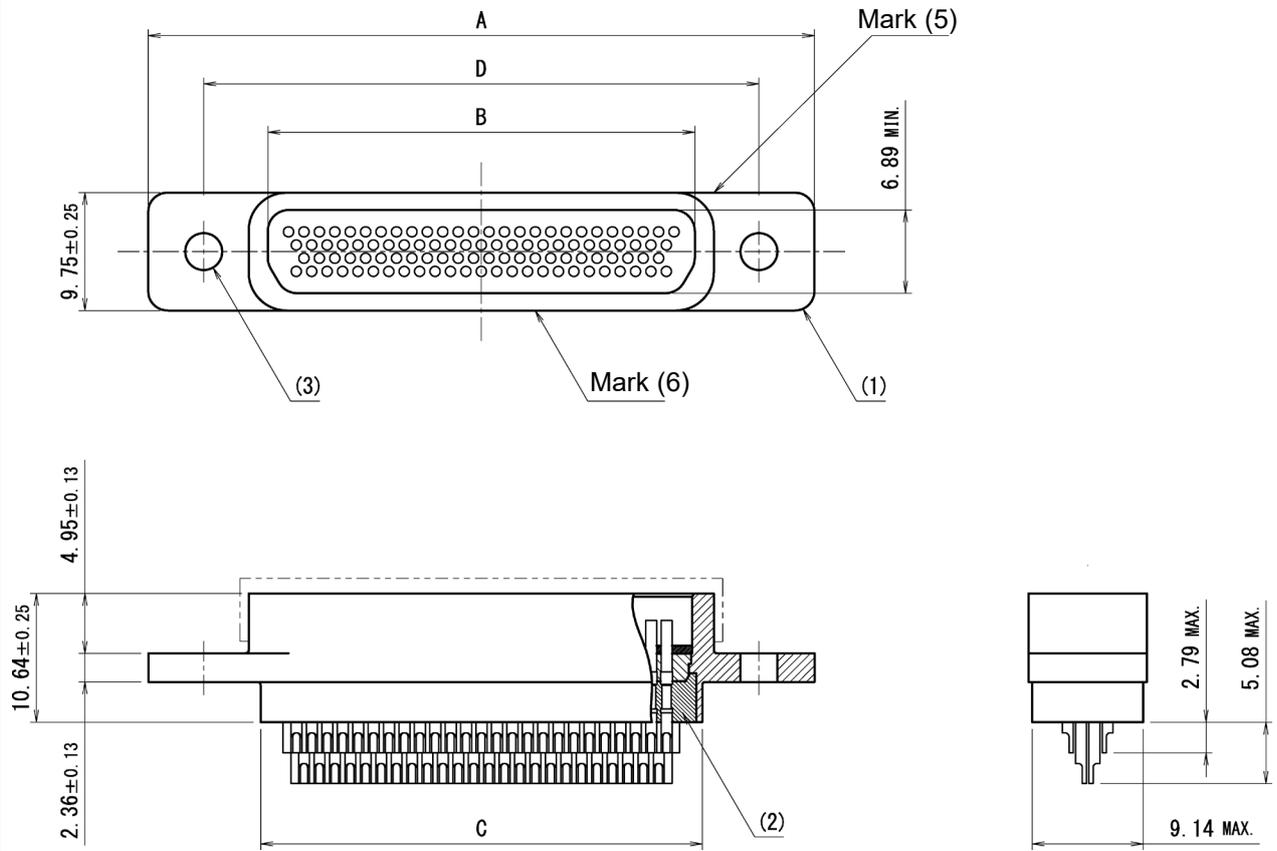
Supplementary Figure F-5. Soldering Type Socket Connectors (9 to 37 contacts) (1/4)

Unit: mm



Supplementary Figure F-5. Soldering Type Socket Connectors (51 contacts) (2/4)

Unit: mm



Supplementary Figure F-5. Soldering Type Socket Connectors (100 contacts) (3/4)

Unit: mm

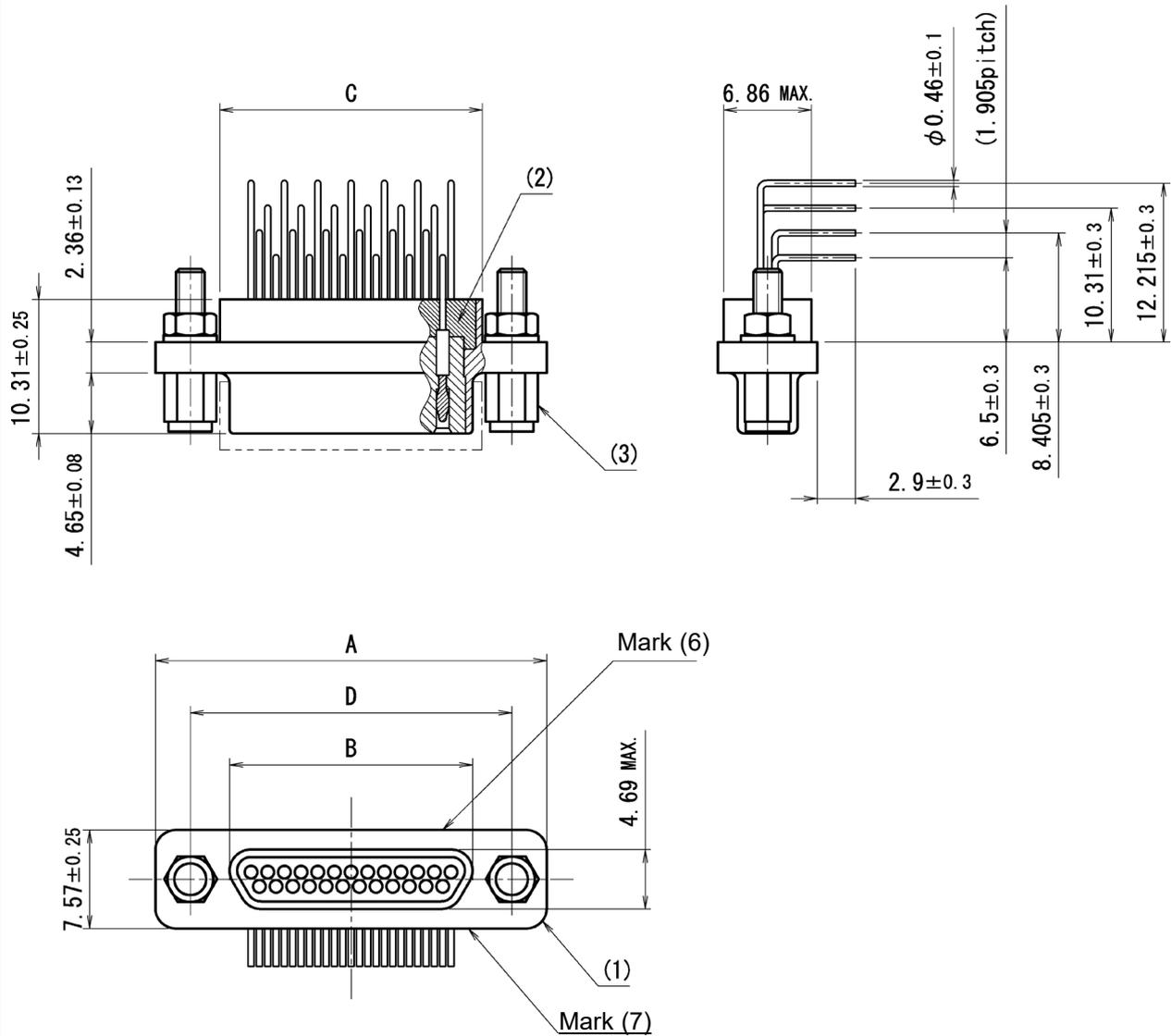
Part number ⁽⁴⁾	Contact arrangement	Physical dimensions			
		A	B min.	C	D±0.13
		±0.25		+0.25 -0.46	
JD115-9S-S**	9	19.68	8.49	9.91	14.35
JD115-15S-S**	15	23.50	12.30	13.72	18.16
JD115-21S-S**	21	27.30	16.11	17.53	21.97
JD115-25S-S**	25	29.84	18.65	20.07	24.51
JD115-31S-S**	31	33.66	22.46	23.88	28.32
JD115-37S-S**	37	37.46	26.27	27.69	32.13
JD115-51S-S**	51	36.20	25.00	26.42	30.86
JD115-100S-S**	100	54.86	35.16	36.37	45.72

Notes:

- (1) Shells shall be reasonably rounded.
- (2) Wiring shall be fixed with filler.
- (3) Designated accessories shall be attachable.
- (4) Part number shall be in accordance with paragraph 1.2.
- (5) Part number shall be shown.
- (6) ITT, year and week manufactured, and production lot number shall be shown.

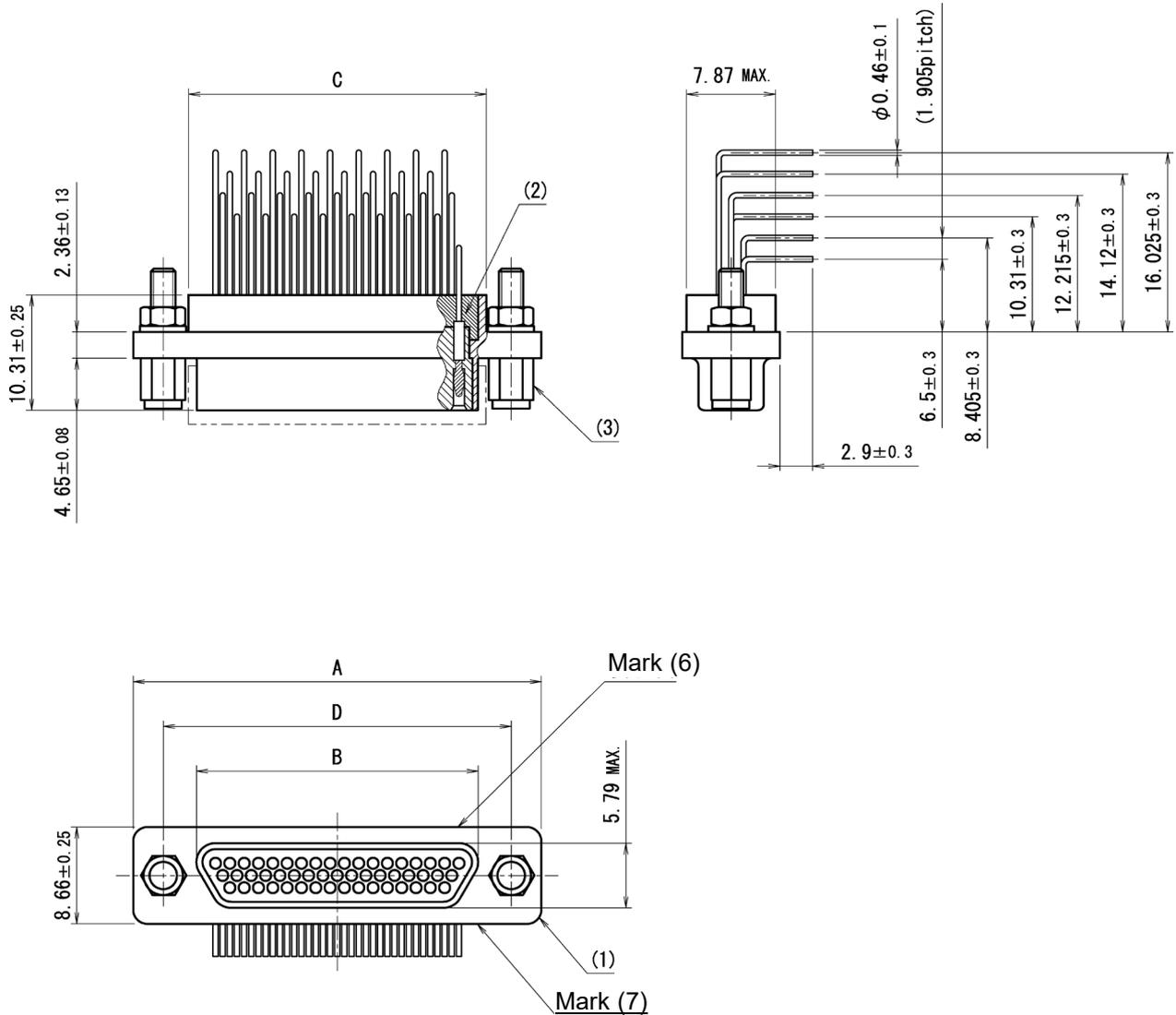
Supplementary Figure F-5. Soldering Type Socket Connectors (4/4)

Unit: mm



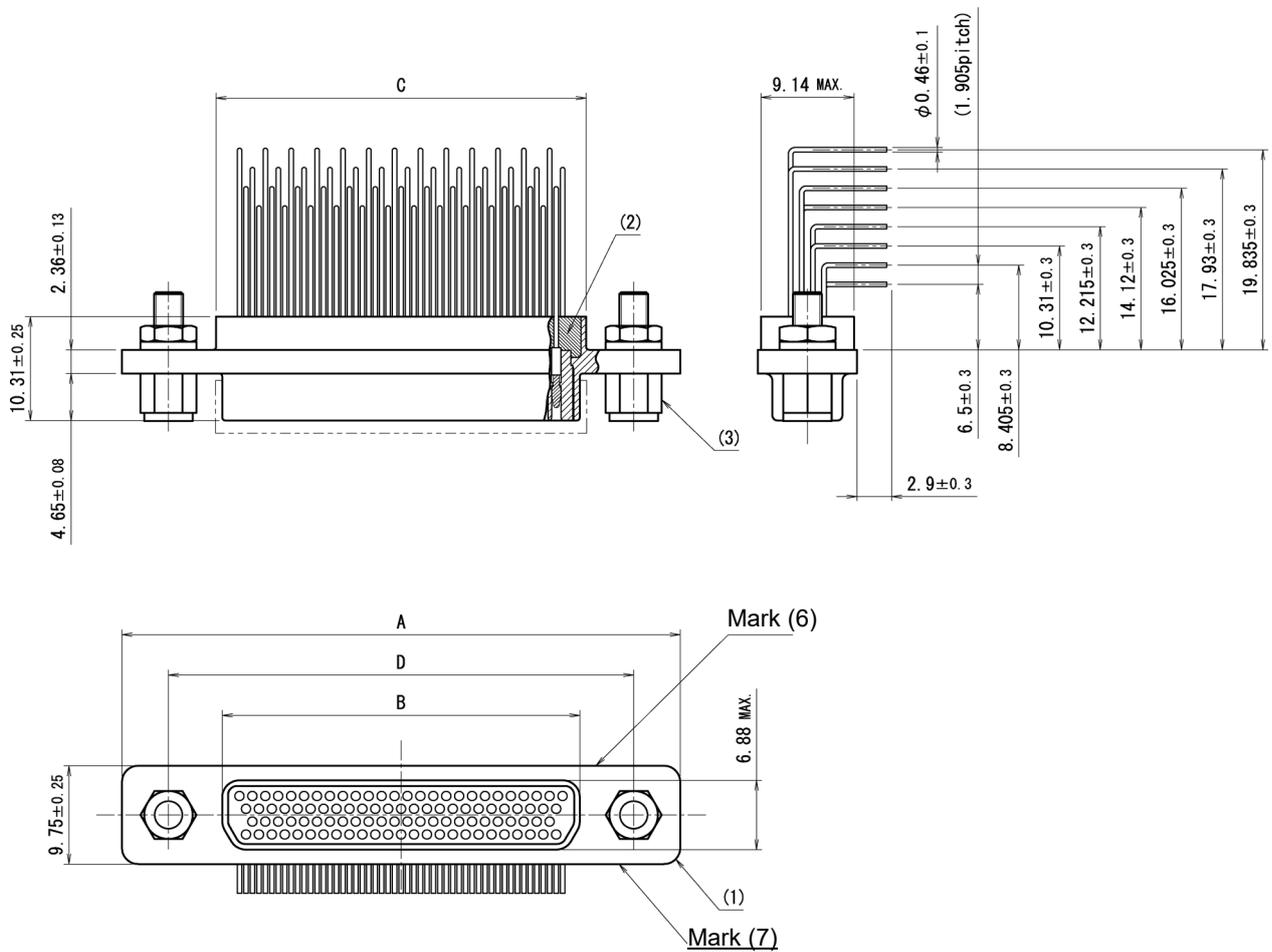
**Supplementary Figure F-6. Right Angle Standard Type Pin Connectors
(9, 15, 25 and 37 contacts) (1/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

Unit: mm



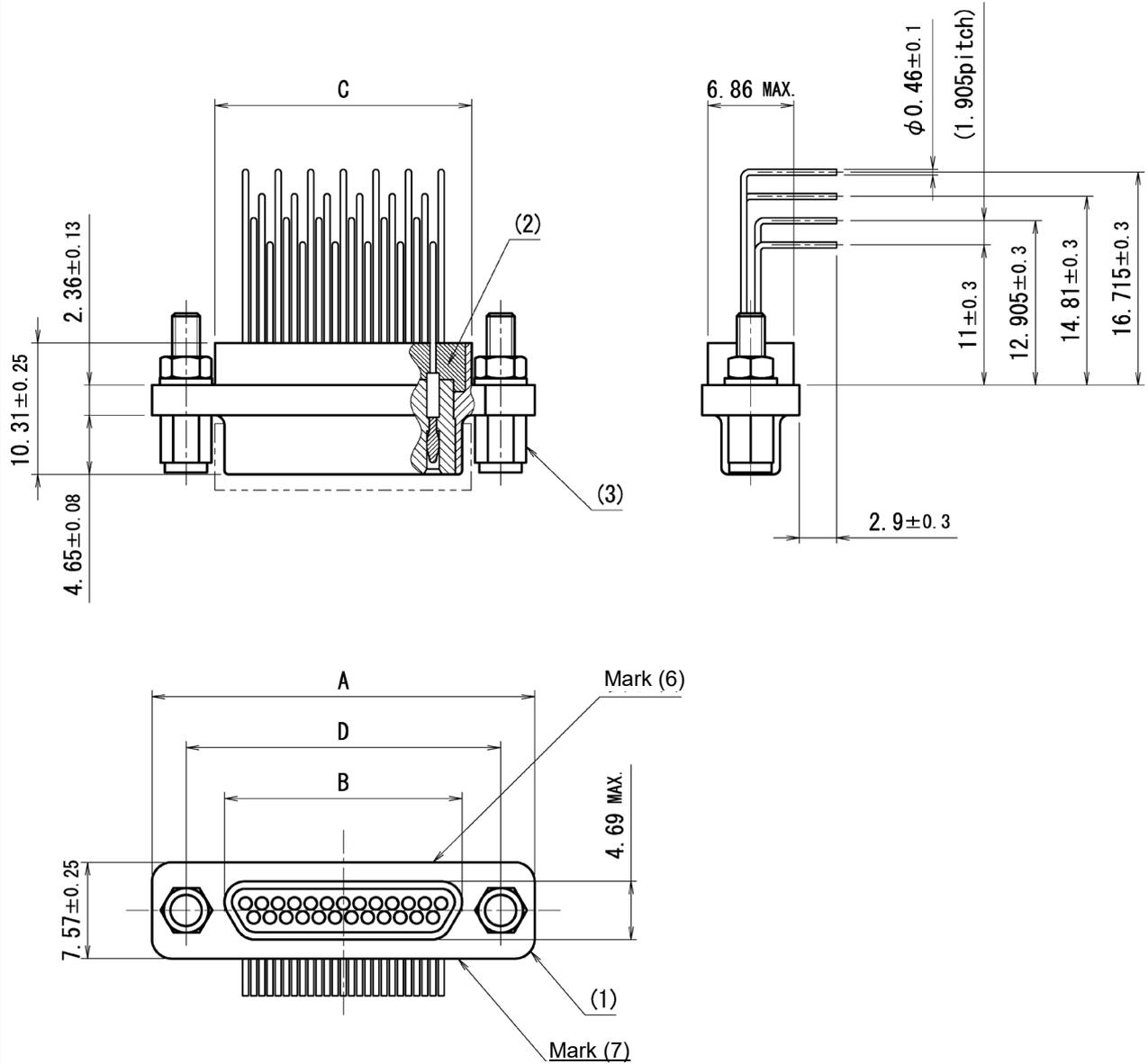
**Supplementary Figure F-6. Right Angle Standard Type Pin Connectors
(51 contacts) (2/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

Unit: mm



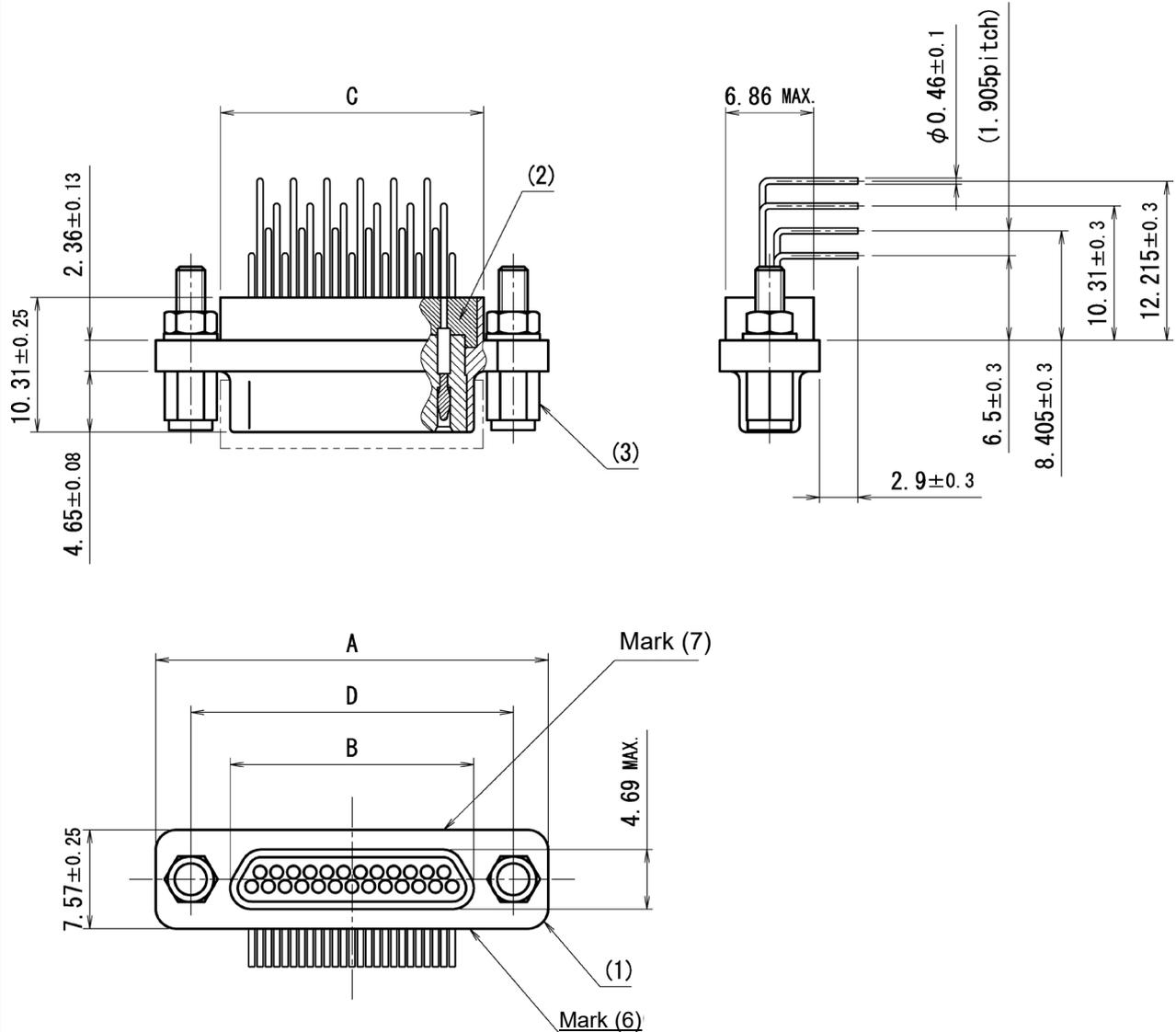
**Supplementary Figure F-6. Right Angle Standard Type Pin Connectors
(100 contacts) (3/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

Unit: mm



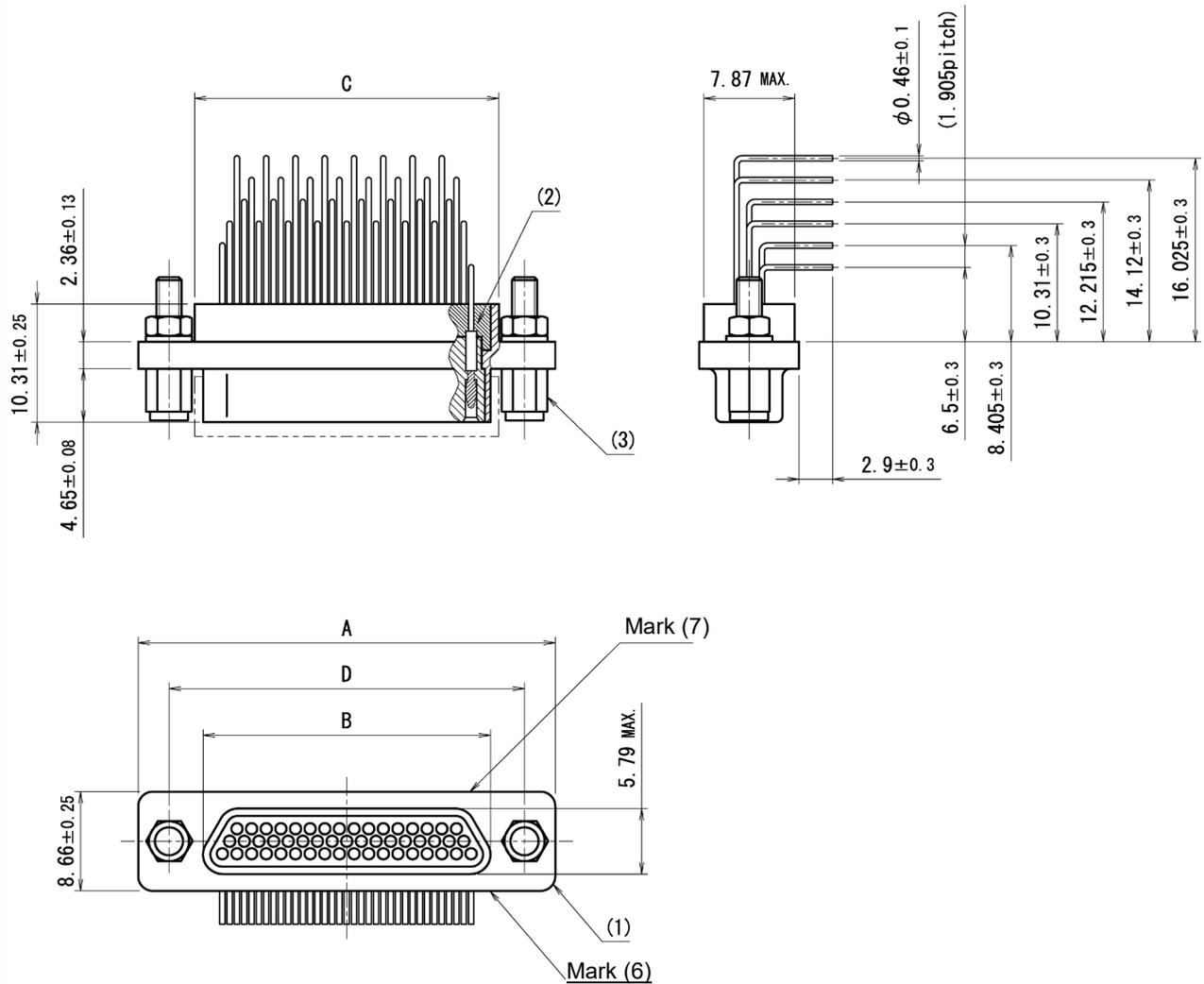
**Supplementary Figure F-6. Right Angle Standard Type Pin Connectors
(9, 15, 25 and 37 contacts) (4/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 11mm)**

Unit: mm



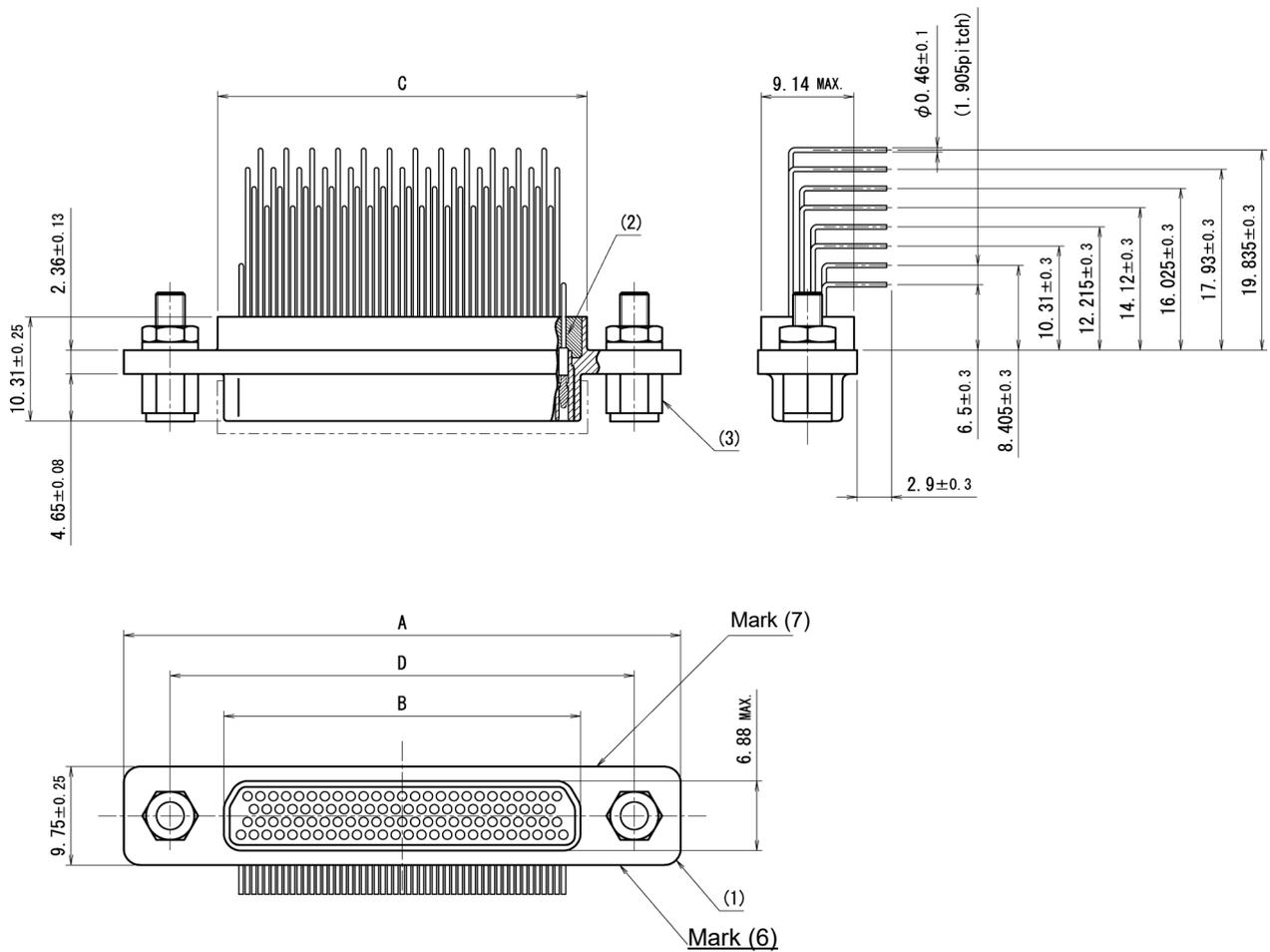
**Supplementary Figure F-6. Right Angle Reverse Type Pin Connectors
(9, 15, 25 and 37 contacts) (5/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

Unit: mm



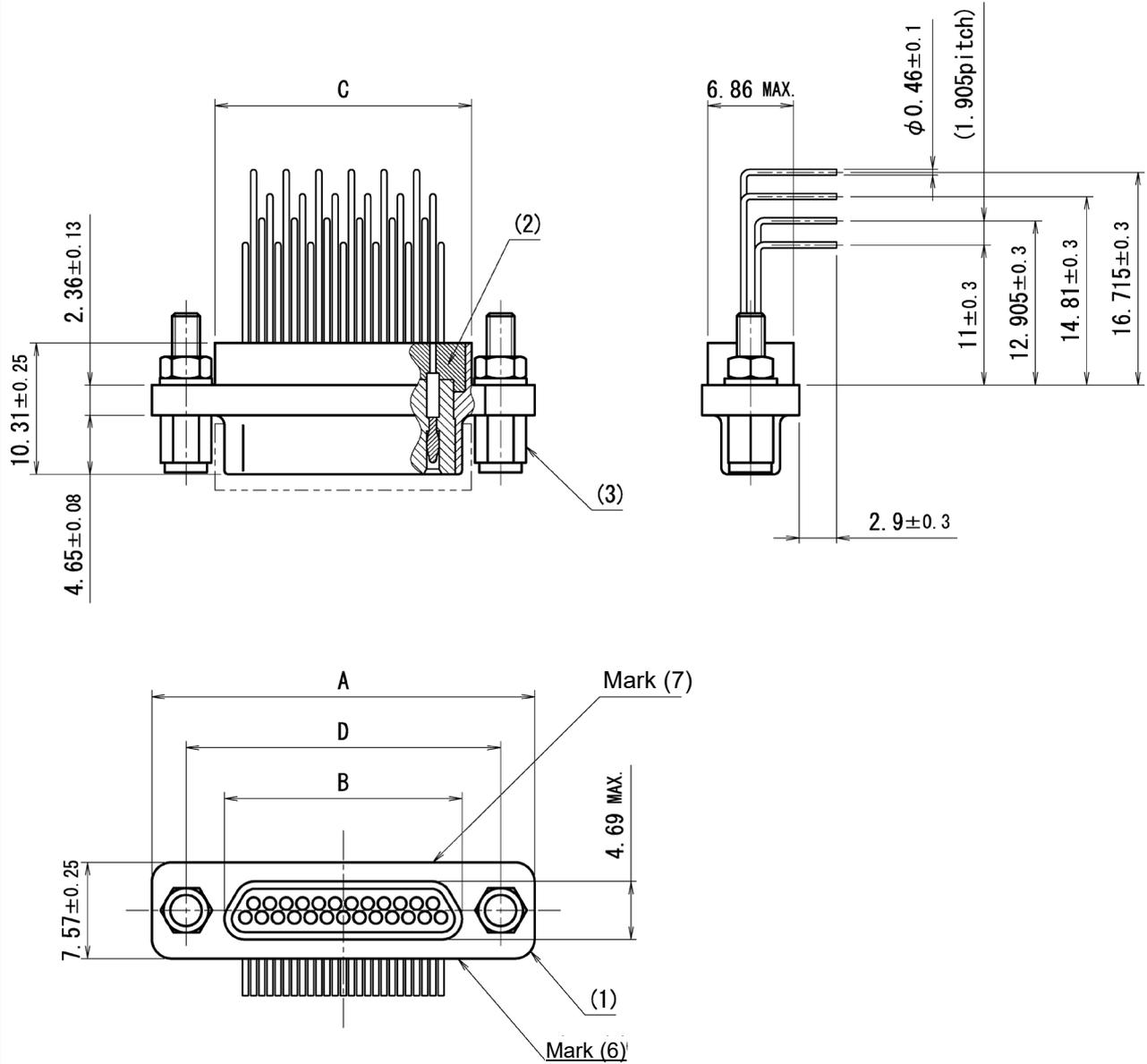
**Supplementary Figure F-6. Right Angle Reverse Type Pin Connectors
(51 contacts) (6/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

Unit: mm



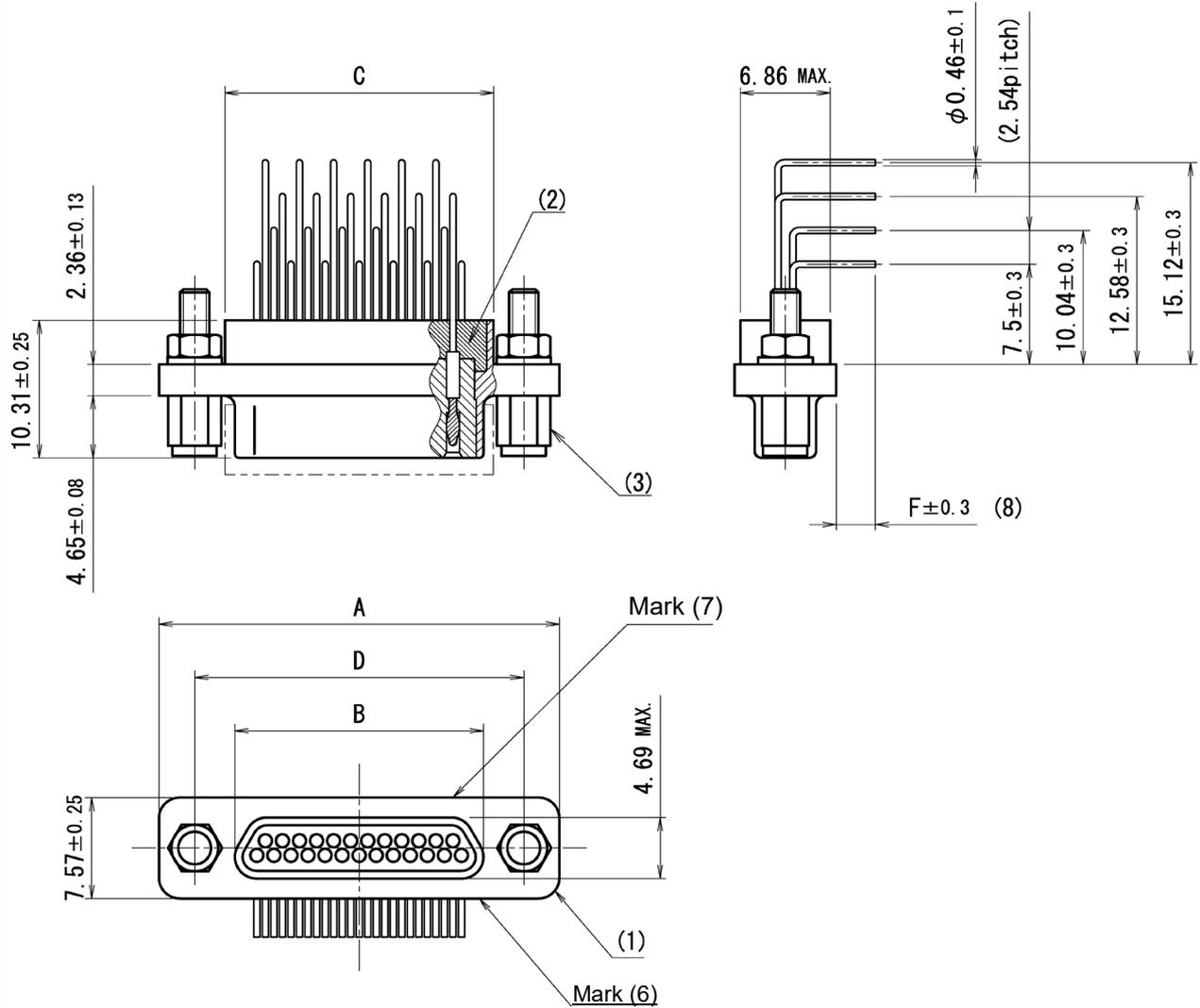
**Supplementary Figure F-6. Right Angle Reverse Type Pin Connectors
(100 contacts) (7/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

Unit: mm



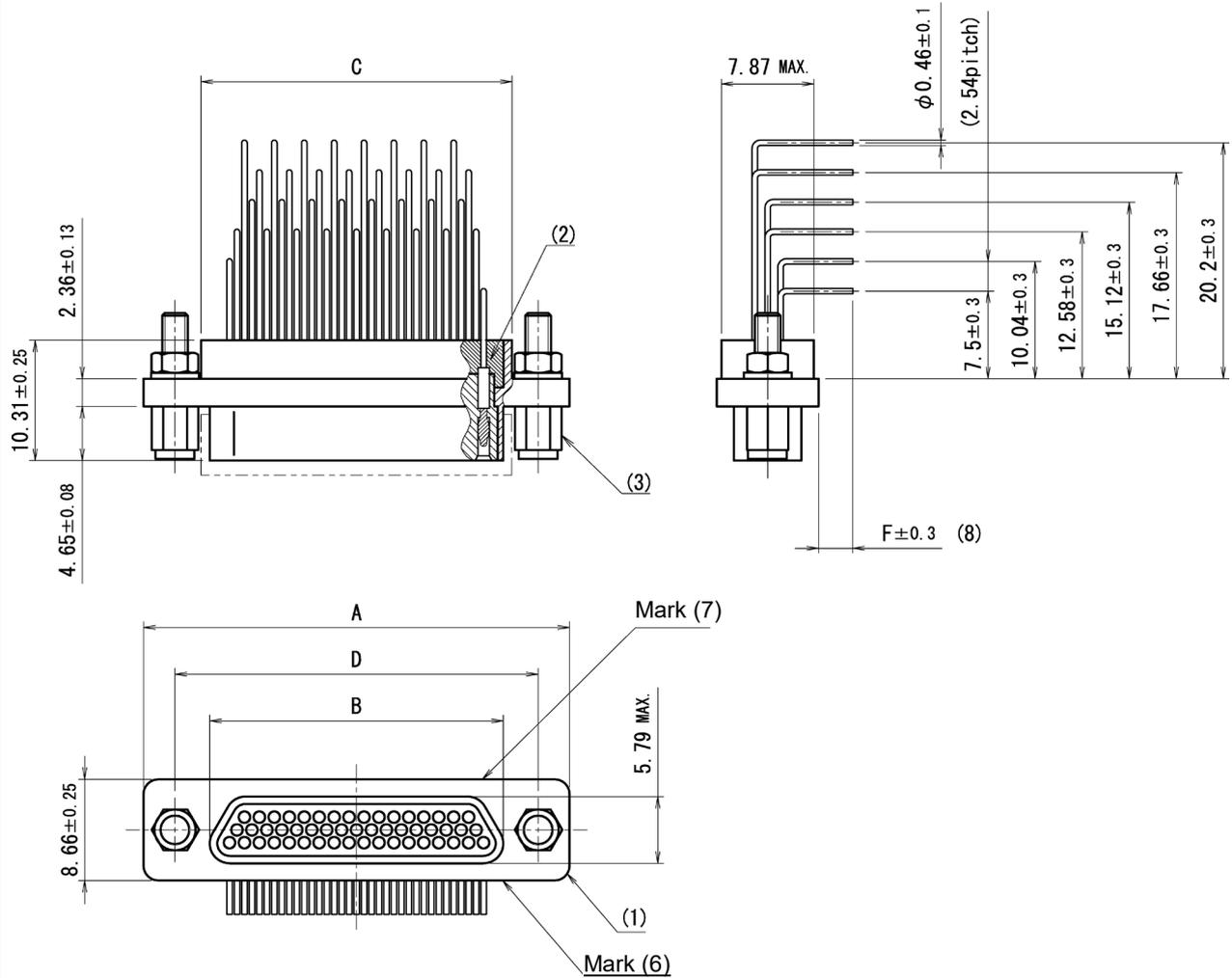
**Supplementary Figure F-6. Right Angle Reverse Type Pin Connectors
(9, 15, 25 and 37 contacts) (8/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 11mm)**

Unit: mm



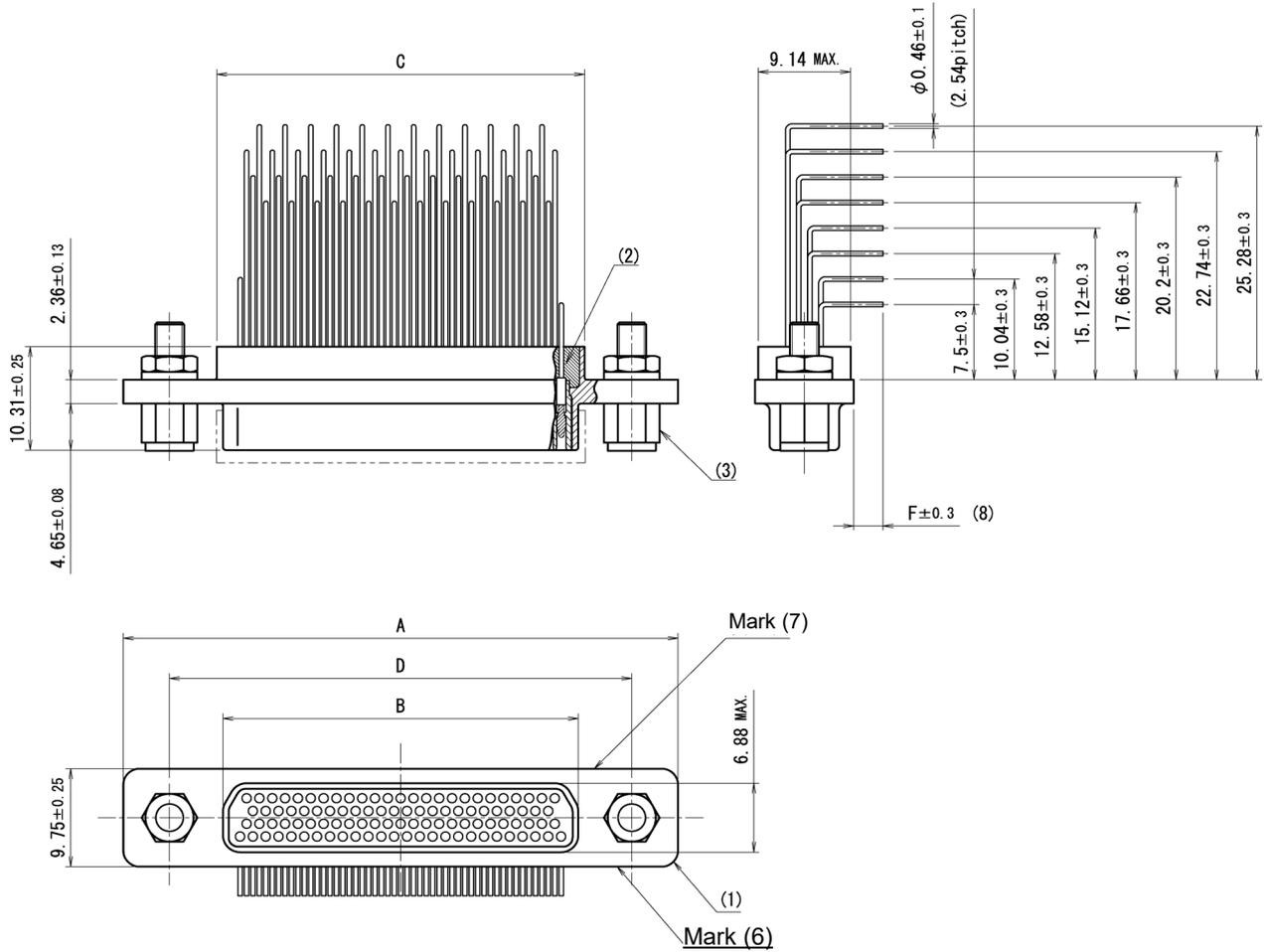
Supplementary Figure F-6. Right Angle Reverse Type Pin Connectors
(9 to 37 contacts) (9/13)
(Terminal bending pitch: 2.54mm, Terminal bending position: 7.5mm)

Unit: mm



**Supplementary Figure F-6. Right Angle Reverse Type Pin Connectors
(51 contacts) (10/13)
(Terminal bending pitch: 2.54mm, Terminal bending position: 7.5mm)**

Unit: mm



**Supplementary Figure F-6. Right Angle Reverse Type Pin Connectors
(100 contacts) (11/13)**

(Terminal bending pitch: 2.54mm, Terminal bending position: 7.5mm)

Unit: mm

Part number (5)	No. of contacts	Orientation of mating direction	Terminal bending pitch	Terminal bending position	Physical dimensions				Substrate arrangement
					A	B	C	D	
					±0.25	MAX	+0.25 -0.46	±0.13	
JD115 -9P- R****	9	Standard	1.905	6.5	19.68	8.48	9.91	14.35	Supplementary Figure F-10.1
			1.905	11					Supplementary Figure F-10.2
		Reverse	1.905	6.5					Supplementary Figure F-10.3
			1.905	11					Supplementary Figure F-10.4
			2.54	7.5					Supplementary Figure F-10.5
		JD115 -15P- R****	15	Standard					1,905
1.905	11				Supplementary Figure F-10.2				
Reverse	1.905			6.5	Supplementary Figure F-10.3				
	1.905			11	Supplementary Figure F-10.4				
	2.54			7.5	Supplementary Figure F-10.5				
JD115 -21P- R****	21			Reverse	2.54	7.5	27.30	16.10	17.53
JD115 -25P- R****	25	Standard	1,905	6.5	29.84	18.64	20.07	24.51	Supplementary Figure F-10.1
			1.905	11					Supplementary Figure F-10.2
		Reverse	1.905	6.5					Supplementary Figure F-10.3
			1.905	11					Supplementary Figure F-10.4
			2.54	7.5					Supplementary Figure F-10.5

Supplementary Figure F-6. Right Angle Type Pin Connectors (12/13)

Unit: mm

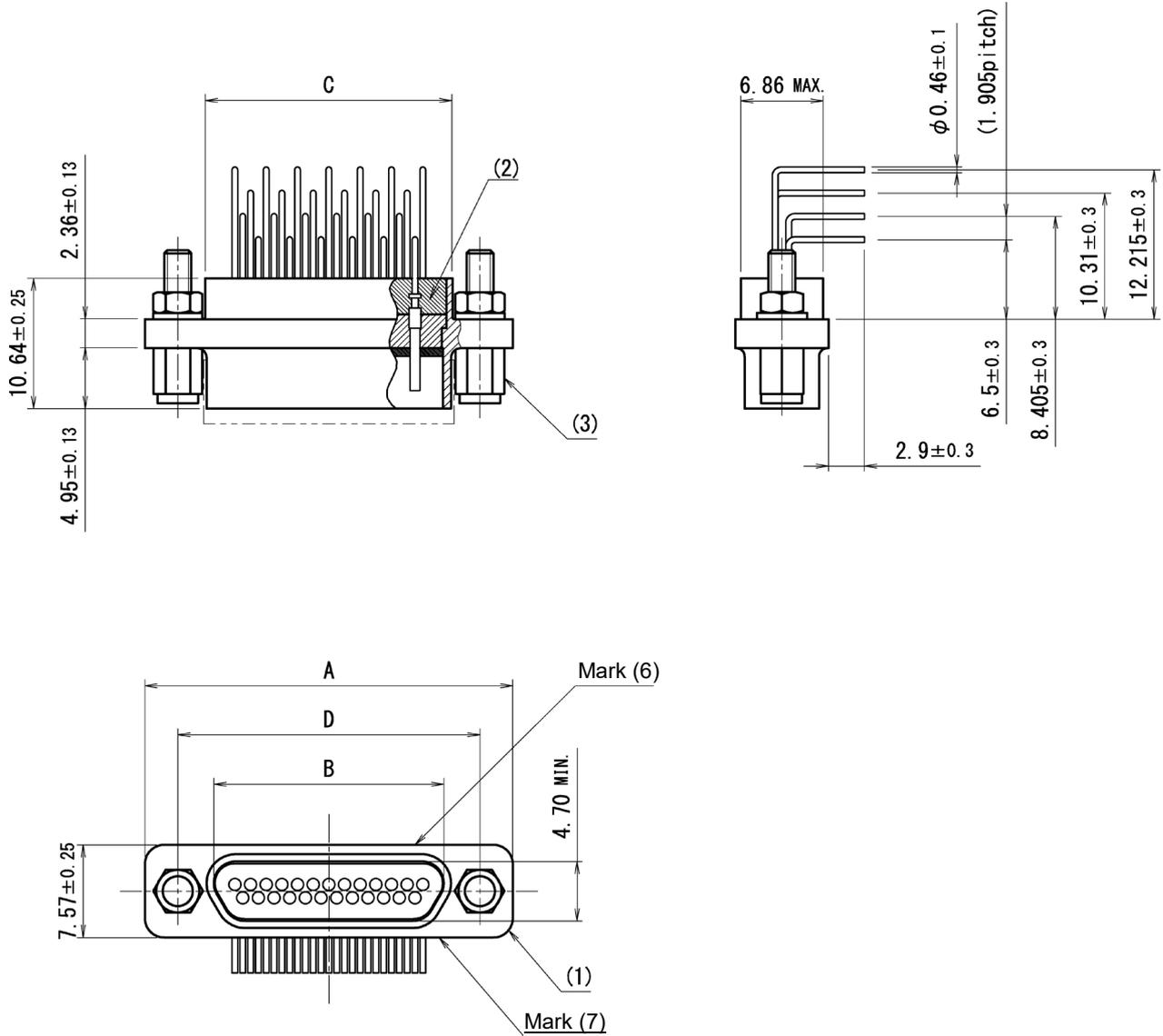
Part number (5)	No. of contacts	Orientation of mating direction	Terminal bending pitch	Terminal bending position	Physical dimensions				Substrate arrangement
					A	B	C	D	
					±0.25	MAX	+0.25 -0.46	±0.13	
JD115-31P-R****	31	Reverse	2.54	7.5	33.66	22.45	23.88	28.32	Supplementary Figure F-10.5
JD115-37P-R****	37	Standard	1,905	6.5	37.46	26.26	27.69	32.13	Supplementary Figure F-10.1
			1.905	11					Supplementary Figure F-10.2
		Reverse	1.905	6.5					Supplementary Figure F-10.3
			1.905	11					Supplementary Figure F-10.4
			2.54	7.5					Supplementary Figure F-10.5
JD115-51P-R****	51	Standard	1.905	6.5	36.20	24.99	26.42	30.86	Supplementary Figure F-10.1
			Reverse	1.905					6.5
			2.54	7.5					Supplementary Figure F-10.5
JD115-100P-R****	100	Standard	1.905	6.5	54.86	35.15	36.37	45.72	Supplementary Figure F-10.1
			Reverse	1.905					6.5
			2.54	7.5					Supplementary Figure F-10.5

Notes:

- (1) Shells shall be reasonably rounded.
- (2) Wiring shall be fixed with filler.
- (3) Designated accessories shall be attachable.
- (4) Substrate arrangement shall be in accordance with Supplementary Figure F-10.
- (5) Part number shall be in accordance with paragraph 1.2.
- (6) Part number shall be shown.
- (7) ITT, year and week manufactured, and production lot number shall be shown.
- (8) F indicates terminal length and F shall be designated A (2.9mm) or C (2.5mm) by the purchaser.

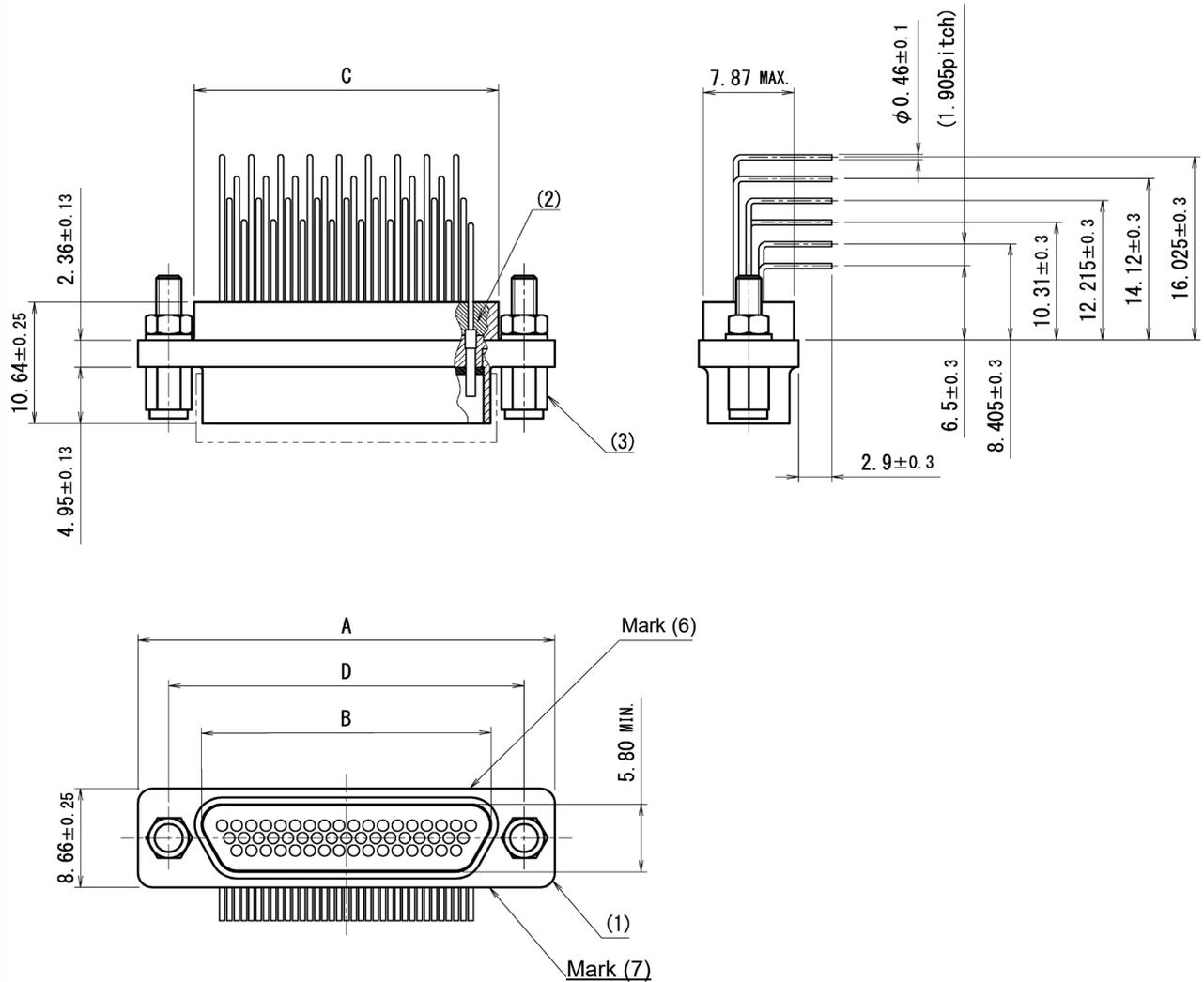
Supplementary Figure F-6. Right Angle Type Pin Connectors (13/13)

Unit: mm



**Supplementary Figure F-7. Right Angle Standard Type Socket Connectors
(9, 15, 25 and 37 contacts) (1/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

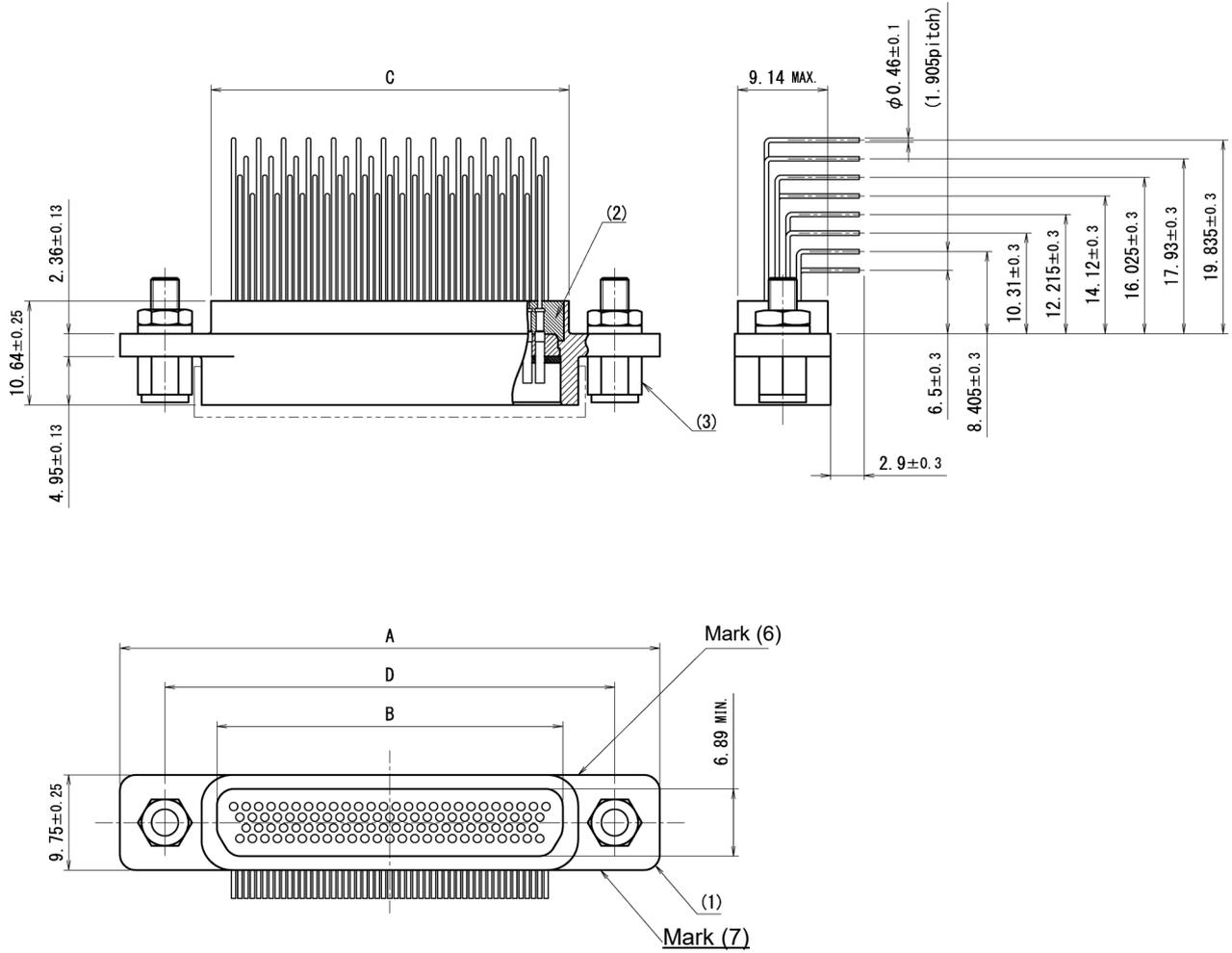
Unit: mm



**Supplementary Figure F-7. Right Angle Standard Type Socket Connectors
(51 contacts) (2/13)**

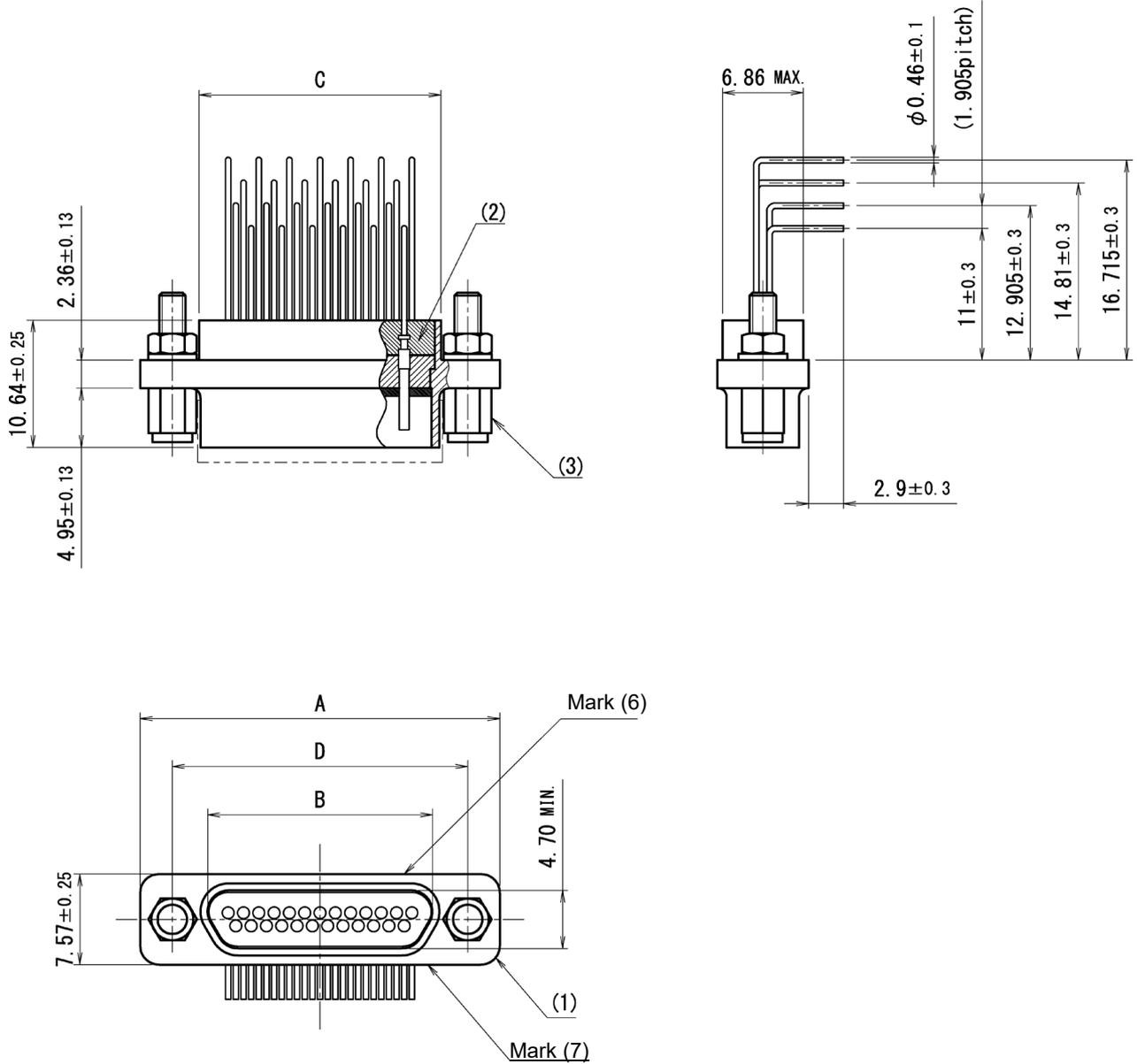
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)

Unit: mm



**Supplementary Figure F-7. Right Angle Standard Type Socket Connectors
(100 contacts) (3/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

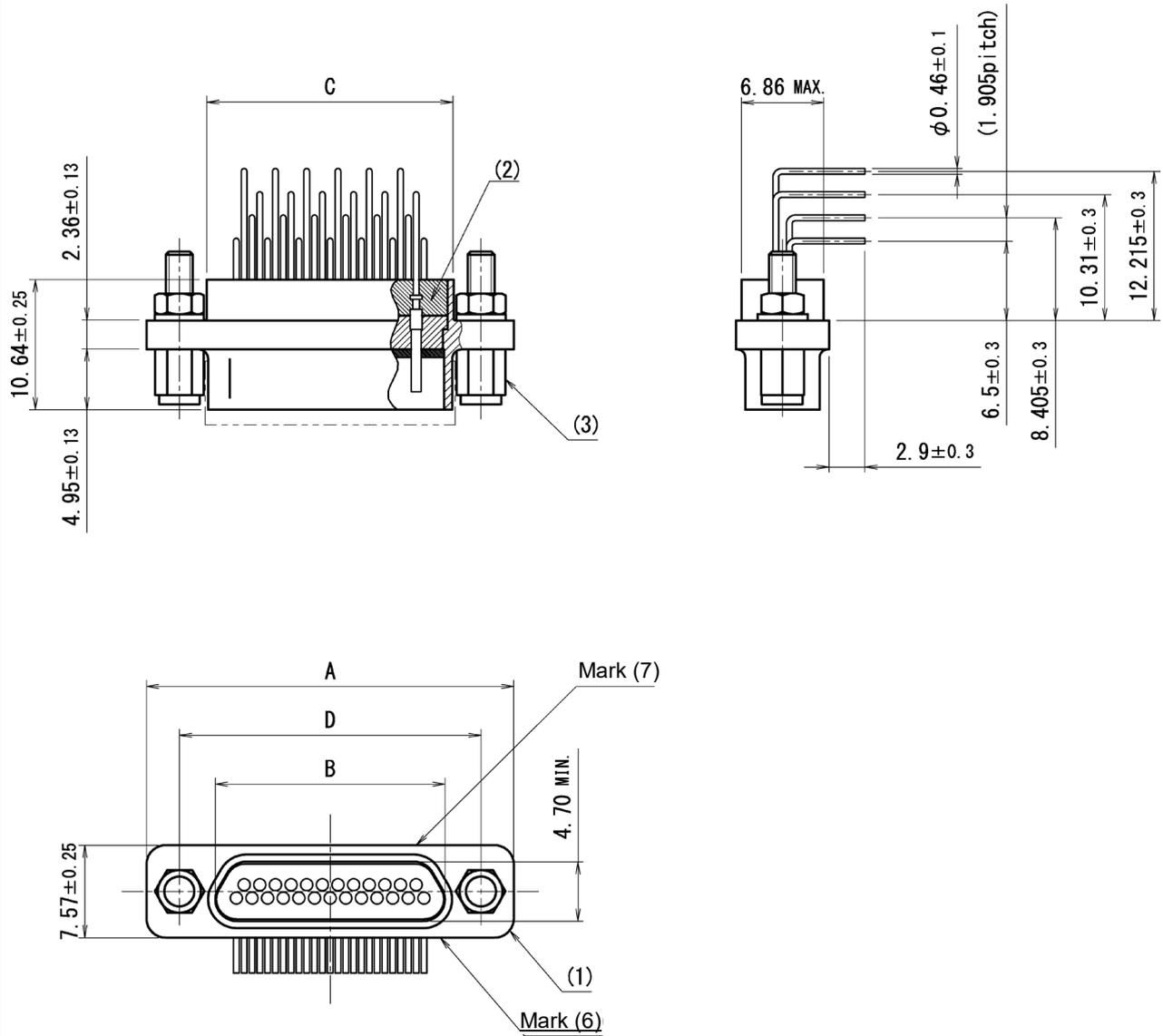
Unit: mm



**Supplementary Figure F-7. Right Angle Standard Type Socket Connectors
(9, 15, 25 and 37 contacts) (4/13)**

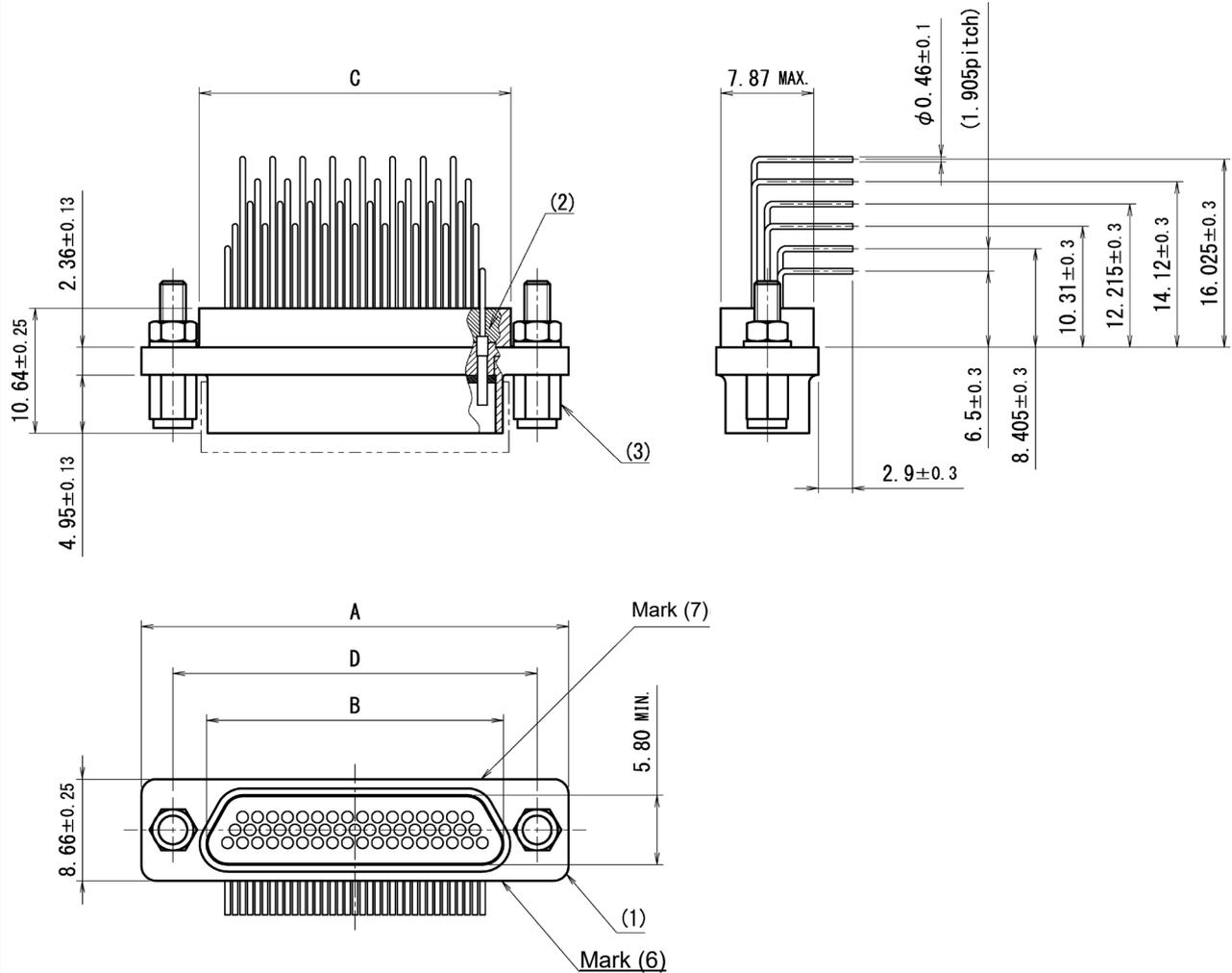
(Terminal bending pitch: 1.905mm, Terminal bending position: 11mm)

Unit: mm



**Supplementary Figure F-7. Right Angle Reverse Type Socket Connectors
(9, 15, 25 and 37 contacts) (5/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

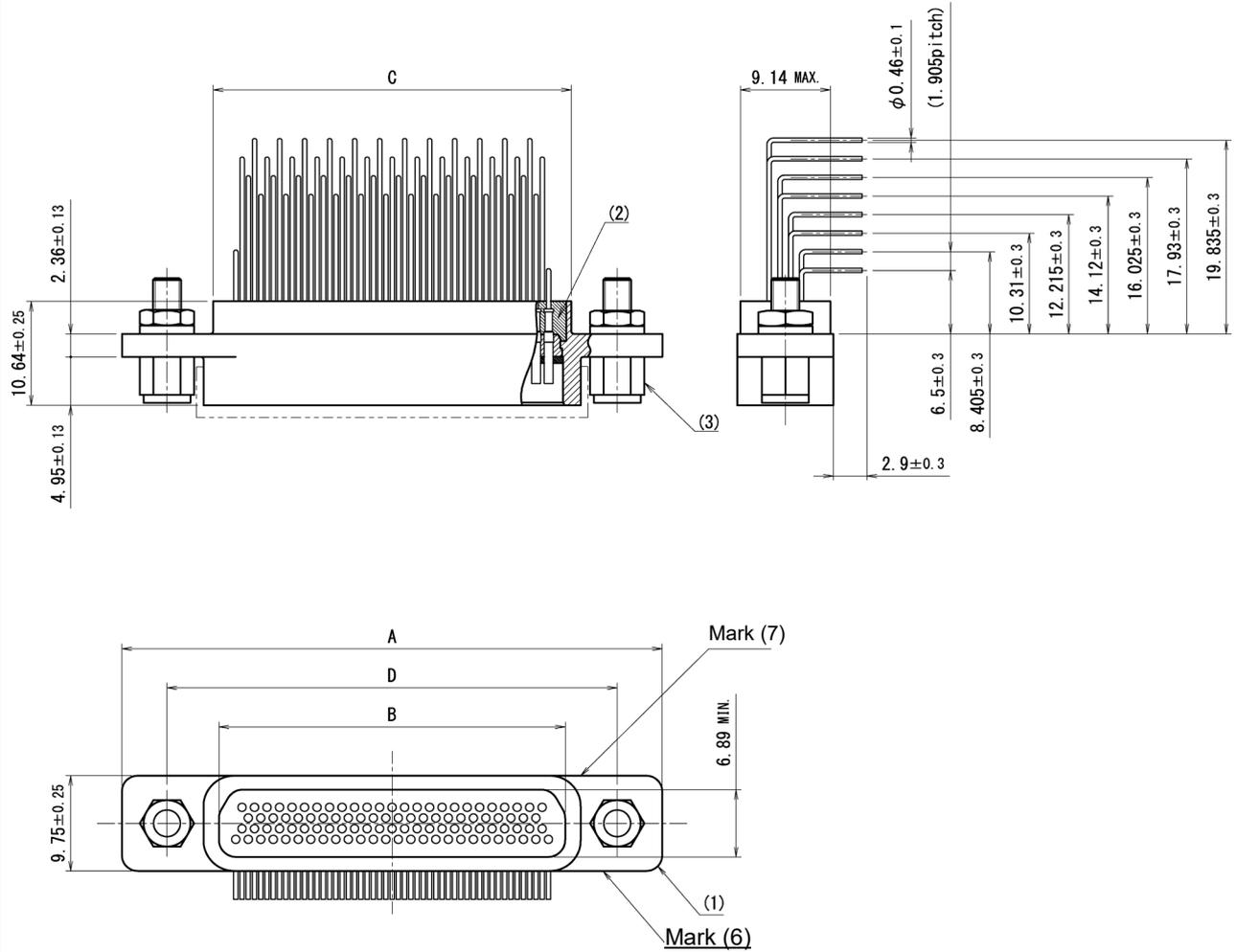
Unit: mm



**Supplementary Figure F-7. Right Angle Reverse Type Socket Connectors
(51 contacts) (6/13)**

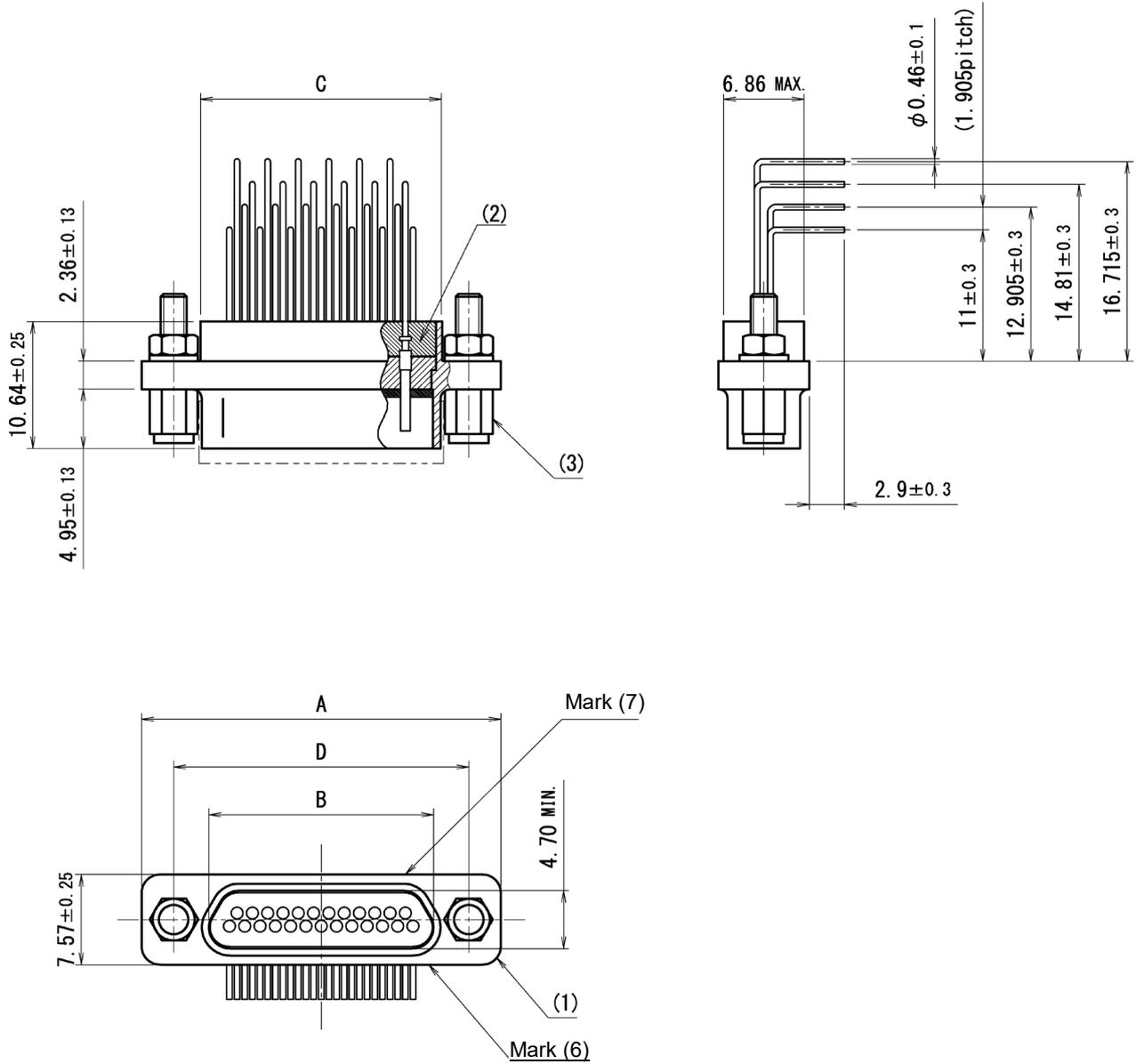
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)

Unit: mm



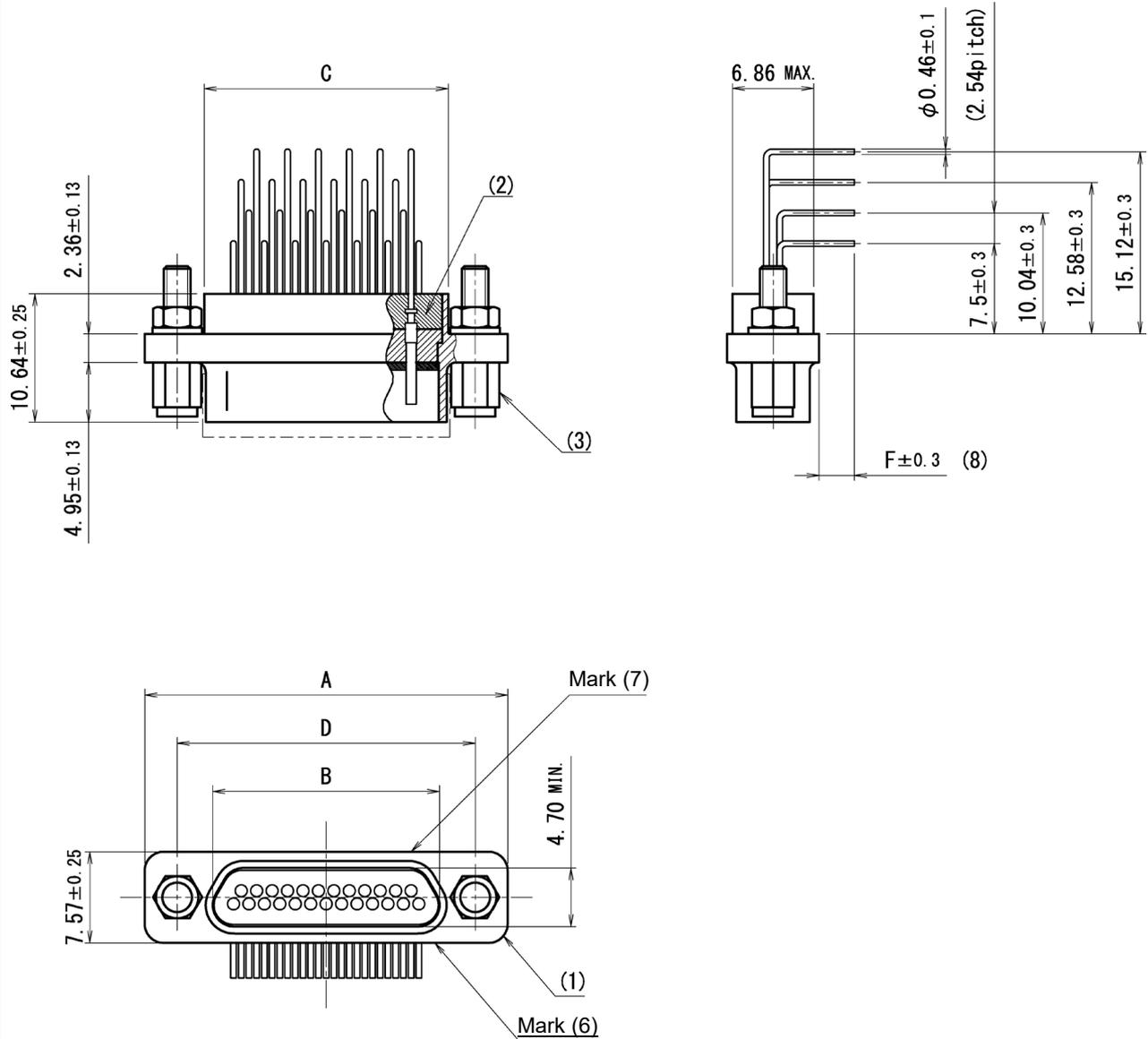
**Supplementary Figure F-7. Right Angle Reverse Type Socket Connectors
(100 contacts) (7/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 6.5mm)**

Unit: mm



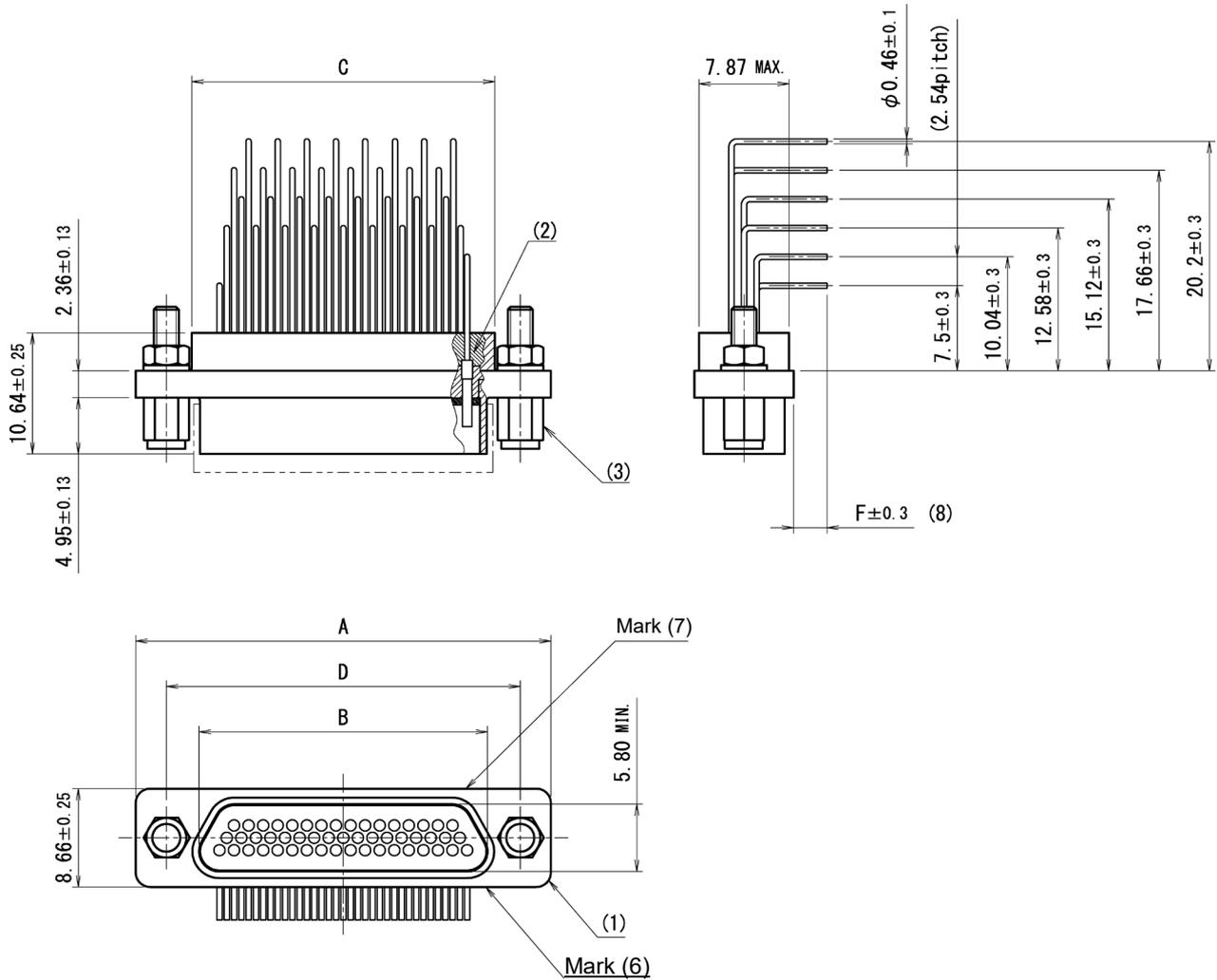
**Supplementary Figure F-7. Right Angle Reverse Type Socket Connectors
(9, 15, 25 and 37 contacts) (8/13)
(Terminal bending pitch: 1.905mm, Terminal bending position: 11mm)**

Unit: mm



**Supplementary Figure F-7. Right Angle Reverse Type Socket Connectors
(9 to 37 contacts) (9/13)
(Terminal bending pitch: 2.54mm, Terminal bending position: 7.5mm)**

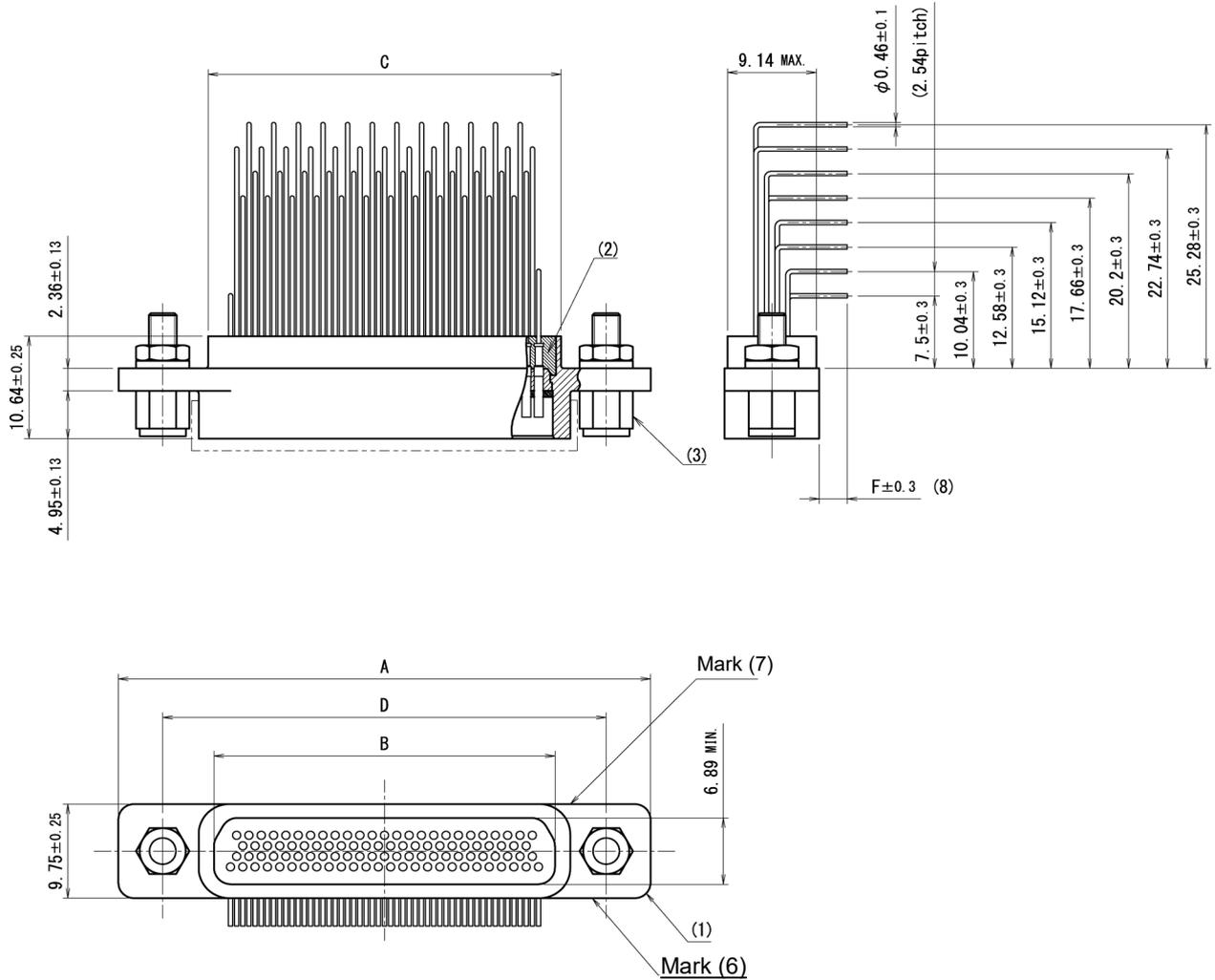
Unit: mm



**Supplementary Figure F-7. Right Angle Reverse Type Socket Connectors
(51 contacts) (10/13)**

(Terminal bending pitch: 2.54mm, Terminal bending position: 7.5mm)

Unit: mm



**Supplementary Figure F-7. Right Angle Reverse Type Socket Connectors
(100 contacts) (11/13)**

(Terminal bending pitch: 2.54mm, Terminal bending position: 7.5mm)

Unit: mm

Part number (5)	No. of contacts	Orientation of mating direction	Terminal bending pitch	Terminal bending position	Dimensions				Substrate arrangement
					A	B	C	D	
					±0.25	MIN	+0.25 -0.46	±0.13	
JD115 -9S- R****	9	Standard	1.905	6.5	19.68	8.49	9.91	14.35	Supplementary Figure F-11.1
			1.905	11					Supplementary Figure F-11.2
		Reverse	1.905	6.5					Supplementary Figure F-11.3
			1.905	11					Supplementary Figure F-11.4
			2.54	7.5					Supplementary Figure F-11.5
JD115 -15S- R****	15	Standard	1,905	6.5	23.50	12.30	13.72	18.16	Supplementary Figure F-11.1
			1.905	11					Supplementary Figure F-11.2
		Reverse	1.905	6.5					Supplementary Figure F-11.3
			1.905	11					Supplementary Figure F-11.4
			2.54	7.5					Supplementary Figure F-11.5
JD115 -21S- R****	21	Reverse	2.54	7.5	27.30	16.11	17.53	21.97	Supplementary Figure F-11.5
JD115 -25S- R****	25	Standard	1,905	6.5	29.84	18.65	20.07	24.51	Supplementary Figure F-11.1
			1.905	11					Supplementary Figure F-11.2
		Reverse	1.905	6.5					Supplementary Figure F-11.3
			1.905	11					Supplementary Figure F-11.4
			2.54	7.5					Supplementary Figure F-11.5

Supplementary Figure F-7. Right Angle Type Socket Connectors (12/13)

Unit: mm

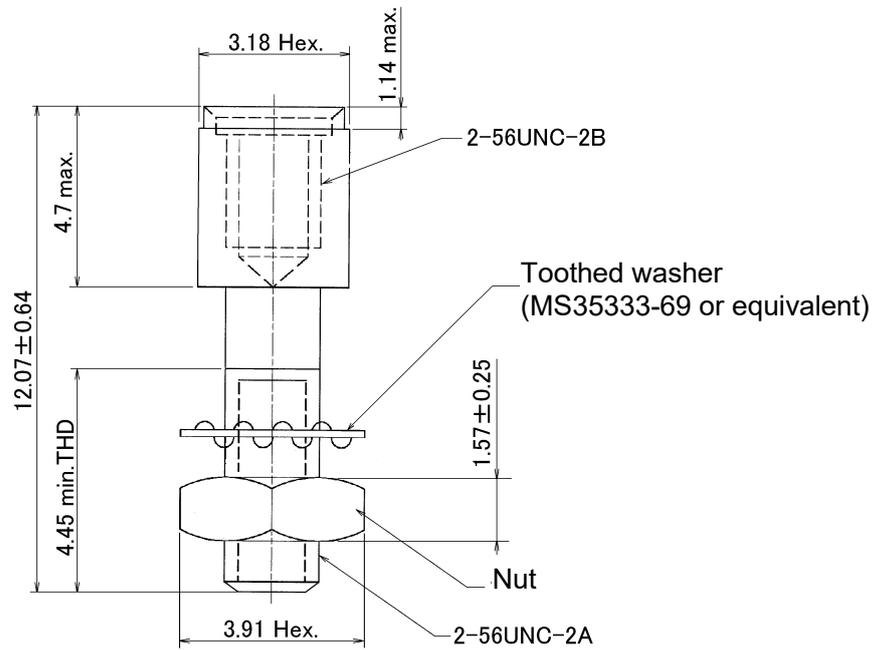
Part number (5)	No. of contacts	Orientation of mating direction	Terminal bending pitch	Terminal bending position	Dimensions				Substrate arrangement
					A	B	C	D	
					±0.25	MIN	+0.25 -0.46	±0.13	
JD115-31S-R****	31	Reverse	2.54	7.5	33.66	22.46	23.88	28.32	Supplementary Figure F-11.5
JD115-37S-R****	37	Standard	1.905	6.5	37.46	26.27	27.69	32.13	Supplementary Figure F-11.1
			1.905	11					Supplementary Figure F-11.2
		Reverse	1.905	6.5					Supplementary Figure F-11.3
			1.905	11					Supplementary Figure F-11.4
			2.54	7.5					Supplementary Figure F-11.5
JD115-51S-R****	51	Standard	1.905	6.5	36.20	25.00	26.42	30.86	Supplementary Figure F-11.1
			Reverse	1.905					6.5
			2.54	7.5					Supplementary Figure F-11.5
JD115-100S-R****	100	Standard	1.905	6.5	54.86	35.16	36.37	45.72	Supplementary Figure F-11.1
			Reverse	1.905					6.5
			2.54	7.5					Supplementary Figure F-11.5

Notes:

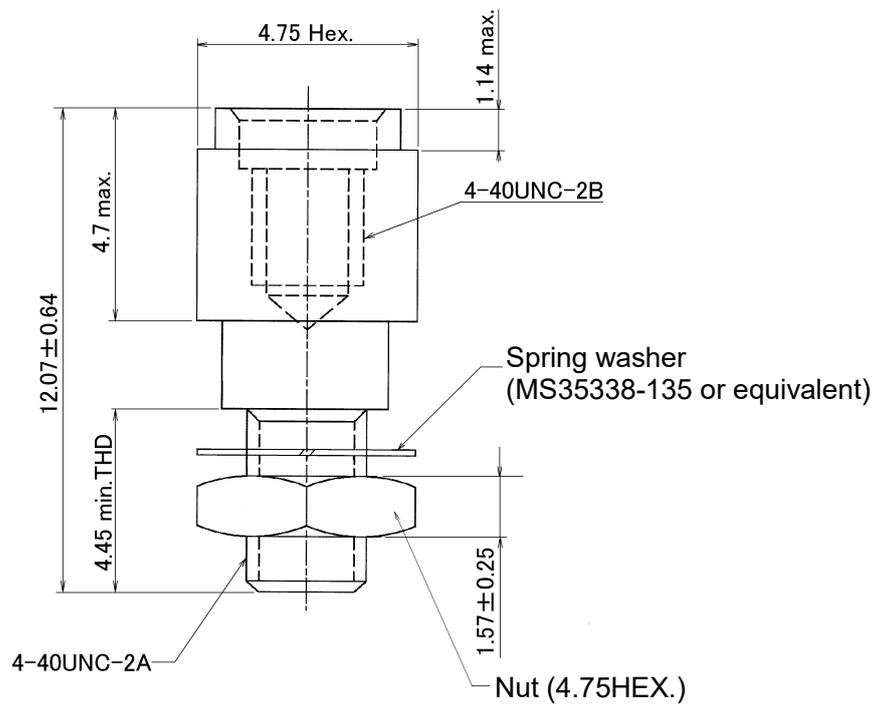
- (1) Shells shall be reasonably rounded.
- (2) Wiring shall be fixed with filler.
- (3) Designated accessories shall be attachable.
- (4) Substrate arrangement shall be in accordance with Supplementary Figure F-11.
- (5) Part number shall be in accordance with paragraph 1.2.
- (6) Part number shall be shown.
- (7) ITT, year and week manufactured, and production lot number shall be shown.
- (8) F indicates terminal length and F shall be designated A (2.9mm) or C (2.5mm) by the purchaser.

Supplementary Figure F-7. Right Angle Type Socket Connectors (13/13)

Unit: mm



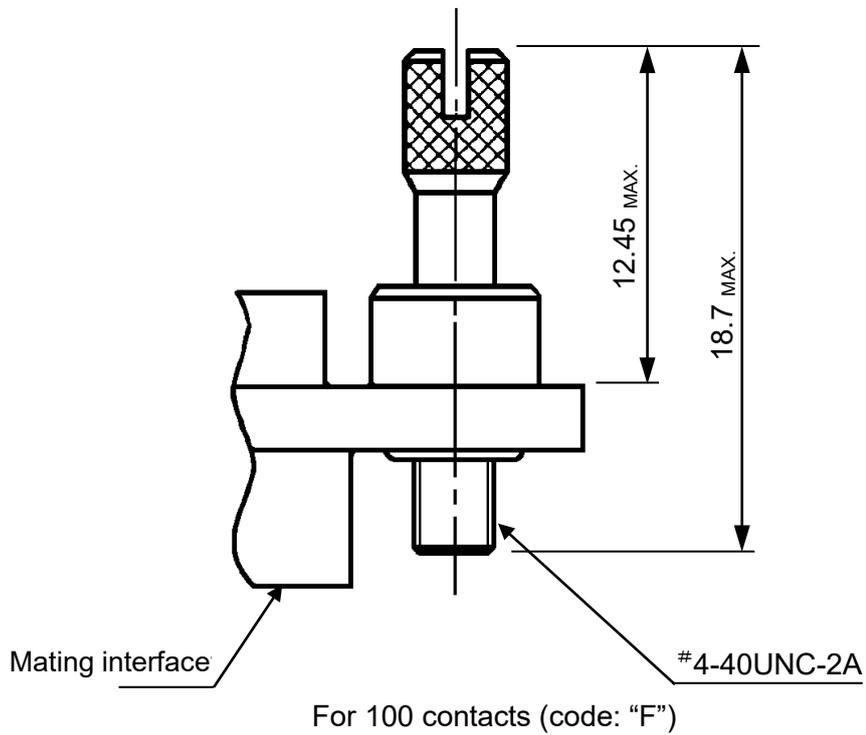
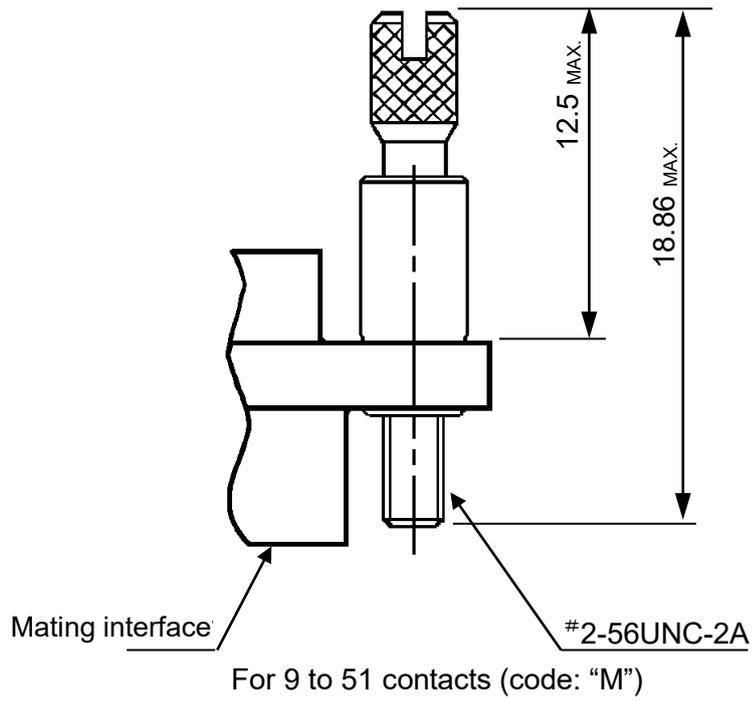
For 9 to 51 contacts (code: "P")



For 100 contacts (code: "S")

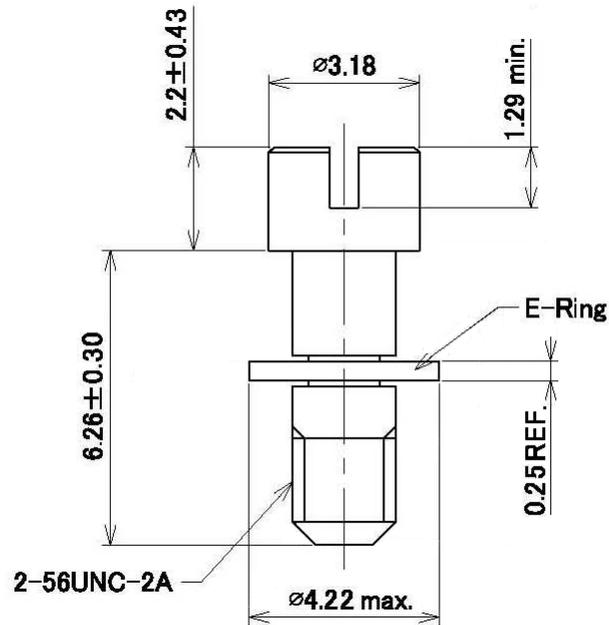
Supplementary Figure F-8. Accessories (Jackpost Assembly)

Unit: mm

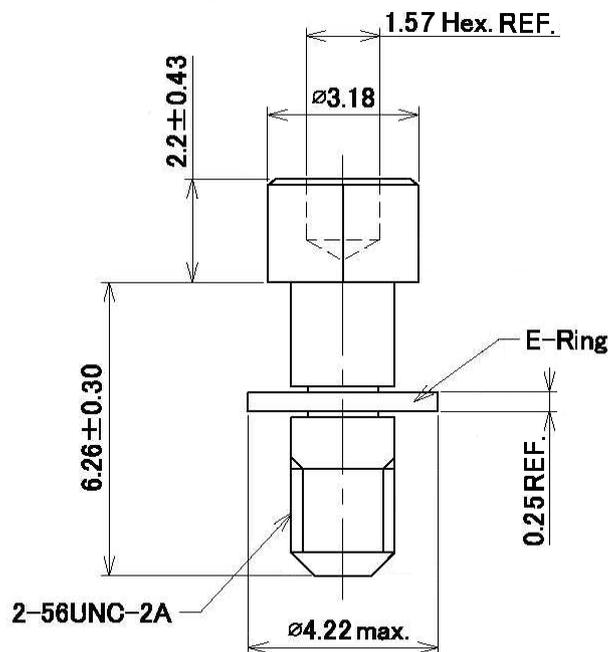


Supplementary Figure F-9. Accessories (Jackscrew Assembly) (1/5)

Unit: mm



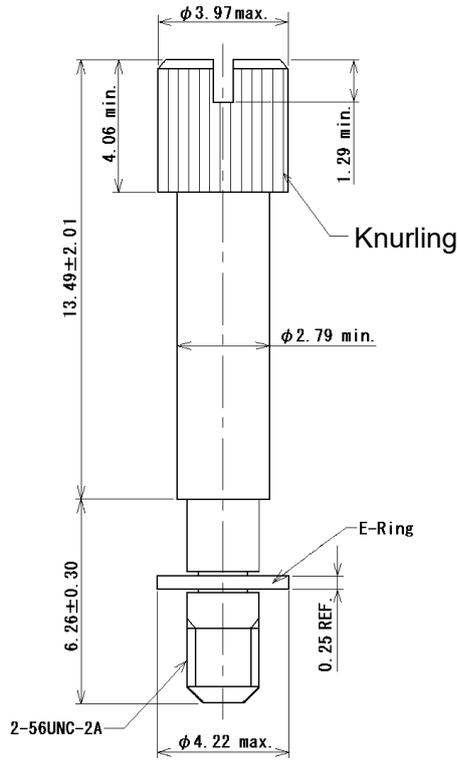
Low profile, slot, for 9 to 51 contacts (code: "L")



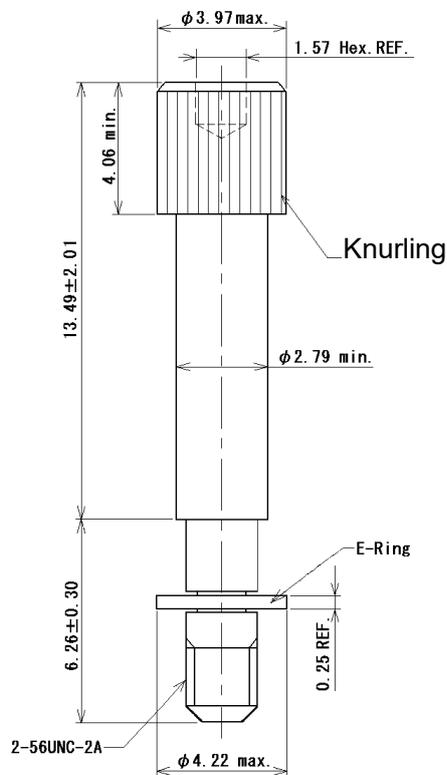
Low profile, hexagon, for 9 to 51 contacts (code: "R")

Supplementary Figure F-9. Accessories (Jackscrew Assembly) (2/5)

Unit: mm

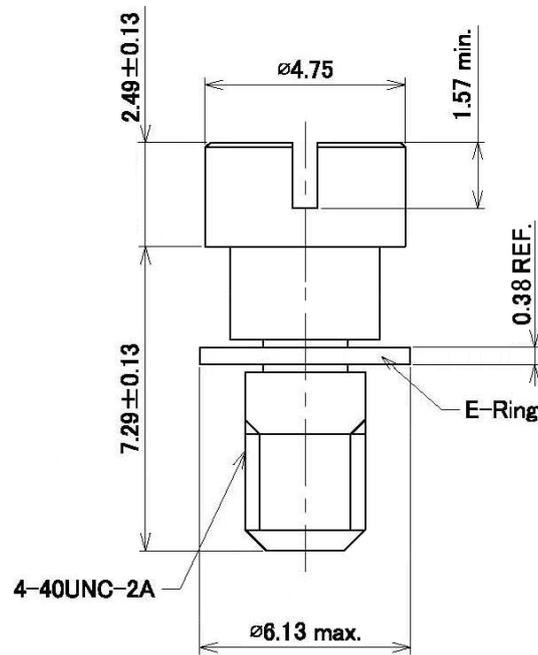


High profile, slot, for 9 to 51 contacts (code: "K")

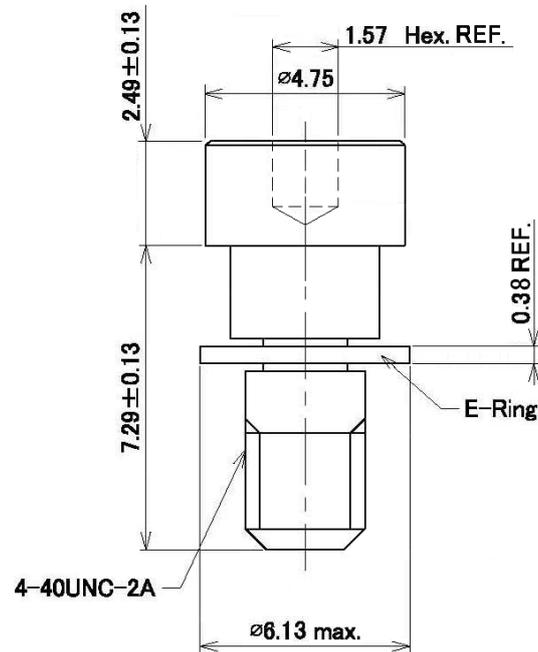


High profile, hexagon, for 9 to 51 contacts (code: "Q")

Unit: mm



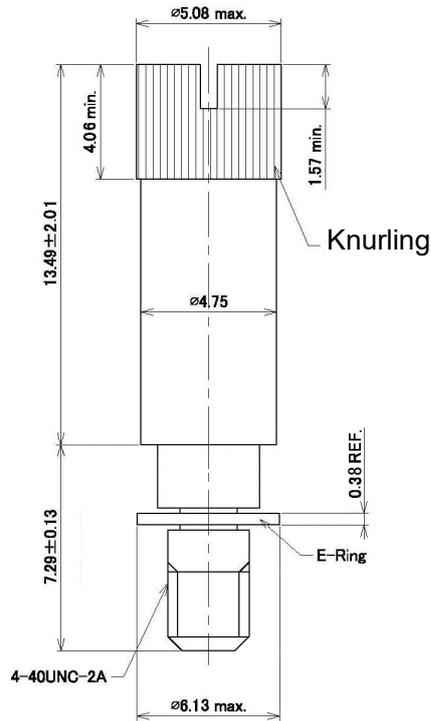
Low profile, slot, for 100 contacts (code: "J")



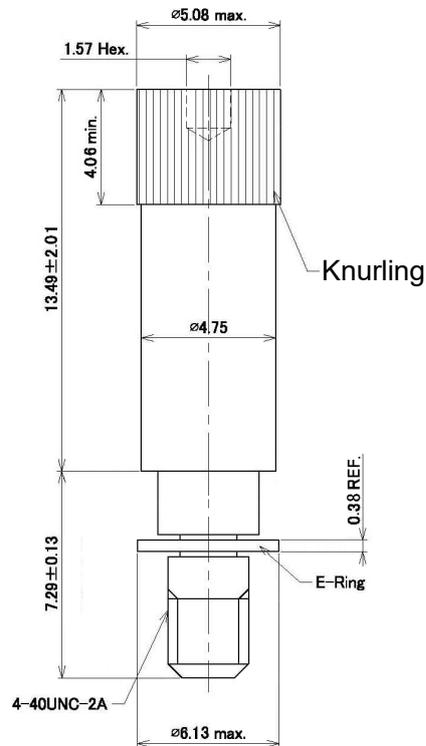
Low profile, hexagon, for 100 contacts (code: "N")

Supplementary Figure F-9. Accessories (Jackscrew Assembly) (4/5)

Unit: mm



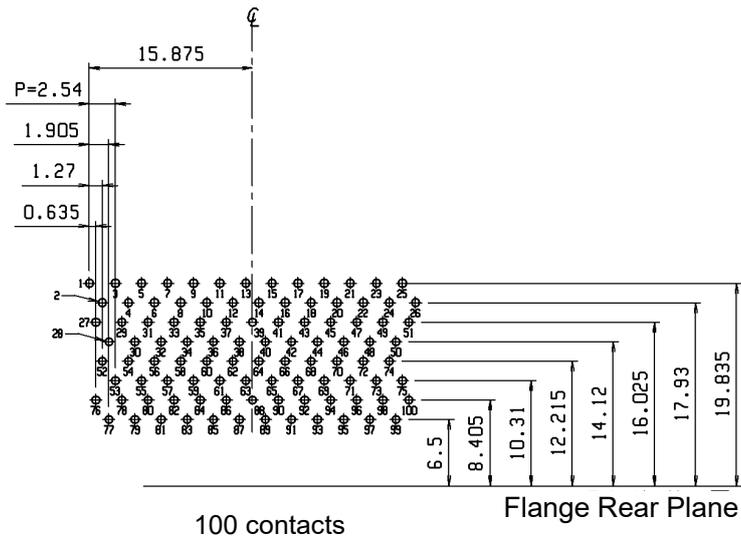
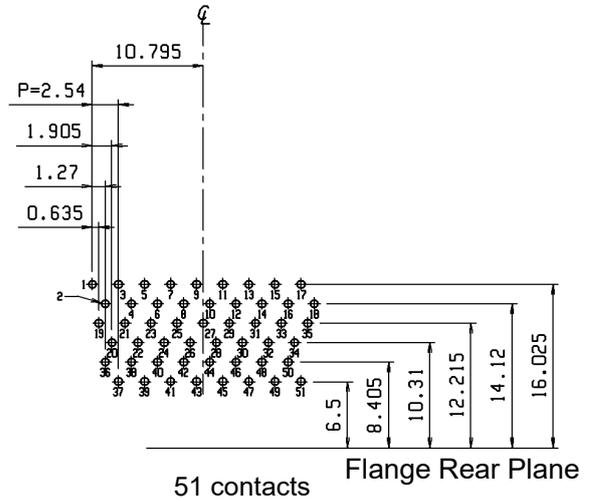
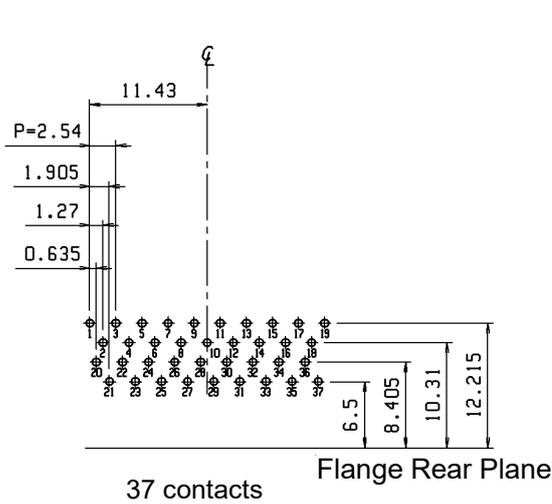
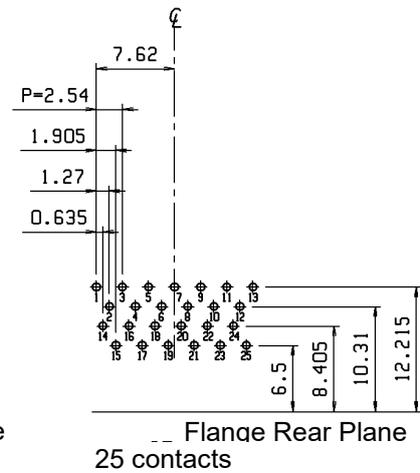
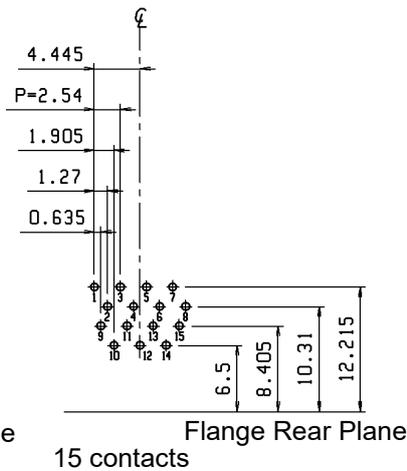
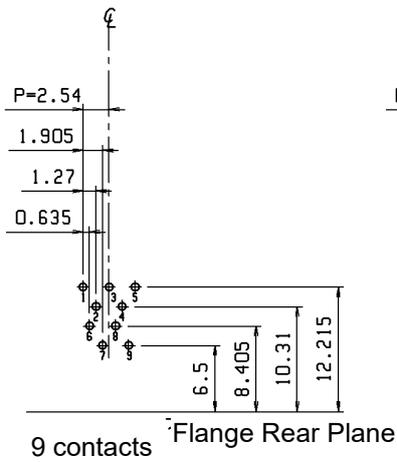
High profile, slot, for 100 contacts (code: "H")



High profile, hexagon, for 100 contacts (code: "T")

Supplementary Figure F-9. Accessories (Jackscrew Assembly) (5/5)

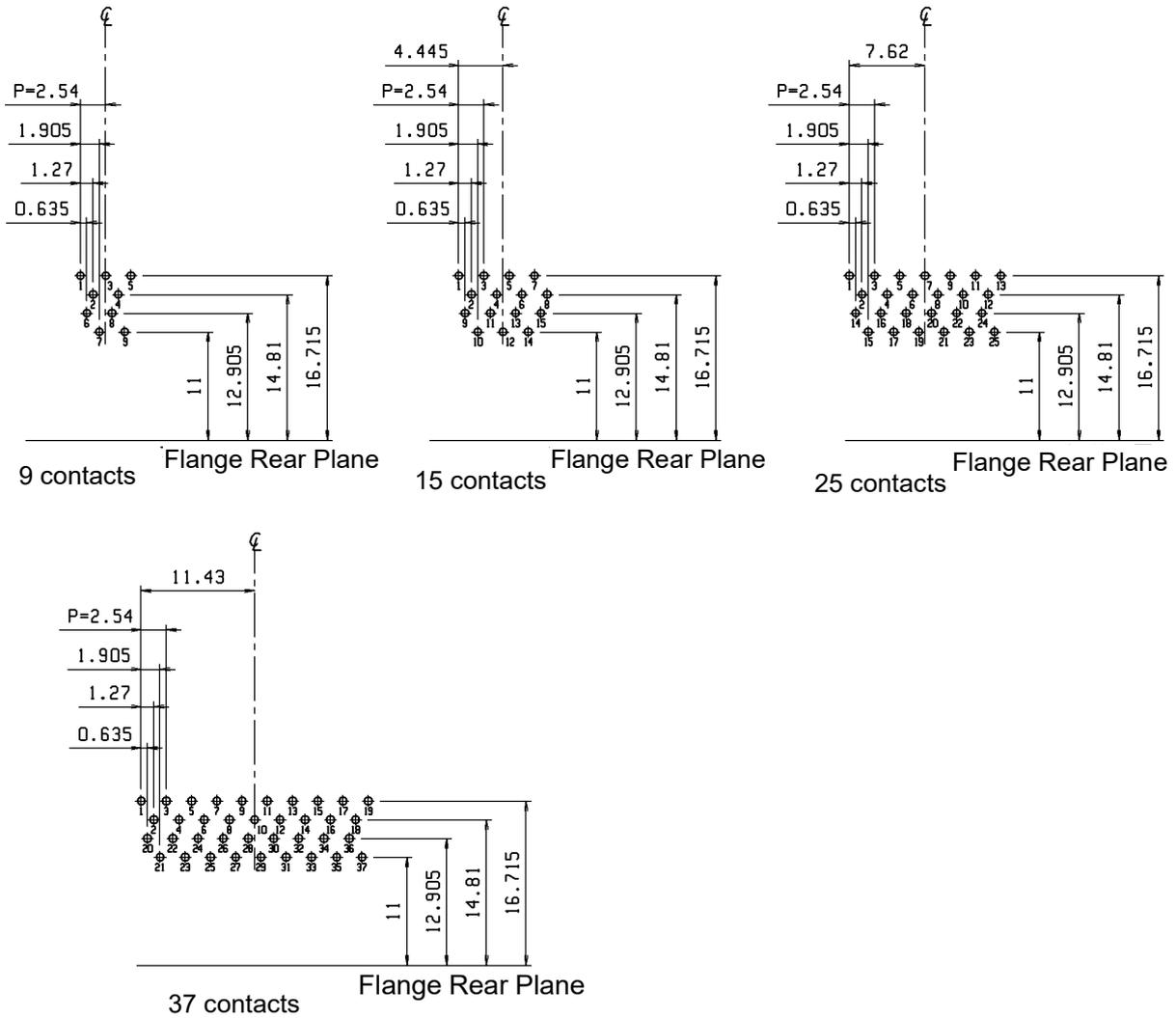
Unit: mm



Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-10.1. Right Angle Standard Type Pin Connectors
Substrate Arrangement
(Terminal Bending Pitch: 1.905mm, Terminal Bending Position: 6.5mm)**

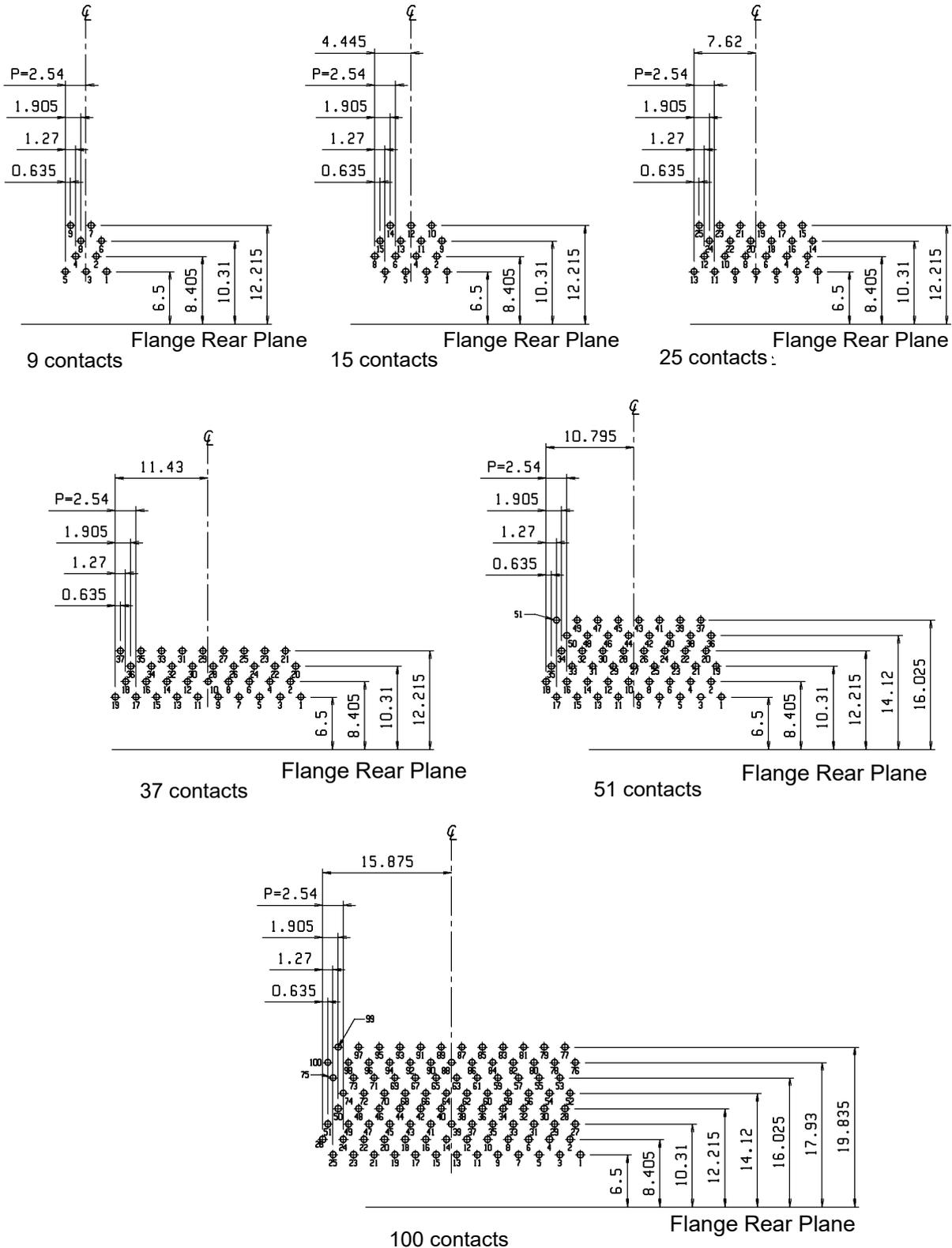
Unit: mm



Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-10.2. Right Angle Standard Type Pin Connectors
Substrate Arrangement
(Terminal Bending Pitch: 1.905mm, Terminal Bending Position: 11mm)**

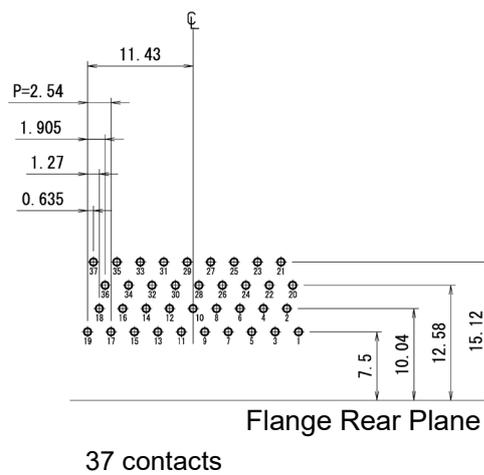
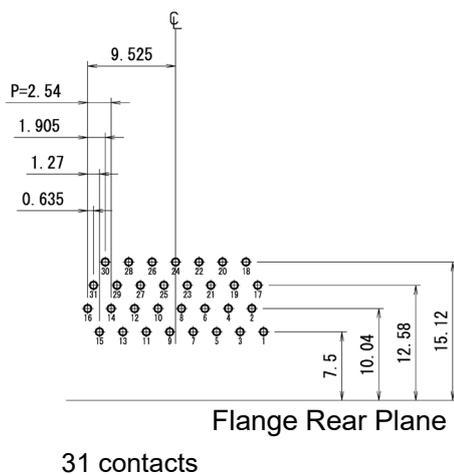
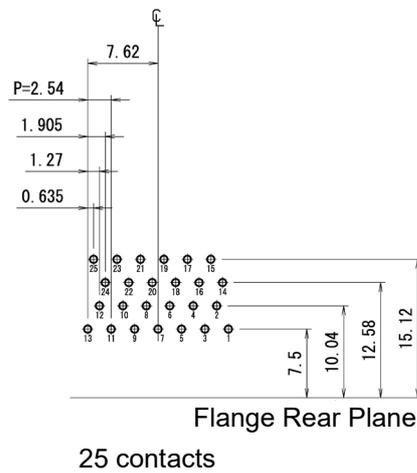
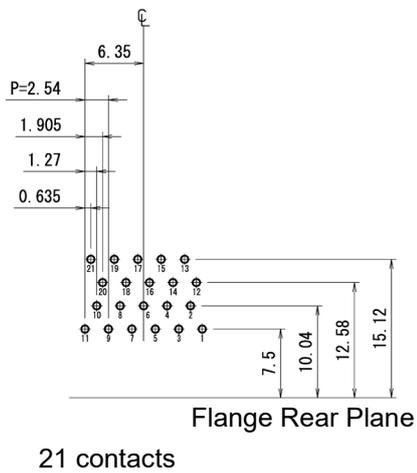
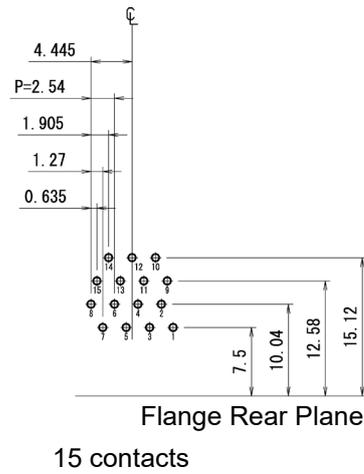
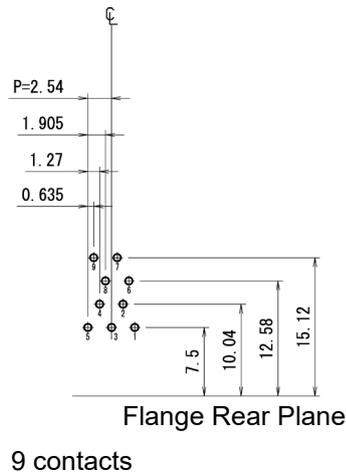
Unit: mm



Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-10.3. Right Angle Reverse Type Pin Connectors
Substrate Arrangement
(Terminal Bending Pitch: 1.905mm, Terminal Bending Position: 6.5mm)**

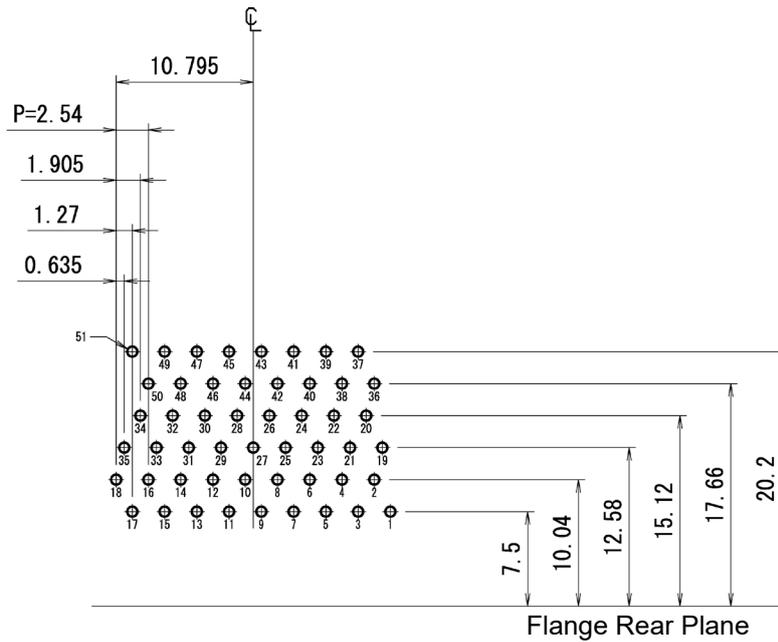
Unit: mm



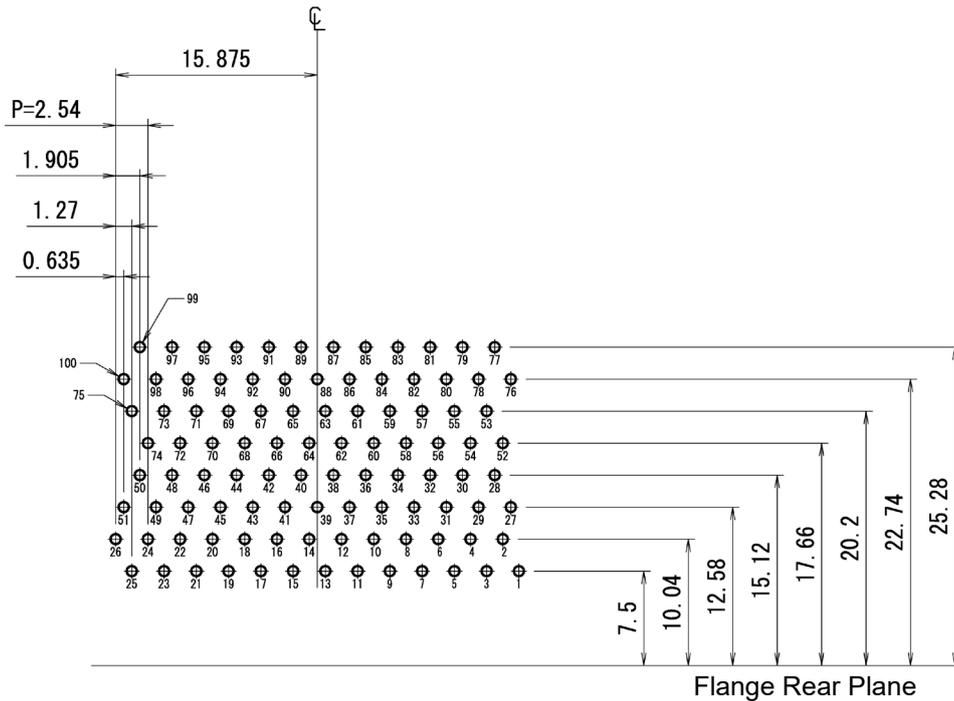
Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-10.5. Right Angle Reverse Type Pin Connectors
Substrate Arrangement
(Terminal Bending Pitch: 2.54mm, Terminal Bending Position: 7.5mm) (1/2)**

Unit: mm



51 contacts

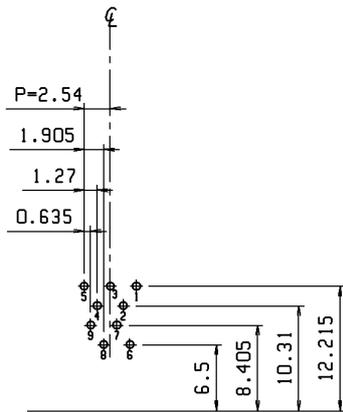


100 contacts

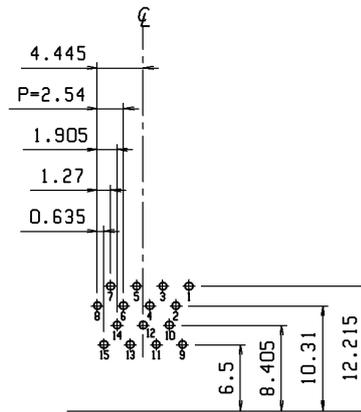
Note (1): View from connector mounting side shown.

**Supplementary Figure F-10.5. Right Angle Reverse Type Pin Connectors
Substrate Arrangement
(Terminal Bending Pitch: 2.54mm, Terminal Bending Position: 7.5mm) (2/2)**

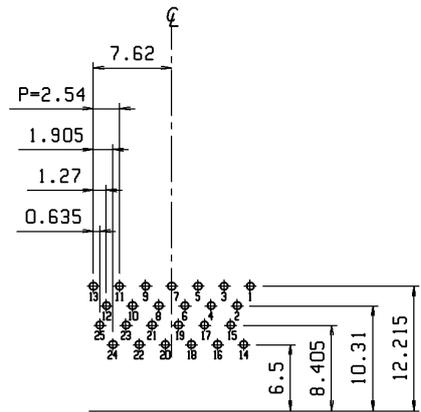
Unit: mm



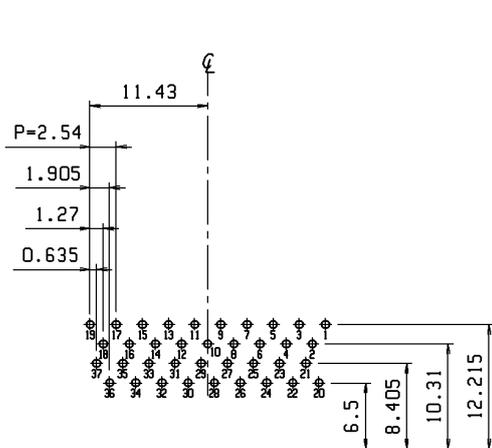
Flange Rear Plane
9 contacts



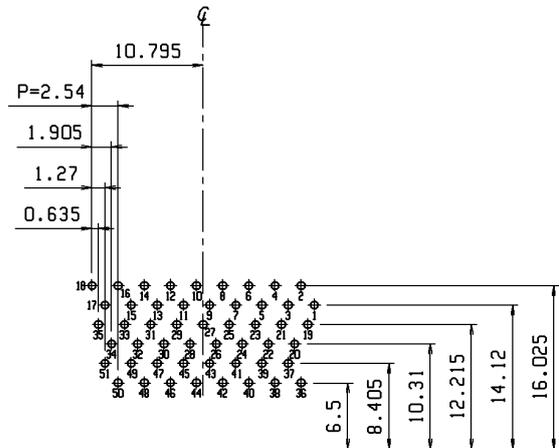
Flange Rear Plane
15 contacts



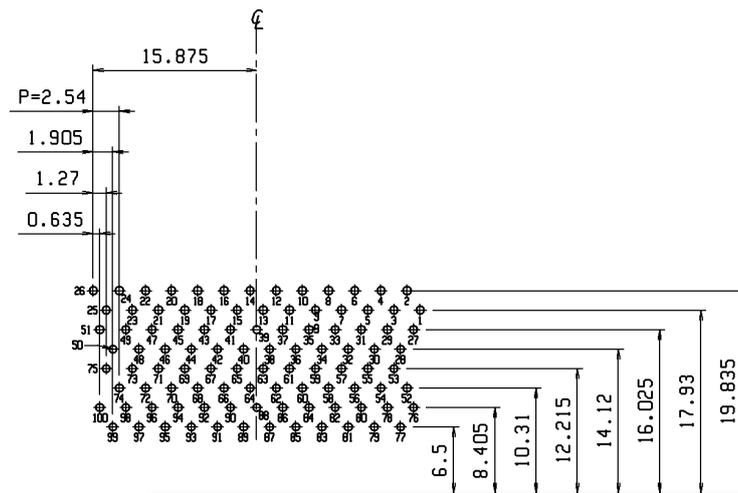
Flange Rear Plane
25 contacts



Flange Rear Plane
37 contacts



Flange Rear Plane
51 contacts

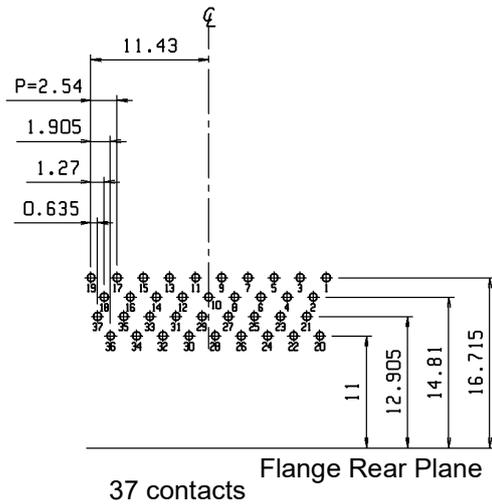
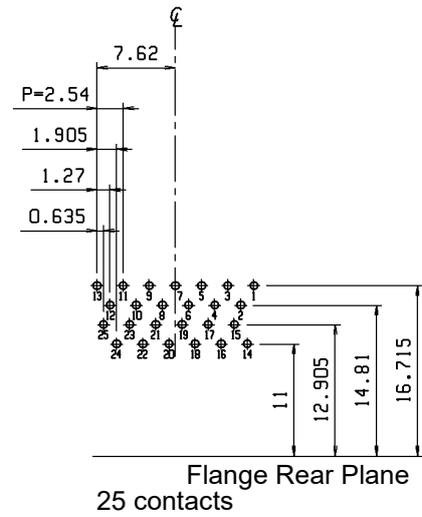
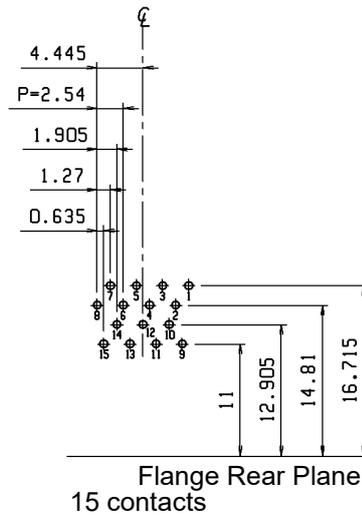
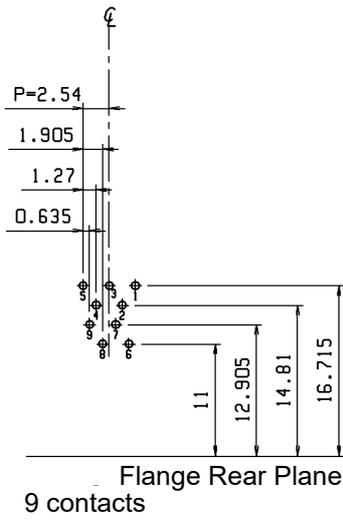


100 contacts
Flange Rear Plane

Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-11.1. Right Angle Standard Type Socket Connectors
Substrate Arrangement
(Terminal Bending Pitch: 1.905mm, Terminal Bending Position: 6.5mm)**

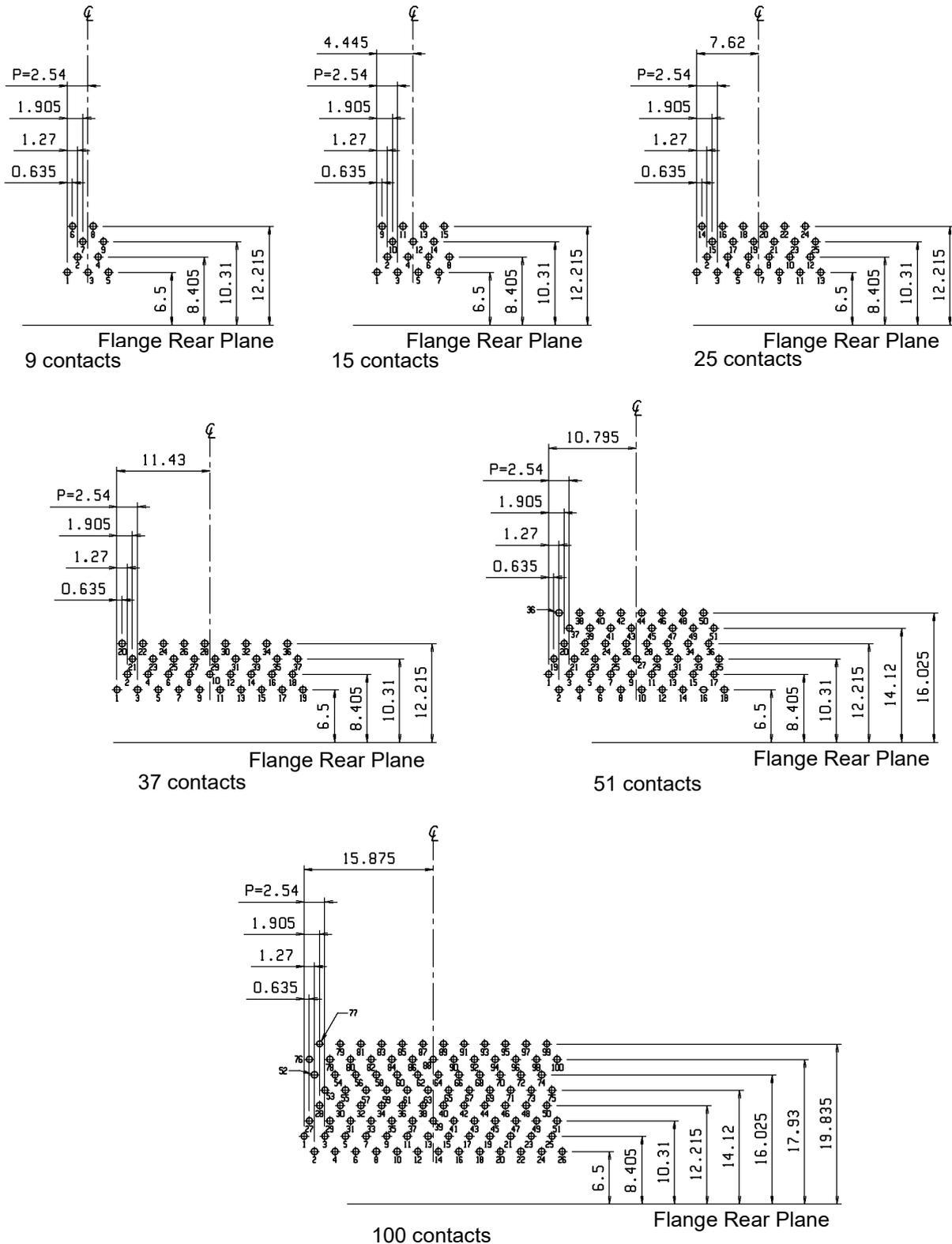
Unit: mm



Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-11.2. Right Angle Standard Type Socket Connectors
Substrate Arrangement
(Terminal Bending Pitch: 1.905mm, Terminal Bending Position: 11mm)**

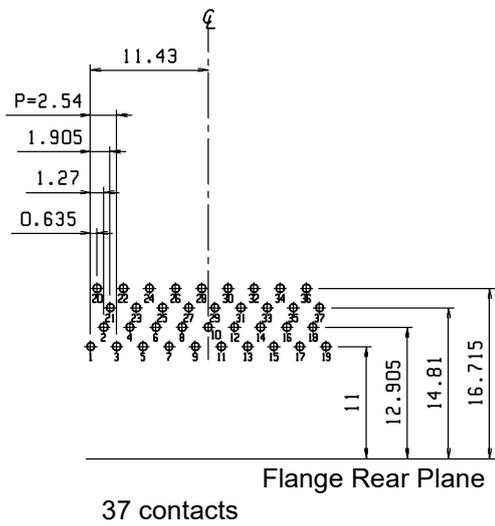
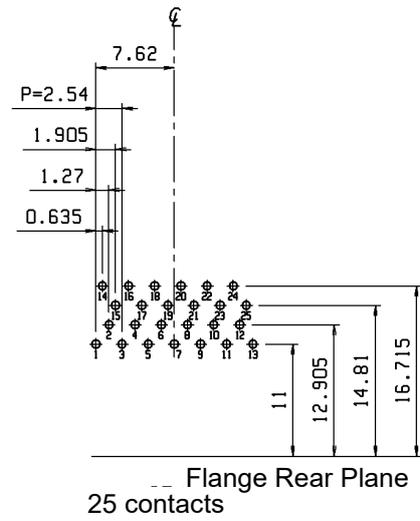
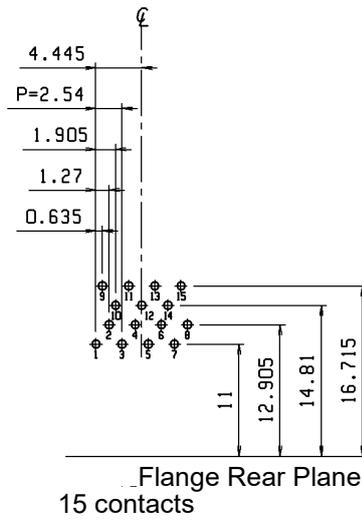
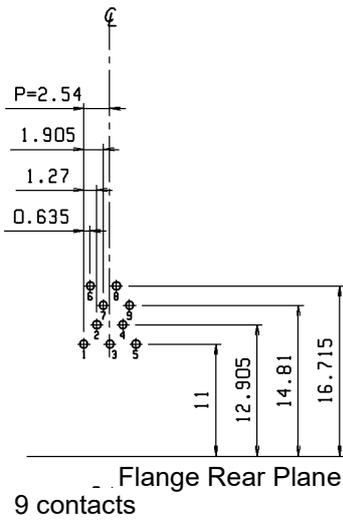
Unit: mm



Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-11.3. Right Angle Reverse Type Socket Connectors
Substrate Arrangement
(Terminal Bending Pitch: 1.905mm, Terminal Bending Position: 6.5mm)**

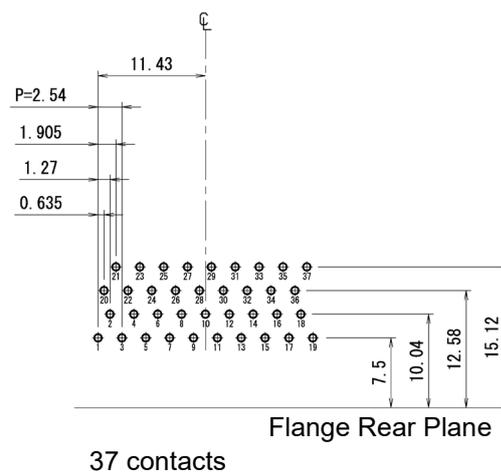
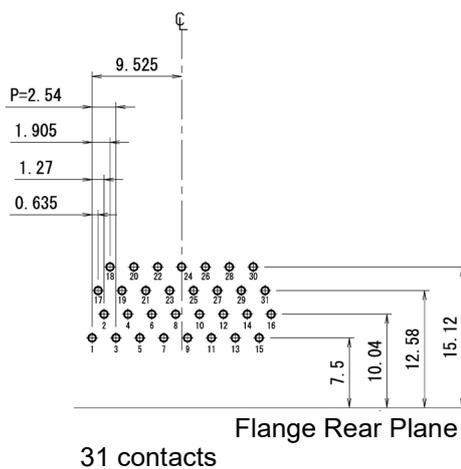
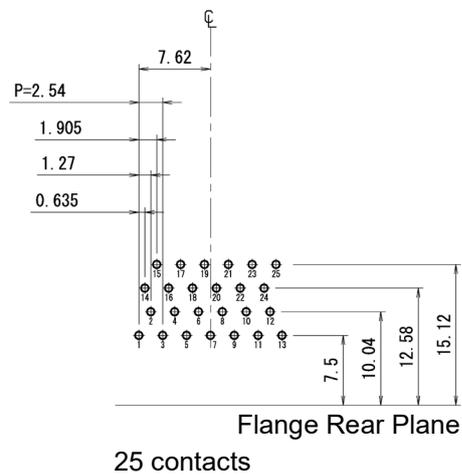
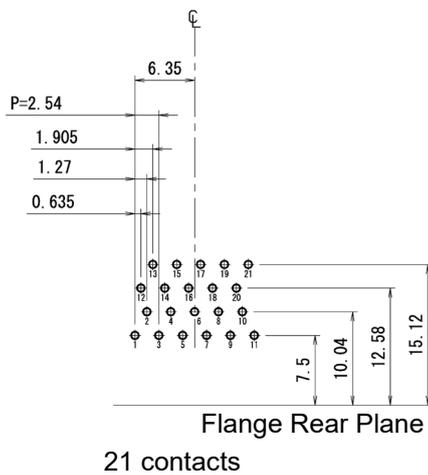
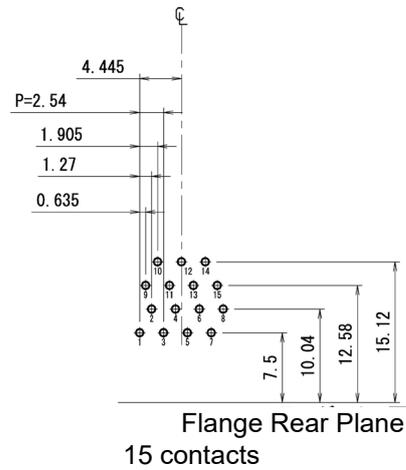
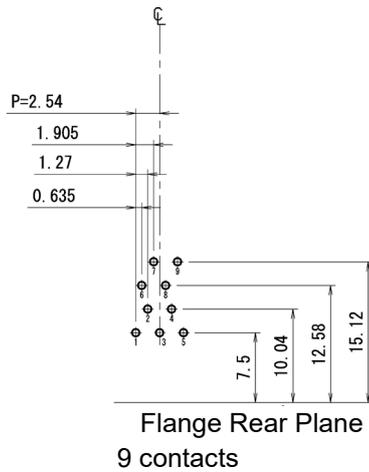
Unit: mm



Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-11.4. Right Angle Reverse Type Socket Connectors
Substrate Arrangement
(Terminal Bending Pitch: 1.905mm, Terminal Bending Position: 11mm)**

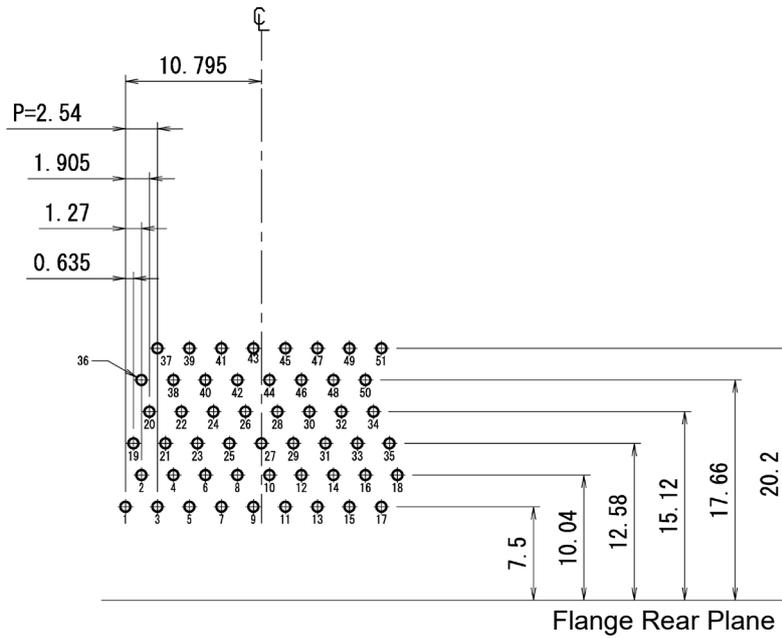
Unit: mm



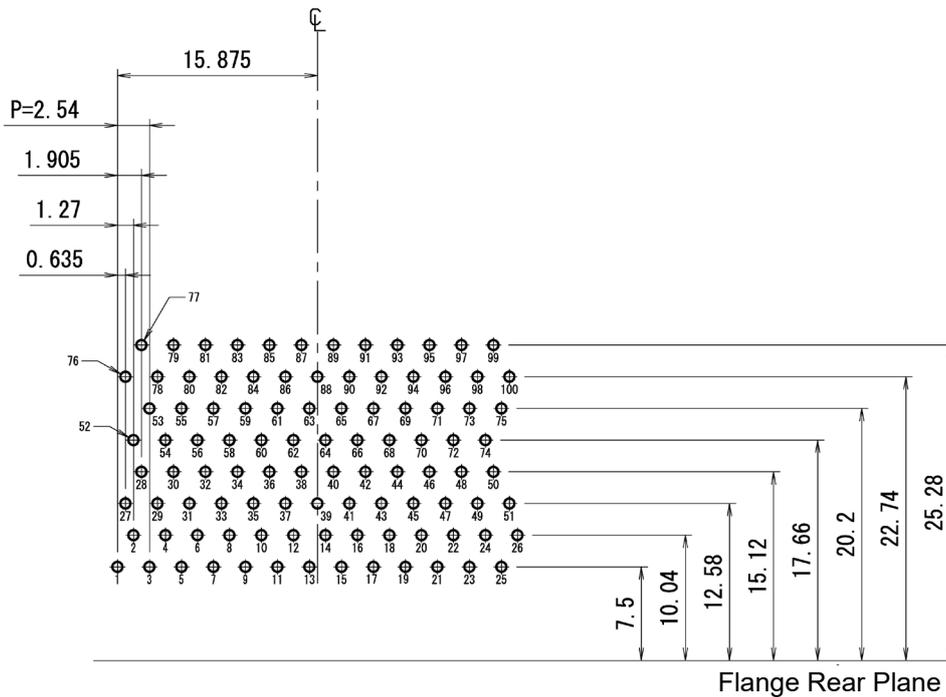
Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-11.5. Right Angle Reverse Type Socket Connectors
Substrate Arrangement
(Terminal Bending Pitch: 2.54mm, Terminal Bending Position: 7.5mm)**

Unit: mm



51 contacts



100 contacts

Note ⁽¹⁾: View from connector mounting side shown.

**Supplementary Figure F-11.5. Right Angle Reverse Type Socket Connectors
Substrate Arrangement
(Terminal Bending Pitch: 2.54mm, Terminal Bending Position: 7.5mm) (Cont.)**