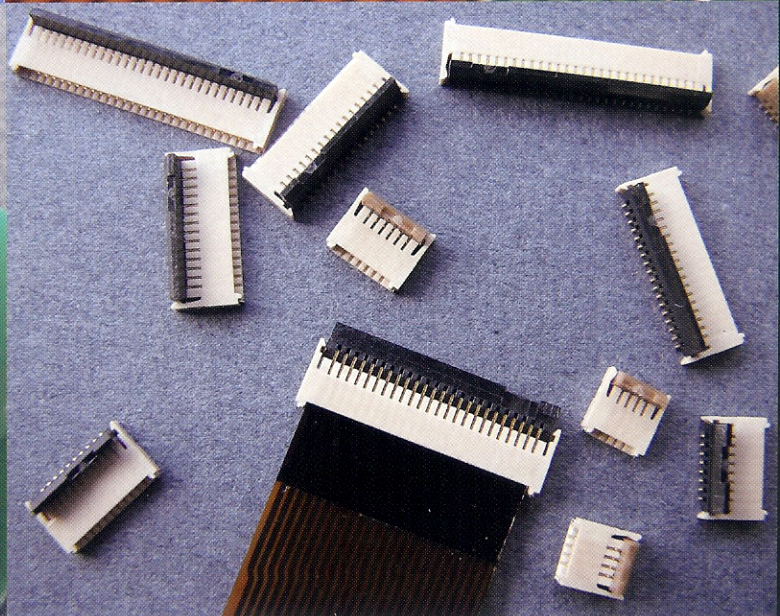
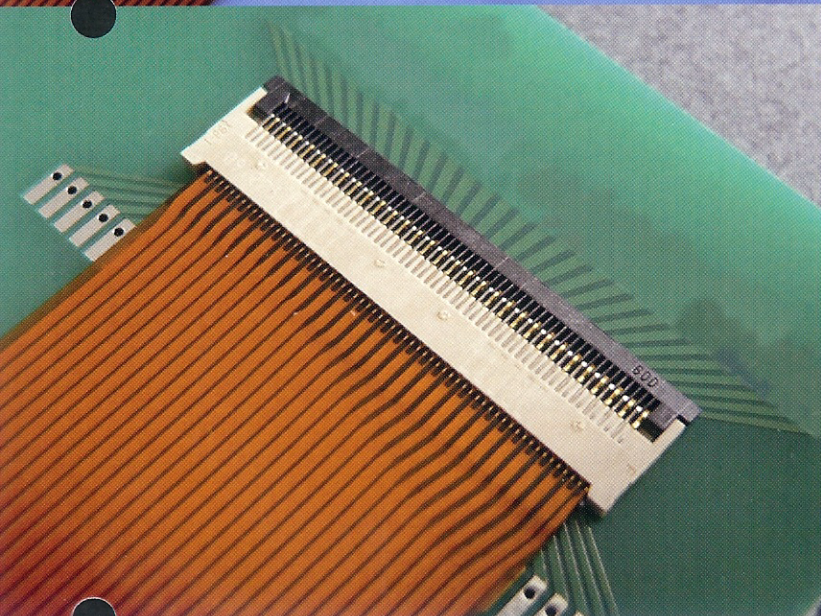
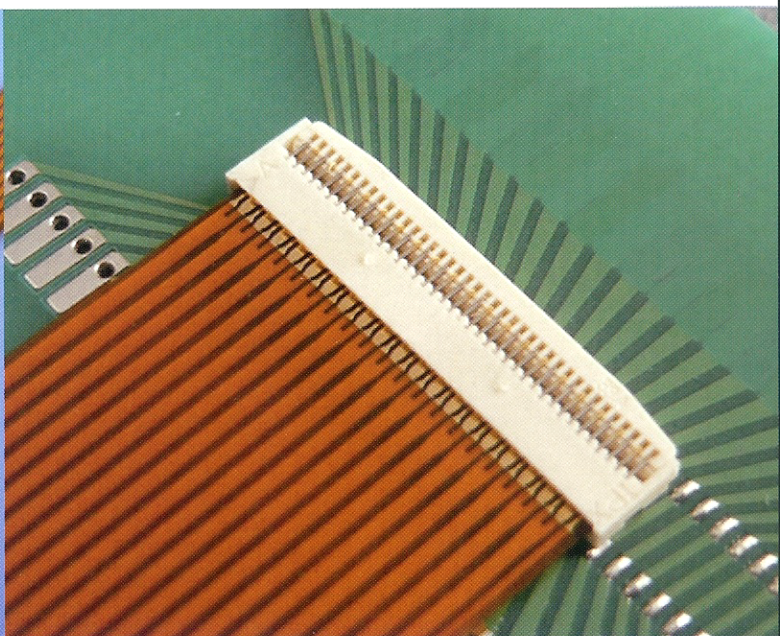
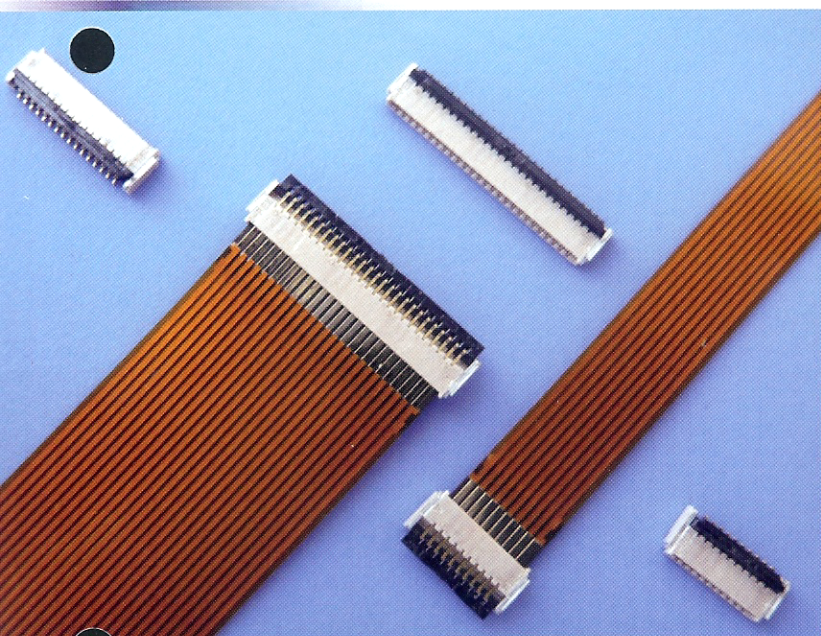


FPC / FFC Connector MINIFLEX SERIES

Lead-Free Compliance



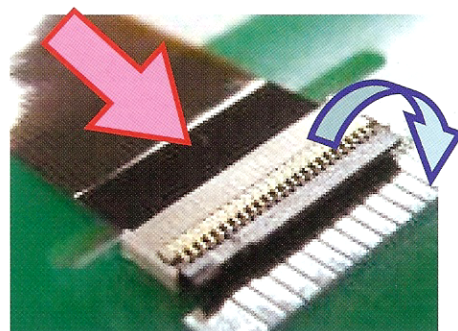
MINIFLEX SERIES Product overview

Pitch	Type	Product Name	P/N	Profile Height	Pin Count	Applicable Thickness of FPC/FFC
0.3mm	Horizontal, Rear Drive Locking, Narrow Type	MINIFLEX3-BFN	20527-***E-**	0.9mm	25p, 27p, 29p, 33p, 39p	0.2mm
	Horizontal, Rear Drive Locking, Type	MINIFLEX3-BF	20417-***E-**	0.9mm	60p	0.2mm
	Horizontal, Rear Drive Locking, Type	MINIFLEX3-BFS	20424-***E-**	0.9mm	60p	0.15mm
	Vertical, Slider Lock Type	MINIFLEX3-VT	20348-***E-**	4.0mm	33p, 39p, 45p	0.2mm
0.5mm	Horizontal, Rear Drive Locking, Narrow Type	MINIFLEX5-BFN	20488-***E-**	1.0mm	4p, 10p, 12p, 16p, 22p, 30p	0.3mm
	Horizontal, Rear Drive Locking, Type	MINIFLEX5-BF	20397-***E-**	1.0mm	4p, 6p, 8p, 10p, 12p, 14p, 16p, 18p, 20p, 22p, 24p, 26, 28p	0.3mm
	Horizontal, Rear Drive Locking, Type	MINIFLEX5-BFS	20398-***E-**	1.0mm	4p, 6p, 8p, 10p, 12p, 14p, 19p, 20p	0.2mm
	Horizontal, Rear Drive Locking, Type	MINIFLEX5-BF II	20477-***E	2.0mm	10p, 22p, 30p, 34p, 40p, 45p, 50p	0.3mm
	Vertical NON-ZIF Type	MINIFLEX5-NV	20305-***E-**	4.0mm	6p, 8p, 10p, 12p, 14p, 16p, 18p, 20p, 22p, 24p, 26p, 28p, 30p	0.3mm

FPC connector Rear Drive Locking type Features

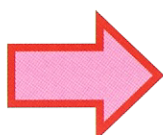
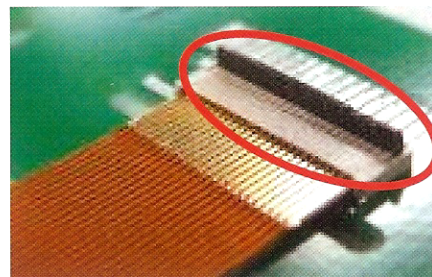
1. Stress-free design

Since insert section of FPC and Flip (Actuator Lock) are independent, stress force doesn't apply on Flip directly. Actuator Lock never POP-UP by withdrawal and peeling forces of FPC.



2. Easy FPC mating

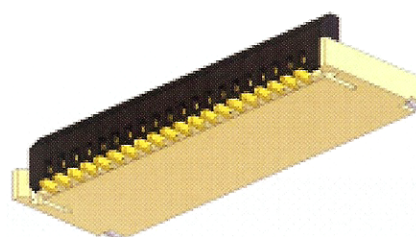
- 2-1. Easy FPC connecting operation with open position of actuators on shipping
- 2-2. Enable to insert along for wall guide and lock FPC by using just one hand



Simplify the operation to connect FPC

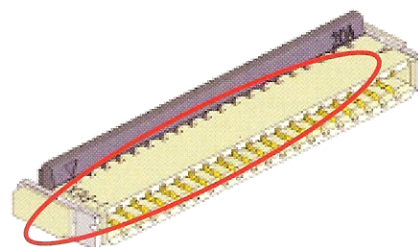
3. Over molding design

Over-molding structure on bottom side which enable to make pattern for wiring on PCB.



4. Prevention of dust particles

Since the connecting point is surrounded by tetrahedral aspects, the connection point is less exposed and prevents dust particles from causing a poor connection.



MINIFLEX3-BFN

0.3mm Pitch

Horizontal Type
Rear Drive Locking Type
Narrow Type



- Profile Height : 0.9mm
- Depth : 3.0mm (with actuator closed) Narrow Type
The base projected area is reduced 55% (compared with MINIFLEX3-BF)
- Higher reliability structure
- Enhanced temporary hold mechanism by LIF structure
- Prevention of half lock by the unique actuator design
- Applicable for 0.2mm FPC thickness.
Smooth operation for FPC insertion.

【Number of Positions】

25p, 27p, 29p, 33p, 39p
(Projected : 15p ~ 60p)

【Applicable Thickness of FPC】

FPC Thickness	0.2 ±0.03mm
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【Ordering Code】

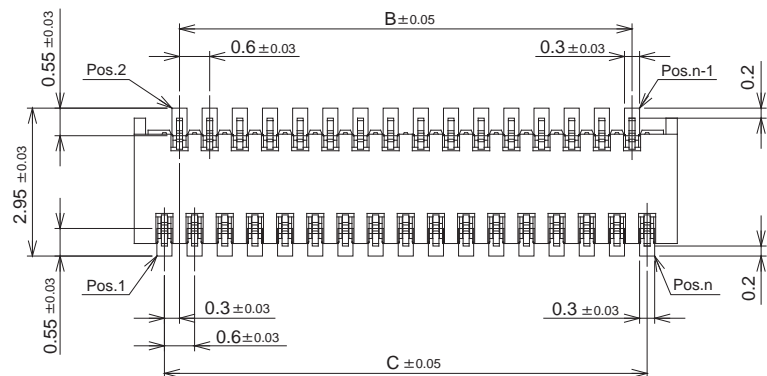
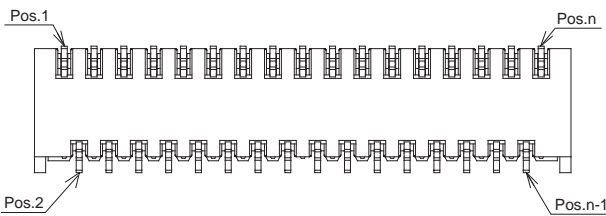
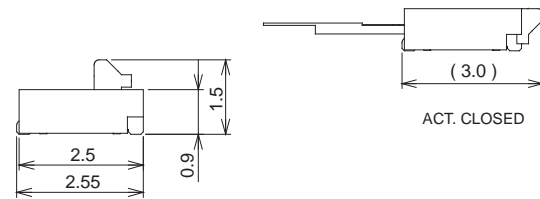
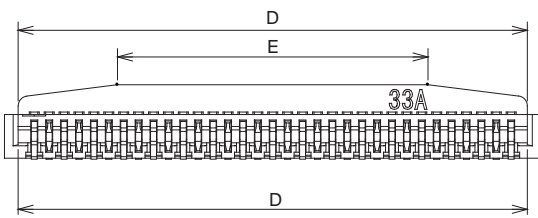
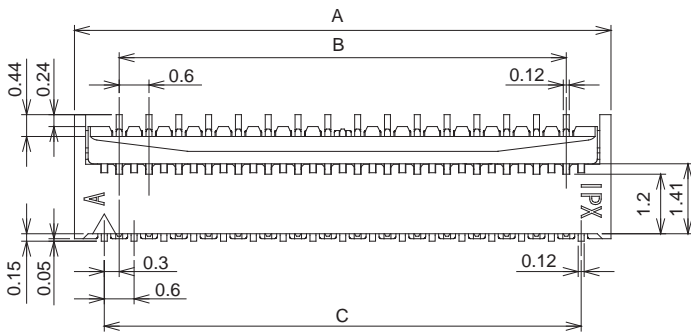
20527- 0 ** E - **01**
① ②

①	POS.	25: 25pos 27: 27pos 29: 29pos 33: 33pos 39: 39pos	
②	Packaging	E	Emboss Tape

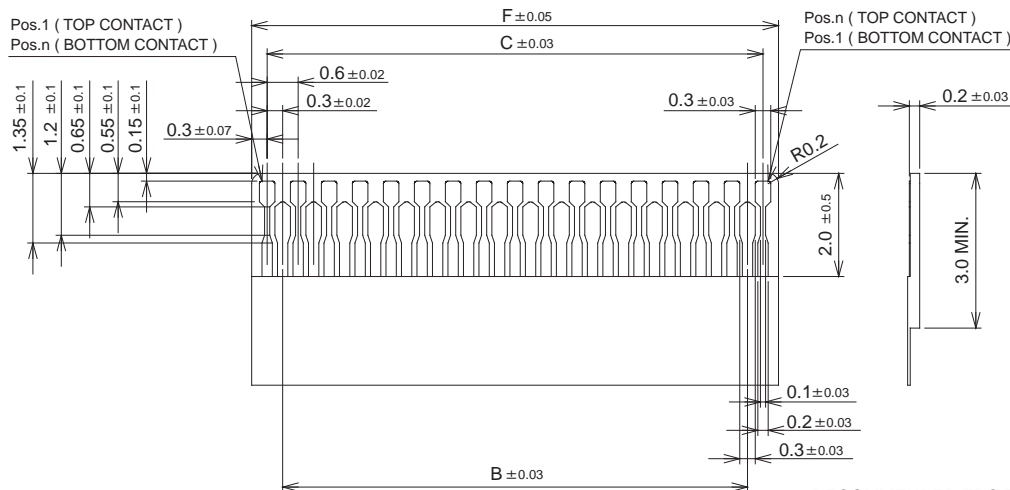
【Material / Finish】

Parts	Material	Plating / Color
HOUSING	LCP UL94V-0	NATURAL
ACTUATOR	LCP UL94V-0	NATURAL
CONTACT A	COPPER ALLOY	Au
CONTACT B	COPPER ALLOY	Au (with Ni stripe)

POS.	A	B	C	D	E
25p	8.4	6.6	7.2	7.85	3.85
27p	9.0	7.2	7.8	8.45	4.45
29p	9.6	7.8	8.4	9.05	5.05
33p	10.8	9.0	9.6	10.25	6.25
39p	12.6	10.8	11.4	12.05	8.05



RECOMMENDED PATTERN LAYOUT

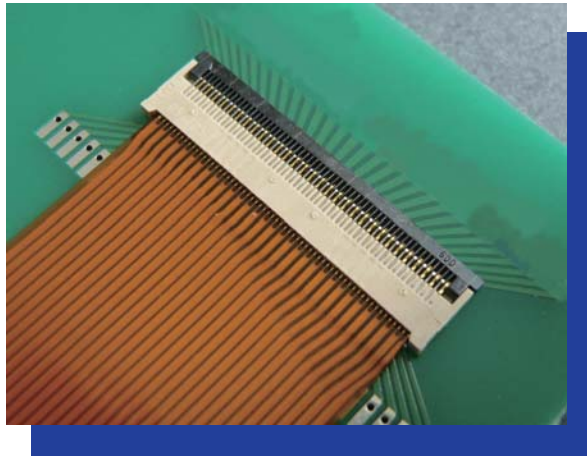


RECOMMENDED FPC PATTERN

MINIFLEX3-BF

0.3mm Pitch

Horizontal Type
Rear Drive Locking Type



- Profile Height : 0.9mm
- Reduced actuator loading force by Sequential lock
- Strong FPC retention with “Rear Drive” Lock
- Easy FPC connecting operation with open position of actuators on shipping
- Available for either top or bottom FPC conductor

【Number of Position】

60p

【Applicable Thickness of FPC】

FPC Thickness	0.2 ±0.03mm
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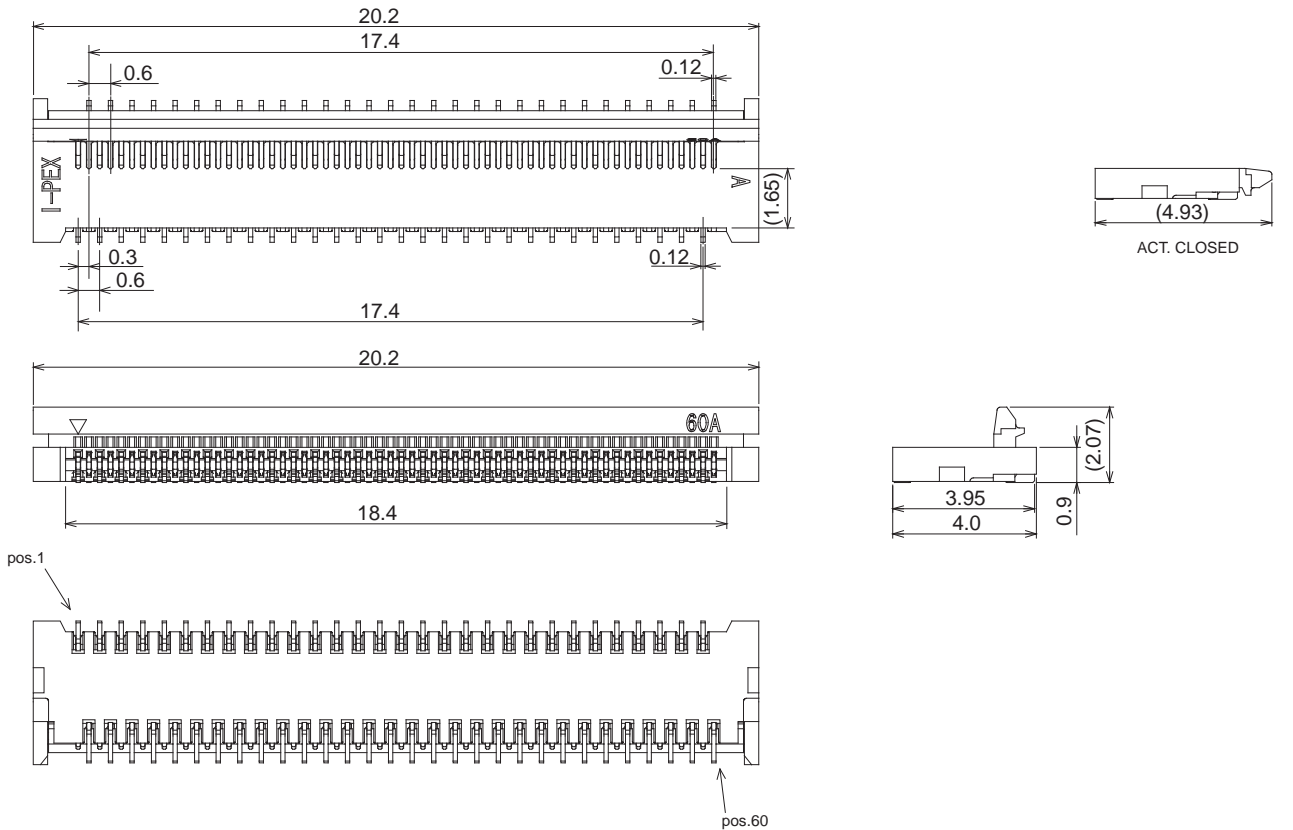
【Ordering Code】

20417- 060 E - 01
①

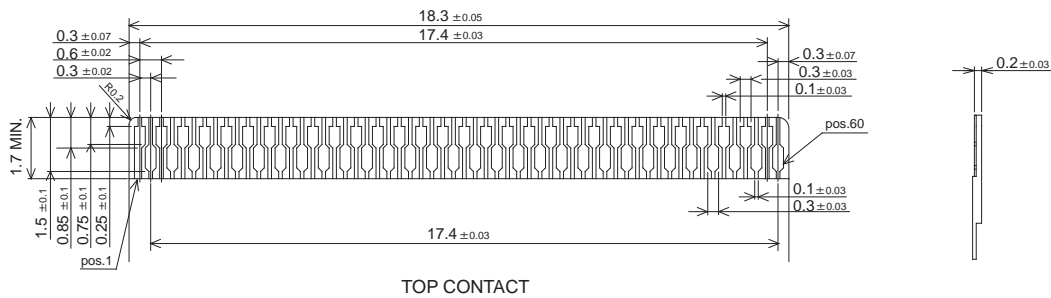
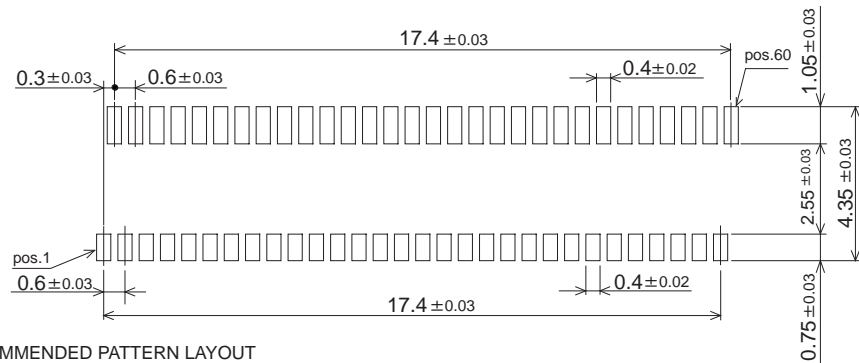
①	Packaging	E	Emboss Tape
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【Material / Finish】

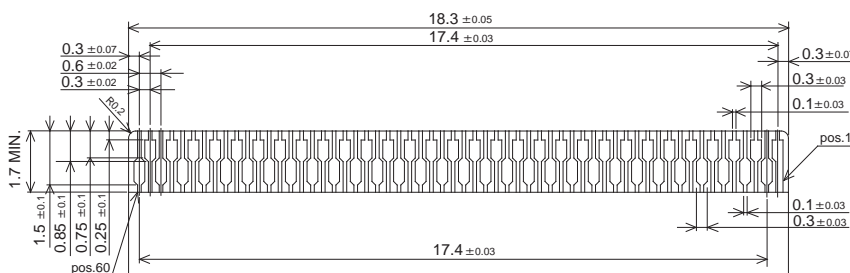
Parts	Material	Plating / Color
HOUSING	LCP UL94V-0	NATURAL
ACTUATOR	LCP UL94V-0	BLACK
CONTACT A	COPPER ALLOY	Au
CONTACT B	COPPER ALLOY	Au (with Ni stripe)



RECOMMENDED PATTERN LAYOUT



TOP CONTACT



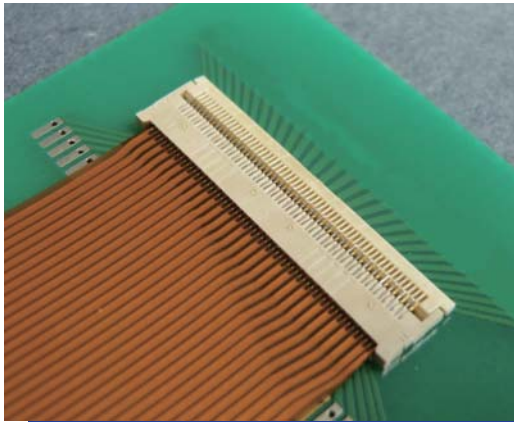
BOTTOM CONTACT

RECOMMENDED FPC PATTERN

MINIFLEX3-BFS

0.3mm Pitch

Horizontal Type
Rear Drive Locking Type



- Profile Height : 0.9mm
- Reduced actuator loading force by Sequential lock
- Strong FPC retention with “Rear Drive” Lock
- Easy FPC connecting operation with open position of actuators on shipping
- Available for either top or bottom FPC conductor

【Number of Position】

60p

【Applicable Thickness of FPC】

FPC Thickness	0.15 ±0.03mm
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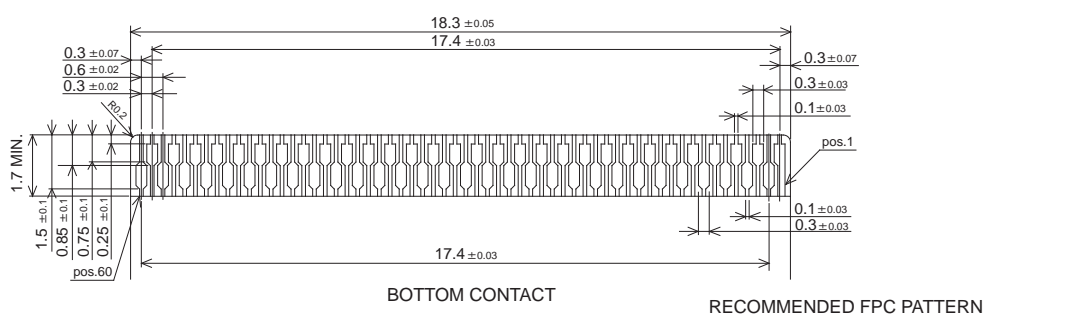
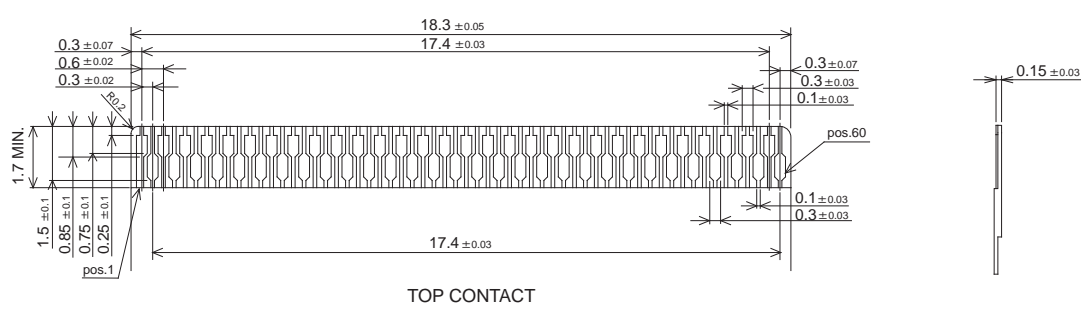
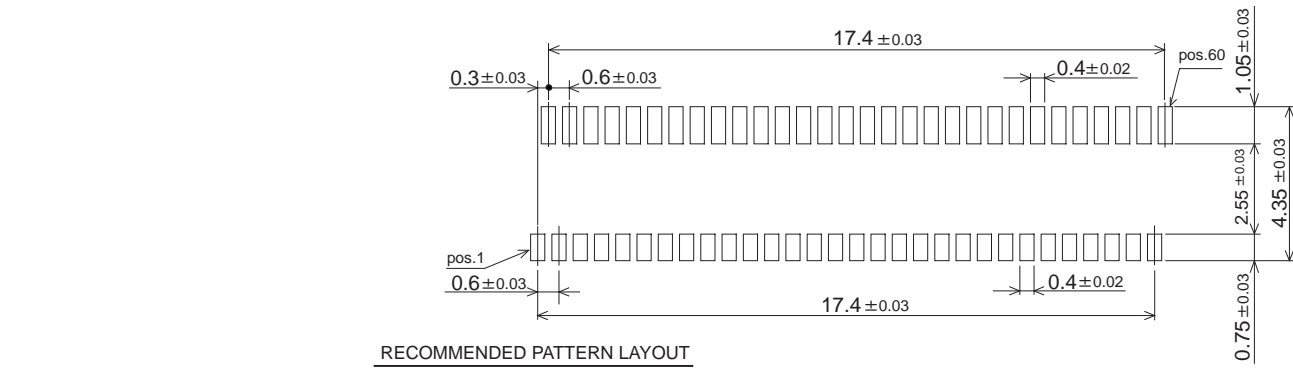
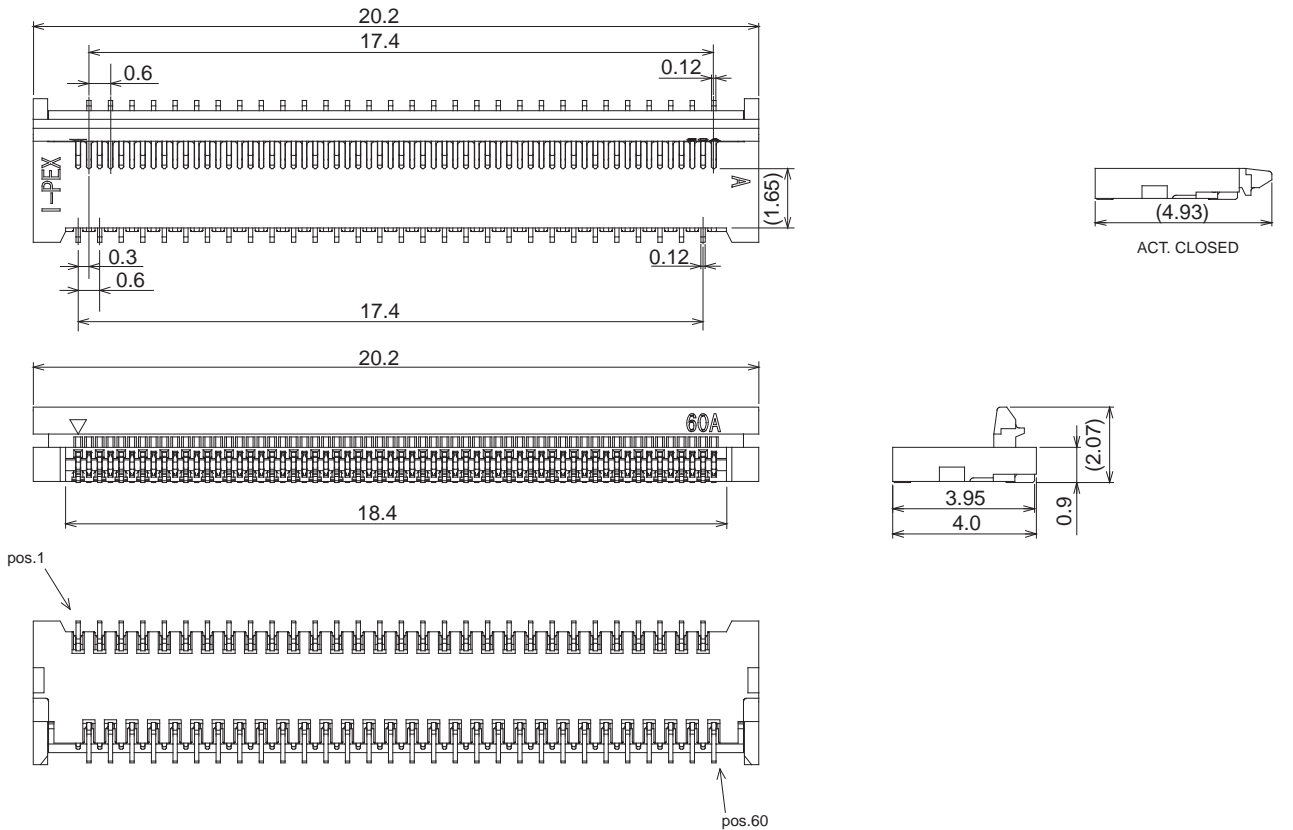
【Ordering Code】

20424- 060 E - 01
①

①	Packaging	E	Emboss Tape
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【Material / Finish】

Parts	Material	Plating / Color
HOUSING	LCP UL94V-0	NATURAL
ACTUATOR	LCP UL94V-0	NATURAL
CONTACT A	COPPER ALLOY	Au
CONTACT B	COPPER ALLOY	Au (with Ni stripe)

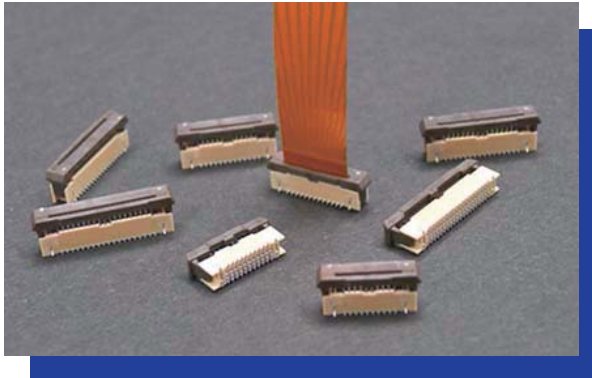


RECOMMENDED FPC PATTERN

MINIFLEX3-VT

0.3mm Pitch

**Vertical Type
Slider Lock Type**



- Profile Height : 4.0mm (Slider Locked)
- Reduced 30% of occupied area on PCB as compared with horizontal type FPC connector
- ZIF (Zero Insertion Force) design makes easy FPC insertion
- Temporary hold mechanism of FPC

【Number of Positions】

33p, 39p, 45p

【Applicable Thickness of FPC】

FPC Thickness	0.2 ±0.03mm
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【Ordering Code】

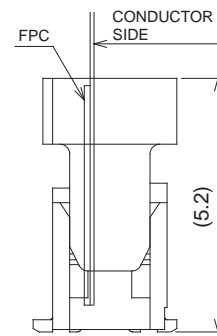
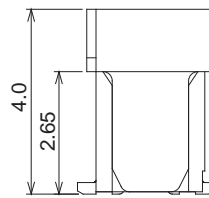
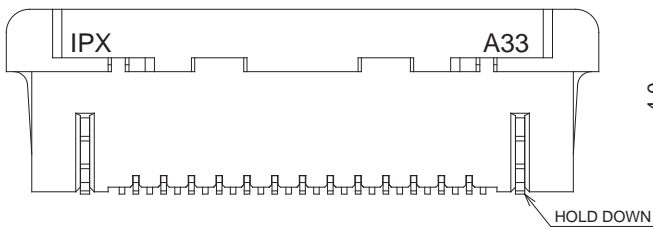
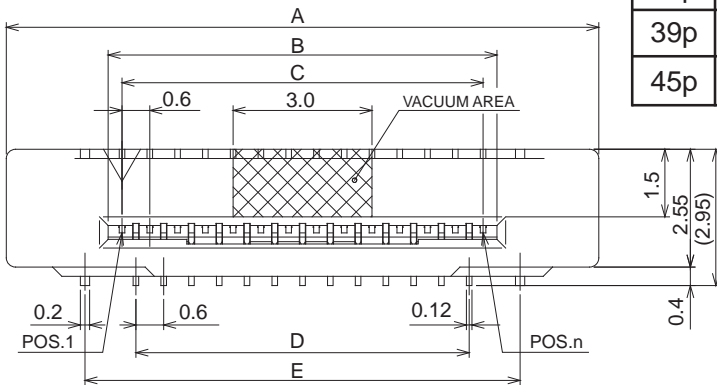
20348- 0 ** E - 11
 ① ②

①	POS.	33: 33pos	39: 39pos	45: 45pos
②	Packaging	E	Emboss Tape	

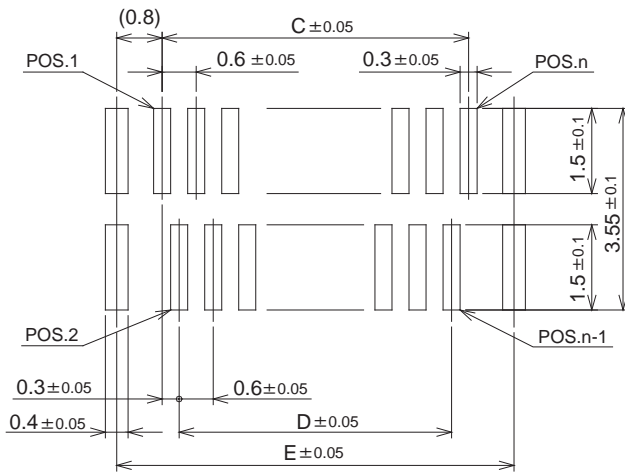
【Material / Finish】

Parts	Material	Plating / Color
HOUSING	LCP UL94V-0	NATURAL
SLIDER	9TPA UL94V-0	BROWN
CONTACT A	COPPER ALLOY	Au (with Ni stripe)
CONTACT B	COPPER ALLOY	Au
HOLD DOWN	COPPER ALLOY	Sn

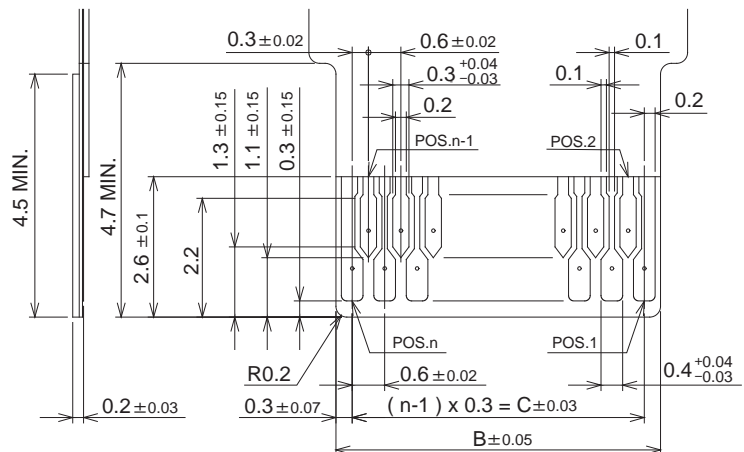
POS.	Part NO.	A	B	C	D	E
33p	20348-033E-11	14.6	10.2	9.6	9.0	11.2
39p	20348-039E-11	16.4	12.0	11.4	10.8	13.0
45p	20348-045E-11	18.2	13.8	13.2	12.6	14.8



SLIDER OPENED STATE



RECOMMENDED PATTERN LAYOUT



RECOMMENDED FPC PATTERN

MINIFLEX5-BFN

0.5mm Pitch Horizontal Type
Rear Drive Locking Type
Narrow Type



- Profile Height : 1.0mm
- Depth : 3.5mm (with actuator closed) Narrow Type
The base projected area is reduced 29% (compared with MINIFLEX5-BF)
- Higher reliability structure
- The unique Cam structure prevents the actuator from coming off
- Available for either top or bottom FPC conductor
- Applicable for 0.3mm FPC thickness. Smooth operation for FPC insertion.

【Number of Positions】

4p, 10p, 12p, 16p, 22p, 30p

【Applicable Thickness of FPC】

FPC Thickness	0.3 ±0.05mm
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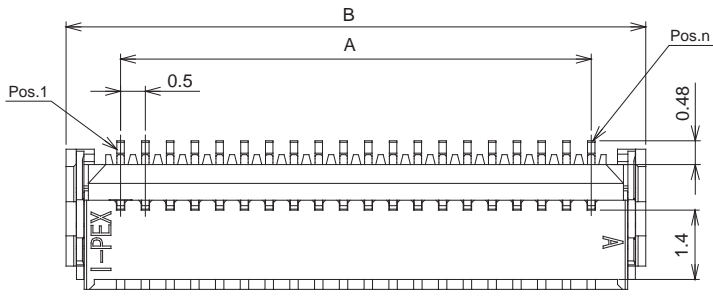
【Ordering Code】

20488- 0 ** E - 01
 ① ②

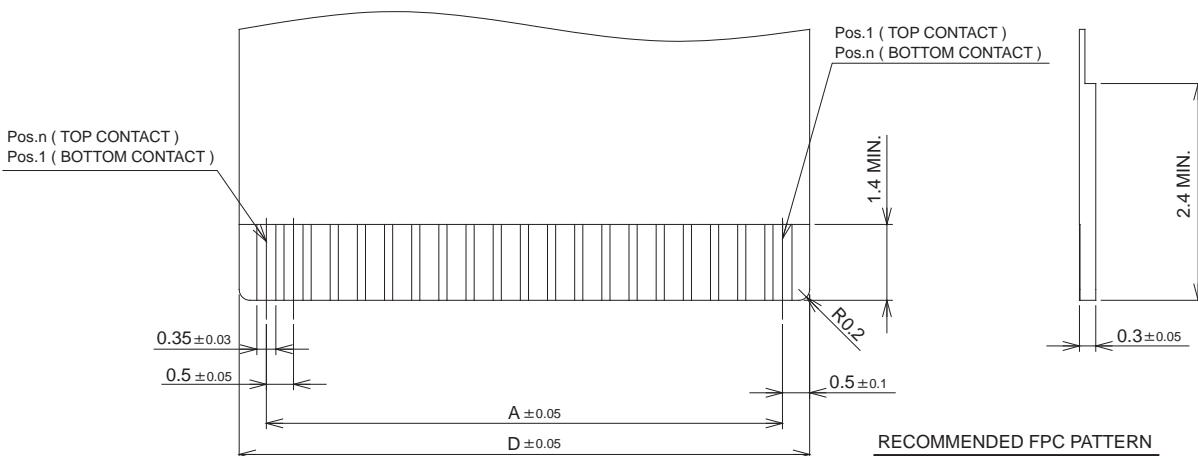
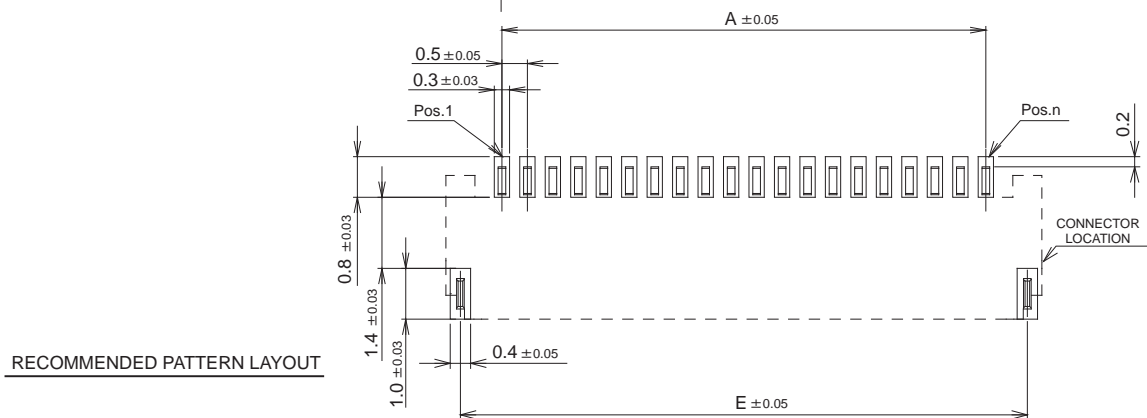
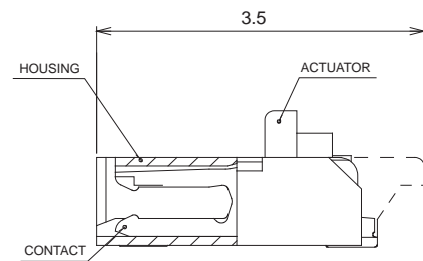
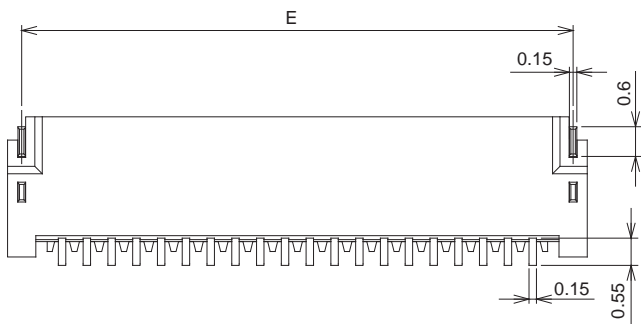
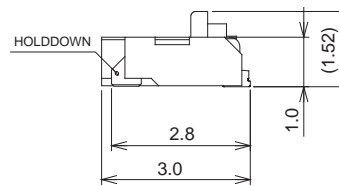
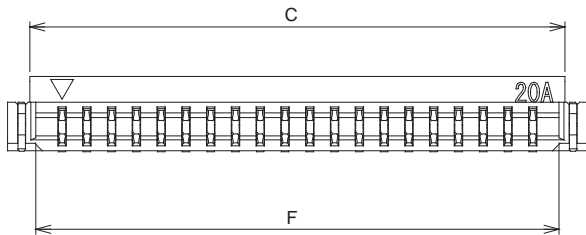
①	POS.	04: 4pos 10: 10pos 12: 12pos 16: 16pos 22: 22pos 30: 30pos	
②	Packaging	E	Emboss Tape

【Material / Finish】

Parts	Material	Plating / Color
HOUSING	LCP UL94V-0	NATURAL
ACTUATOR	PPS UL94V-0	BLACK
CONTACT	COPPER ALLOY	Au
HOLD DOWN	COPPER ALLOY	Su



POS.	A	B	C	D	E	F
4p	1.5	3.7	2.8	2.5	3.15	2.56
10p	4.5	6.7	5.8	5.5	6.15	5.56
12p	5.5	7.7	6.8	6.5	7.15	6.56
16p	7.5	9.7	8.8	8.5	9.15	8.56
22p	10.5	12.7	11.8	11.5	12.15	11.56
30p	14.5	16.7	15.8	15.5	16.15	15.56



MINIFLEX5-BF

0.5mm Pitch

Horizontal Type
Rear Drive Locking Type



- Profile Height : 1.0mm
- Higher reliability structure and compact size
- Strong FPC retention with “Rear Drive” Lock.
- Available for either top or bottom FPC conductor
- Applicable for 0.3mm FPC thickness.
Smooth operation for FPC insertion.

【Number of Positions】

4p, 6p, 8p, 10p, 12p, 14p, 16p
18p, 20p, 22p, 24p, 26p, 28p

【Applicable Thickness of FPC】

FPC Thickness	0.3 ±0.05mm
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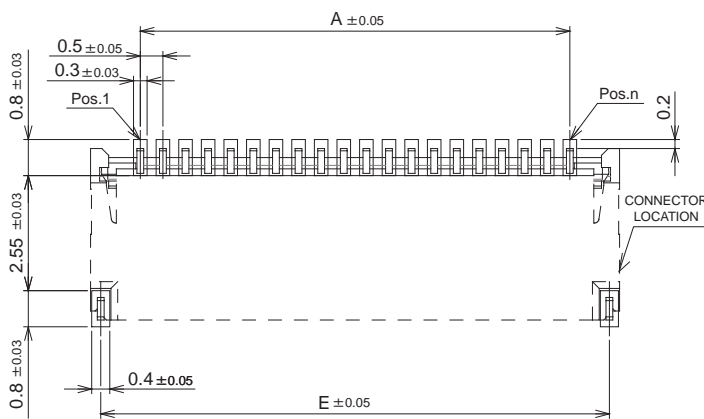
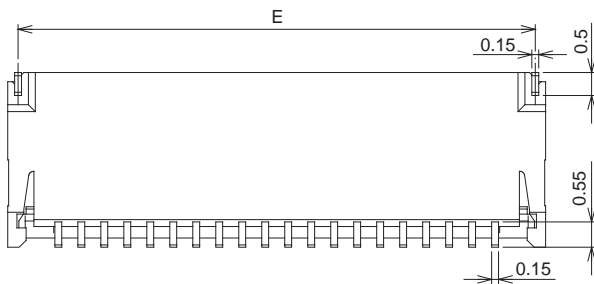
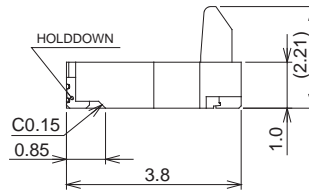
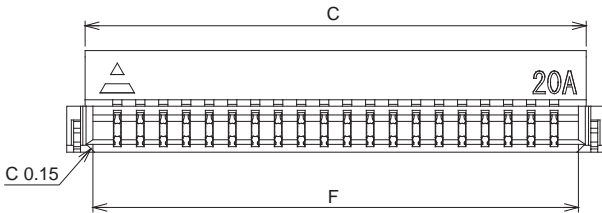
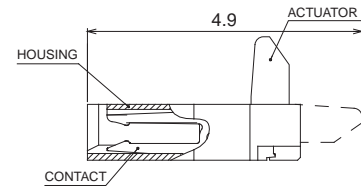
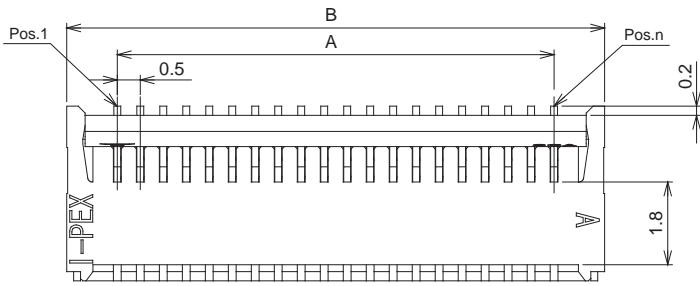
【Ordering Code】

20397- 0 ** E - **02**
① ②

①	POS.	04: 4pos 06: 6pos 08: 8pos 10: 10pos 12: 12pos 14: 14pos 16: 16pos 18: 18pos 20: 20pos 22: 22pos 24: 24pos 26: 26pos 28: 28pos	
②	Packaging	E	Emboss Tape

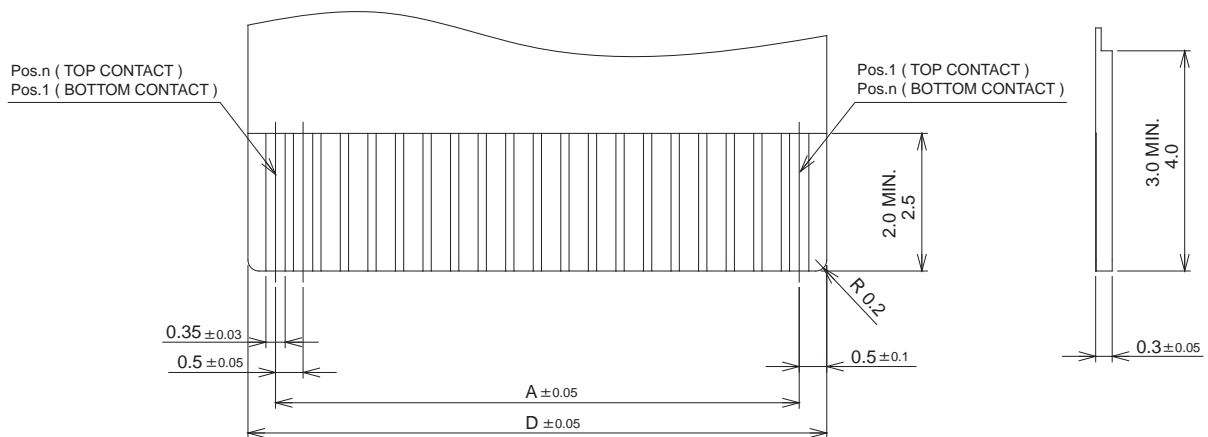
【Material / Finish】

Parts	Material	Plating / Color
HOUSING	LCP UL94V-0	NATURAL
ACTUATOR	PPS UL94V-0	BLACK
CONTACT	COPPER ALLOY	Au
HOLD DOWN	COPPER ALLOY	Su



POS.	A	B	C	D	E	F
4p	1.5	3.7	2.9	2.5	3.25	2.56
6p	2.5	4.7	3.9	3.5	4.25	3.56
8p	3.5	5.7	4.9	4.5	5.25	4.56
10p	4.5	6.7	5.9	5.5	6.25	5.56
12p	5.5	7.7	6.9	6.5	7.25	6.56
14p	6.5	8.7	7.9	7.5	8.25	7.56
16p	7.5	9.7	8.9	8.5	9.25	8.56
18p	8.5	10.7	9.9	9.5	10.25	9.56
20p	9.5	11.7	10.9	10.5	11.25	10.56
22p	10.5	12.7	11.9	11.5	12.25	11.56
24p	11.5	13.7	12.9	12.5	13.25	12.56
26p	12.5	14.7	13.9	13.5	14.25	13.56
28p	13.5	15.7	14.9	14.5	15.25	14.56

RECOMMENDED PATTERN LAYOUT

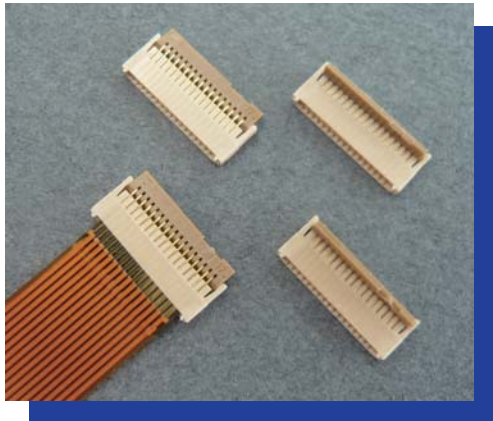


RECOMMENDED FPC PATTERN

MINIFLEX5-BFS

0.5mm Pitch

Horizontal Type
Rear Drive Locking Type



- Profile Height : 1.0mm
- Higher reliability structure and compact size
- Strong FPC retention with "Rear Drive" Lock.
- Available for either top or bottom FPC conductor

【Number of Positions】

4p, 6p, 8p, 10p, 12p,
14p, 19p, 20p

【Applicable Thickness of FPC】

FPC Thickness	0.2 ±0.03mm
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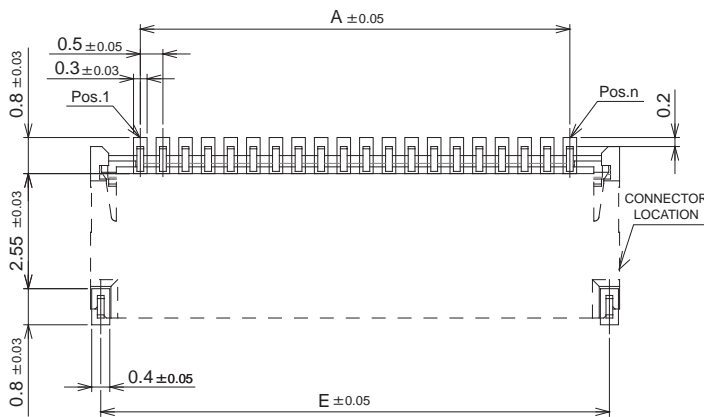
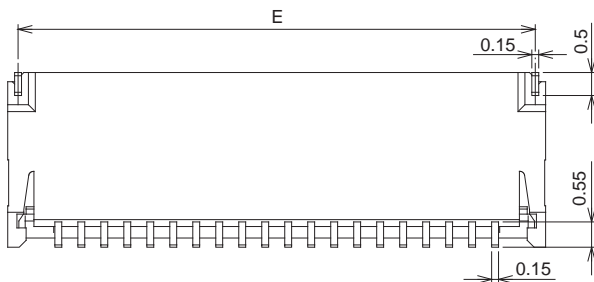
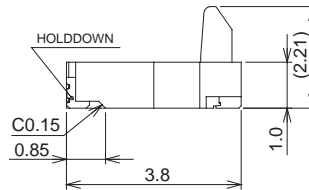
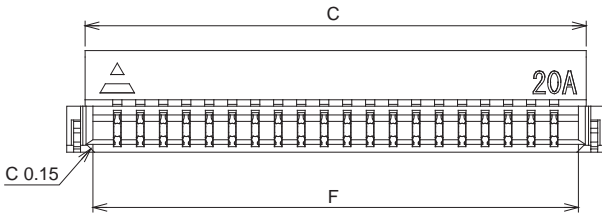
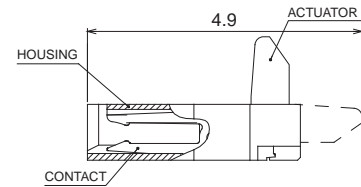
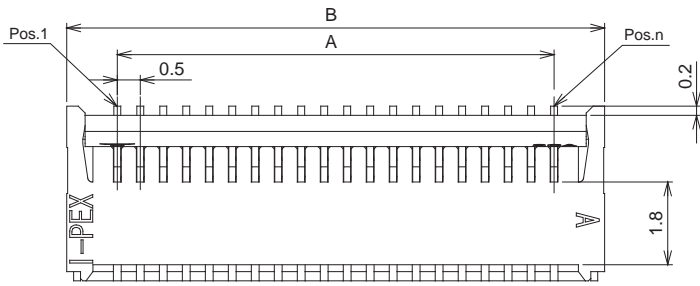
【Ordering Code】

20398- 0 ** E - 02
 ① ②

①	POS.	04: 4pos 06: 6pos 08: 8pos 10: 10pos 12: 12pos 14: 14pos 19: 19pos 20: 20pos	
②	Packaging	E	Emboss Tape

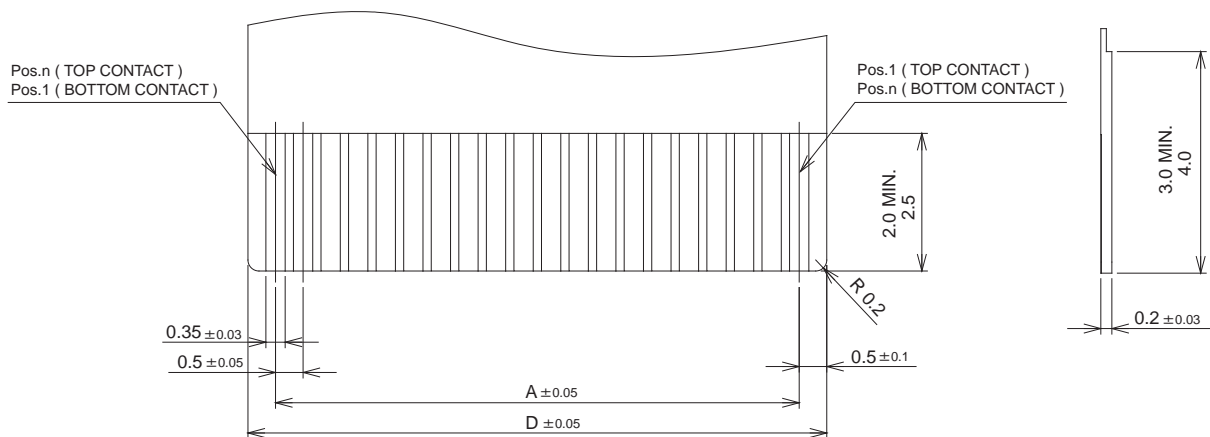
【Material / Finish】

Parts	Material	Plating / Color
HOUSING	LCP UL94V-0	NATURAL
ACTUATOR	PPS UL94V-0	BEIGE
CONTACT	COPPER ALLOY	Au
HOLD DOWN	COPPER ALLOY	Su



POS.	A	B	C	D	E	F
4p	1.5	3.7	2.9	2.5	3.25	2.56
6p	2.5	4.7	3.9	3.5	4.25	3.56
8p	3.5	5.7	4.9	4.5	5.25	4.56
10p	4.5	6.7	5.9	5.5	6.25	5.56
12p	5.5	7.7	6.9	6.5	7.25	6.56
14p	6.5	8.7	7.9	7.5	8.25	7.56
19p	9.0	11.2	10.4	10.0	10.75	10.06
20p	9.5	11.7	10.9	10.5	11.25	10.56

RECOMMENDED PATTERN LAYOUT



RECOMMENDED FPC PATTERN

MINIFLEX5-BF II 0.5mm Pitch Horizontal Type Rear Drive Locking Type



- Profile Height : 2.0mm
- High reliability structure and rugged operation
- Strong FPC retention with “Rear Drive” Lock
- Reliable design includes long FPC insertion guide, and high FPC retention force
- Available for either top or bottom FPC conductor

【Number of Positions】

10p, 22p, 30p, 34p,
40p, 45p, 50p

【Applicable Thickness of FPC】

FPC Thickness	0.3 ±0.05mm
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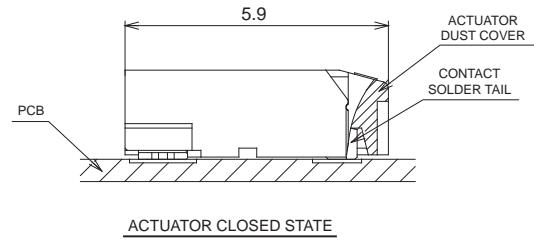
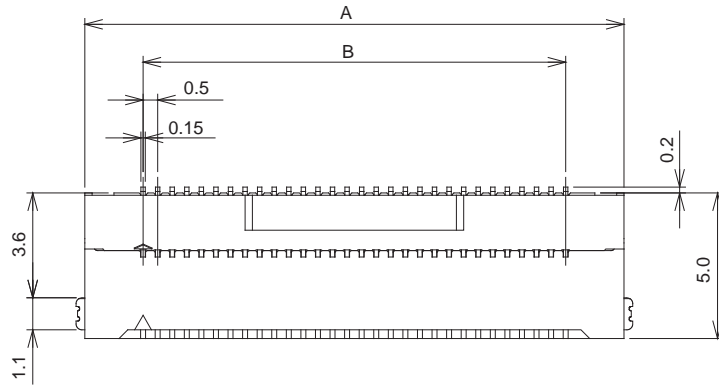
【Ordering Code】

20477- 0 ** E
① ②

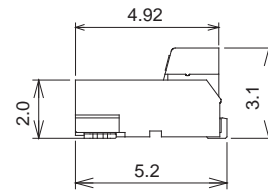
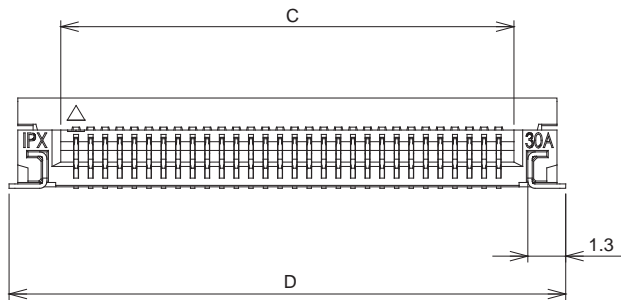
①	POS.	10: 10pos 22: 22pos 30: 30pos 34: 34pos 40: 40pos 45: 45pos 50: 50pos	
②	Packaging	E	Emboss Tape

【Material / Finish】

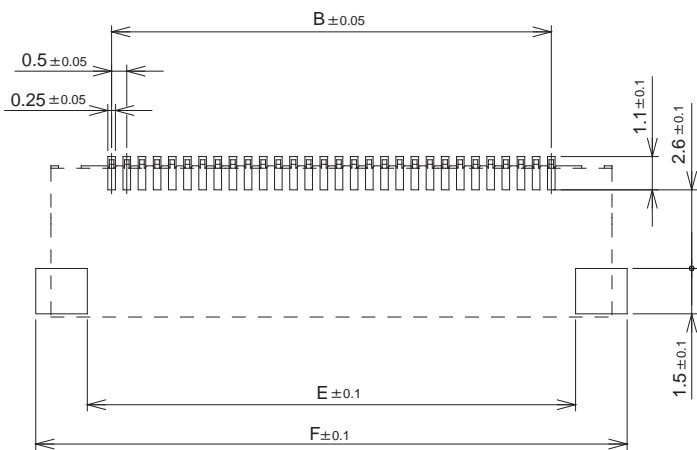
Parts	Material	Plating / Color
HOUSING	LCP UL94V-0	NATURAL
ACTUATOR	LCP UL94V-0	BLACK
CONTACT	COPPER ALLOY	Au
HOLD DOWN	COPPER ALLOY	Su



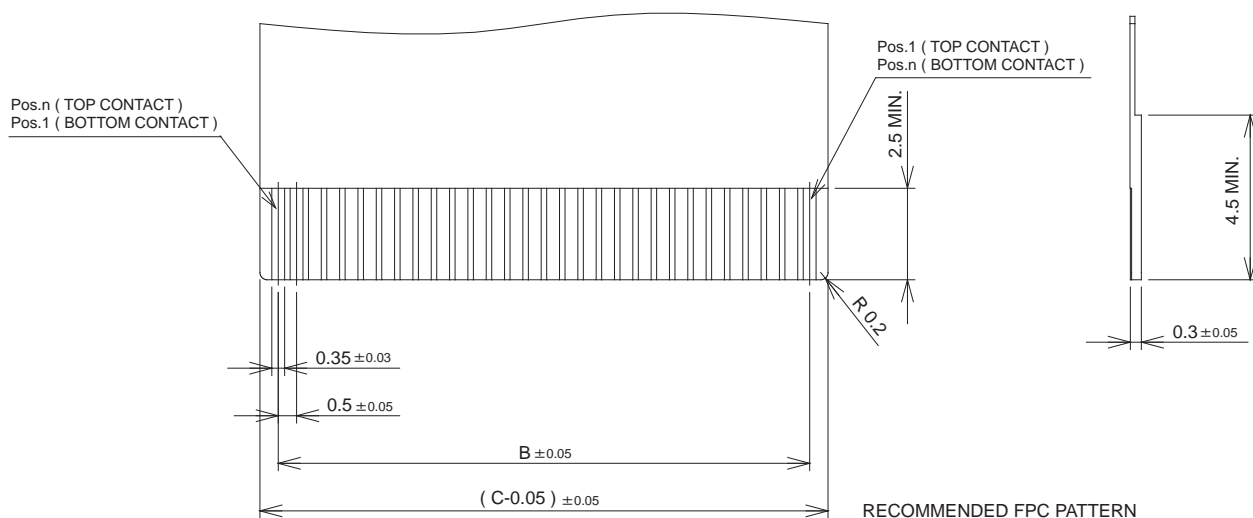
ACTUATOR CLOSED STATE



POS.	A	B	C	D	E	F
10p	8.5	4.5	5.55	9.1	6.1	9.5
22p	14.5	10.5	11.55	15.1	12.1	15.5
30p	18.5	14.5	15.55	19.1	16.1	19.5
34p	20.5	16.5	17.55	21.1	18.1	21.5
40p	23.5	19.5	20.55	24.1	21.1	24.5
45p	26.0	22.0	23.05	26.6	23.6	27.0
50p	28.5	24.5	25.05	29.1	26.1	29.5



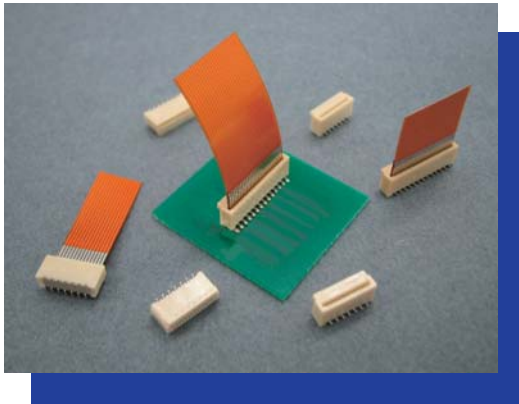
RECOMMENDED PATTERN LAYOUT



RECOMMENDED FPC PATTERN

MINIFLEX5-NV

0.5mm Pitch Vertical Type
NON-ZIF Type



- Profile Height : 4.0mm
- The unique design of contact provides easy, reliable FPC mating.
- Higher reliability is secured.
- Wide range of the product line up

【Number of Positions】

6p, 8p, 10p, 12p, 14p, 16p, 18p,
20p, 22p, 24p, 26p, 28p, 30p

【Applicable Thickness of FPC】

FPC Thickness	0.3 ±0.05mm
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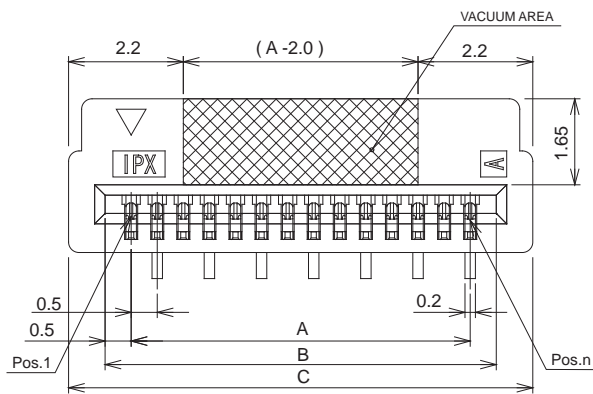
【Ordering Code】

20305- 0 ** E - 02
 ① ②

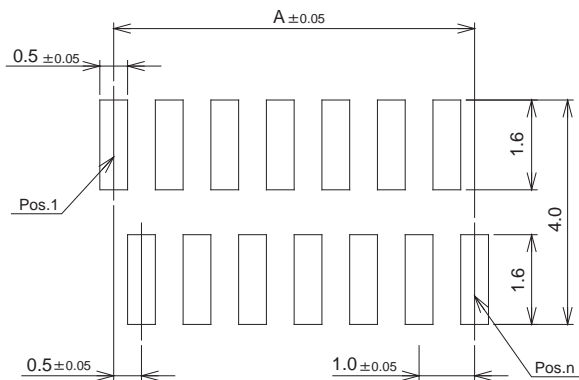
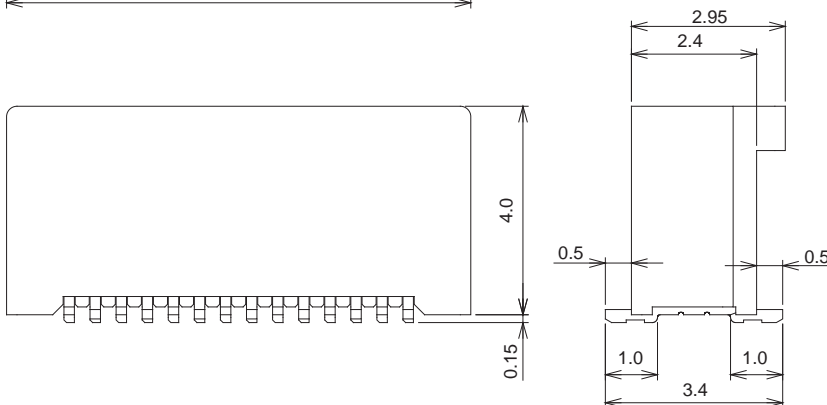
①	POS.	06: 6pos 08: 8pos 10: 10pos 12: 12pos 14: 14pos 16: 16pos 18: 18pos 20: 20pos 22: 22pos 24: 24pos 26: 26pos 28: 28pos 30: 30pos	
②	Packaging	E	Emboss Tape

【Material / Finish】

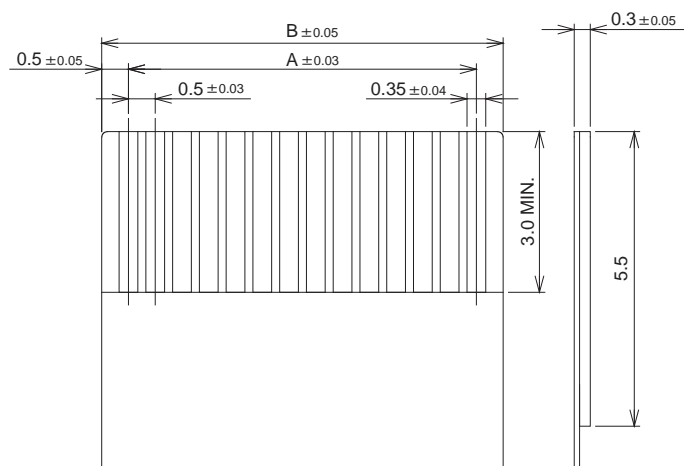
Parts	Material	Plating / Color
HOUSING	PPS UL94V-0	NATURAL
CONTACT	COPPER ALLOY	Au



POS.	A	B	C
6p	2.5	3.5	4.9
8p	3.5	4.5	5.9
10p	4.5	5.5	6.9
12p	5.5	6.5	7.9
14p	6.5	7.5	8.9
16p	7.5	8.5	9.9
18p	8.5	9.5	10.9
20p	9.5	10.5	11.9
22p	10.5	11.5	12.9
24p	11.5	12.5	13.9
26p	12.5	13.5	14.9
28p	13.5	14.5	15.9
30p	14.5	15.5	16.9



RECOMMENDED PATTERN LAYOUT



RECOMMENDED FPC PATTERN



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