



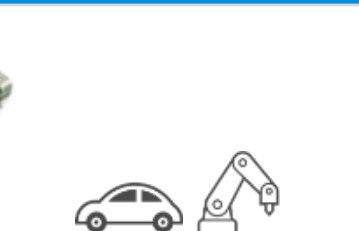







EVAFLEX® Series - Auto-Locking FFC/FPC Connectors*

* All EVAFLEX® series designed by **Mechanical Lock** and **Hold Down**

↓ Click the photos below to get more detailed product information.

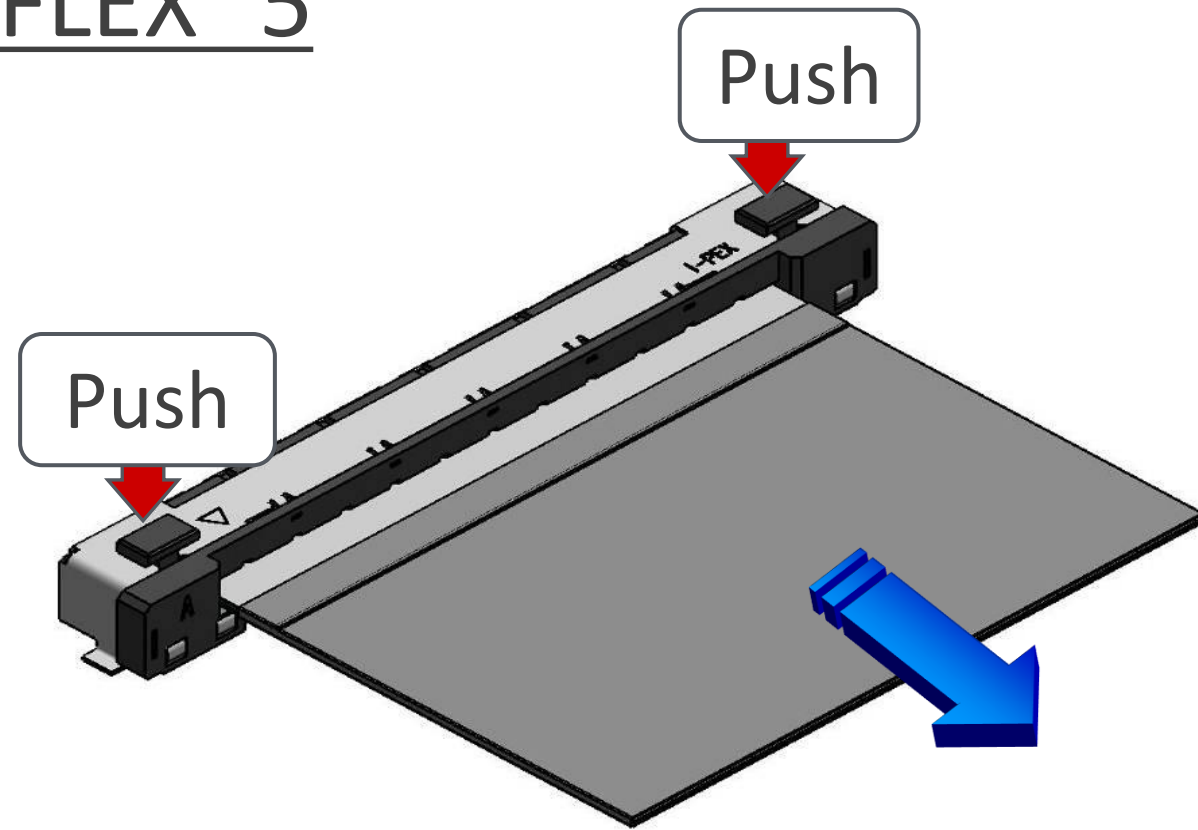
Product Name	EVAFLEX® 5-HD	EVAFLEX® 5-SE-G VT	EVAFLEX® 5-SE-G HT	EVAFLEX® 5-VS	EVAFLEX® 5-VS TYPE CH	EVAFLEX® 5-SE	EVAFLEX® 5-SE VT	EVAFLEX® 5
Feature	 ZenShield® Full-Shielded High-speed (10+Gbps) FFC/FPC connector	 One hand operation, Auto-locking connector Hold down (ground) for high-speed (4 Gbps)	 One hand operation, Auto-locking connector Hold down (ground) for high-speed (4 Gbps)	 PC panel industry standard footprint Shielded / Non-shielded High-speed (8+Gbps)	 PC panel industry standard footprint Shielded / Non-shielded High-speed (8+Gbps)	 Non-shielded Horizontal mate	 Non-shielded Vertical mate	 TV panel industry standard footprint Shielded High-speed (16Gbps)
Part number	20952	20799	20899	20535	20720	20526	20539	20818
Un-lock mechanism	Open top cover	Press the release button	Push on top	Push down on the shell		Push down 2 buttons	Press the release button	Push down 2 buttons
Mating Type	Horizontal	Vertical	Horizontal	Horizontal		Horizontal	Vertical	Horizontal
Pitch (mm)	0.5							
Pin count	Range	10 - 40		20 - 60		10 - 50		10 - 60
	Available	24	20, 30, 40, 50, 60		30, 50		10, 15, 20, 24, 30, 40, 50	
Size (mm)	Height	2.00 +/- 0.20	6.6 +/- 0.30		3.65 +/- 0.20		1.90 +/- 0.10	
	Width formula	5.2 + (0.5*?p)	8.00 + (0.5*?p)		8.00 + (0.5*?p)		6.25 + (0.5*?p)	
	Depth	8.43 +/- 0.30	3.90 +/- 0.20		7.00 +/- 0.30		4.95 +/- 0.20	
Wiping length (mm)	1.00	1.20		1.10		1.45	1.20	1.75
FFC/FPC insertion depth (mm)	4.30	5.35		3.30		3.80	4.20	4.30
FFC/FPC type	Shielded FFC	Shielded FFC, Non-shielded FFC/FPC				Non-shielded FFC/FPC		
FFC/FPC thickness (mm)	0.33 +/- 0.03	0.30 +/- 0.03		0.33 +/- 0.03		FPC : 0.30 +/- 0.03 FFC : 0.30 +/- 0.05	0.30 +/- 0.05	0.33 +/- 0.03
Contact point	Top	Signal contact tail side	Bottom		Top		Top	Signal contact tail side
Compatibility (Footprint pattern)	Original			CABLINER®-VS		Original		
Current rating	0.30A/pin	0.35A/pin		0.30A/pin		0.35A/pin		
Performance (Reference only)	USB4 (20 Gbps/lane) USB 3.1 Gen 2 (10 Gbps) USB 3.1Gen 1 (5 Gbps) V-By-One HS 1.4 (4 Gbps)	eDP HBR (5.4 Gbps) V-By-One HS 1.4 (4 Gbps)		USB 3.1 Gen 1 (5 Gbps) eDP HBR (8.1 Gbps) HDMI 2.0 (6 Gbps) V-By-One HS 1.4 (4 Gbps) MiPi standards		LVDS		
Operating condition	233~358K (-40°C~+85°C) 85%RH max.	233~398K (-40°C ~ +125°C) 85%RH max.		233~358K (-40°C~+85°C) 85%RH max.	233~378k (-40°C~+105°C) 85%RH max	233~398K (-40°C~+125°C) 85%RH max.	233~358K (-40°C~+85°C) 85%RH max.	233~358K (-40°C~+85°C) 85%RH max.
Automotive Standards		USCAR-2 (*)		USCAR-2 (*)				

Note : (*) 40P tested. 2.5.6 Vibration & Shock V1 evaluation passed.

Auto-Locking FFC/FPC Connector - EVAFLEX® series -

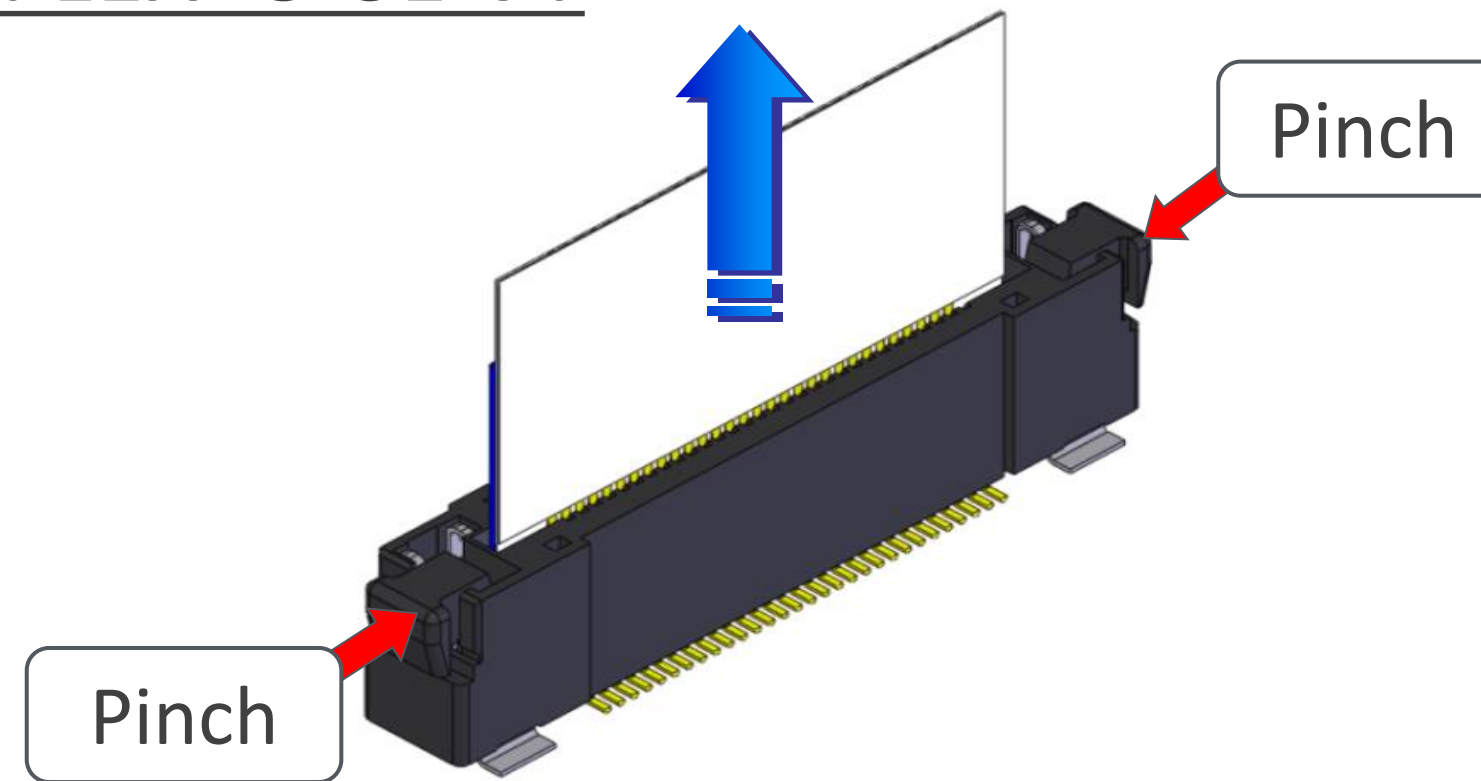
Un-locking methods

EVAFLEX® 5



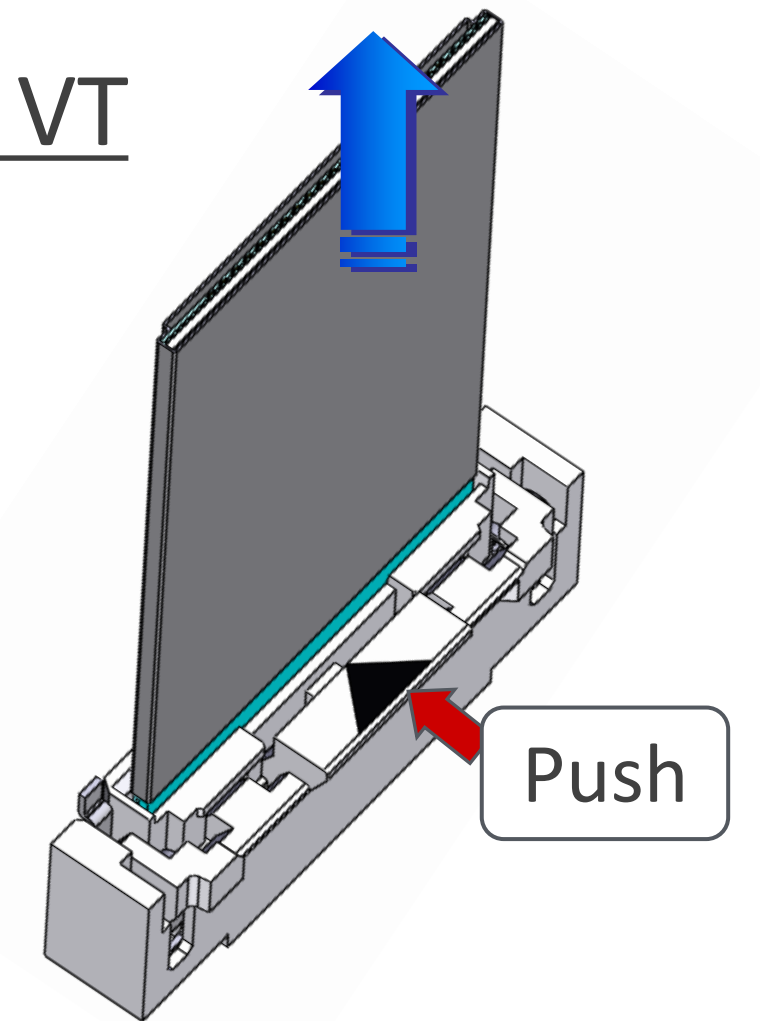
Push down 2 buttons and pull FFC/FPC out

EVAFLEX® 5-SE VT



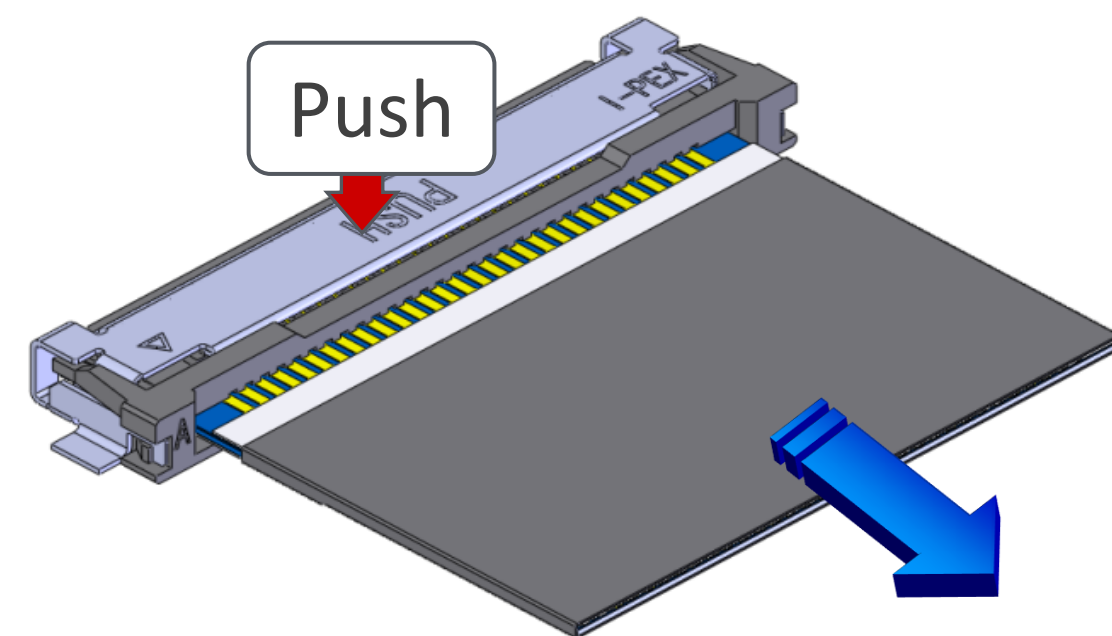
Pinch from the sides and pull FFC/FPC out

EVAFLEX® 5-SE-G VT



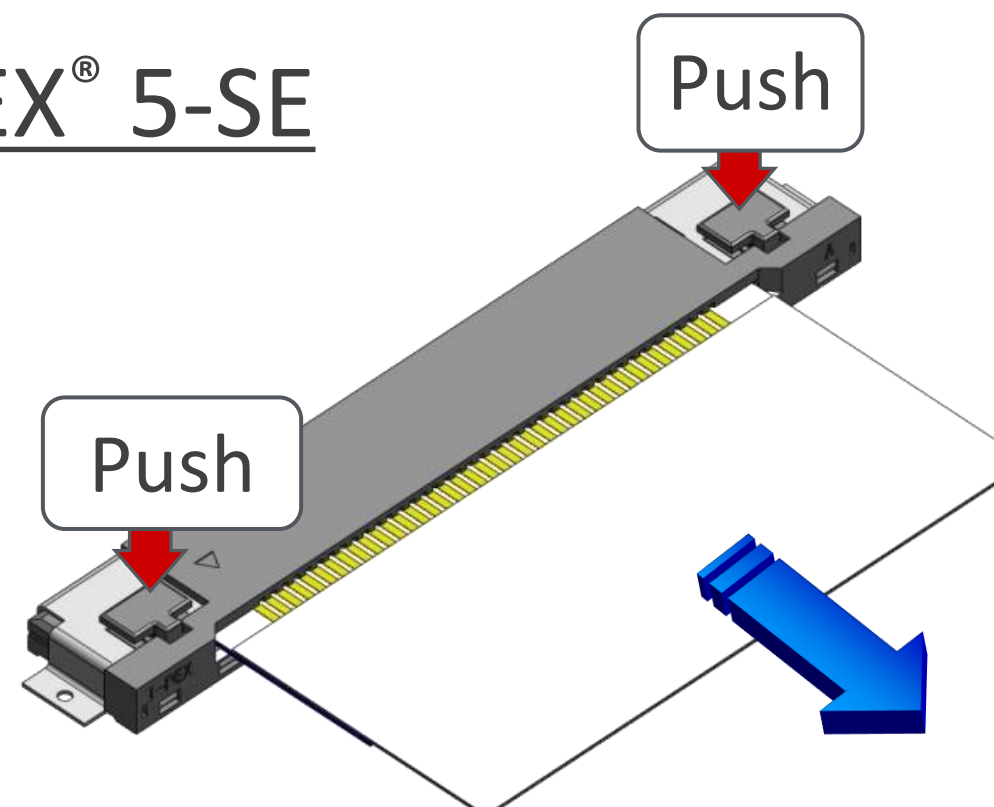
Push center lock release button and pull FFC/FPC out

EVAFLEX® 5-VS



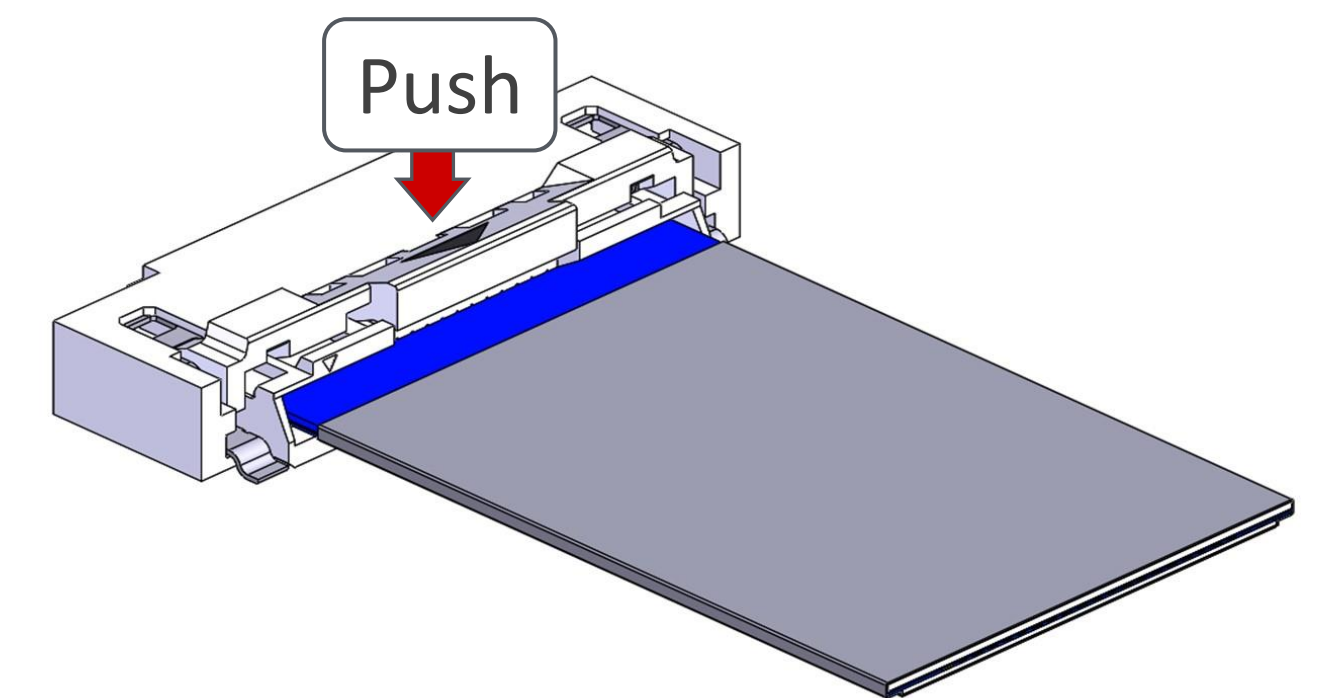
Push down on the shell and pull FFC/FPC out

EVAFLEX® 5-SE



Push down 2 buttons and pull FFC/FPC out

EVAFLEX® 5-SE-G HT

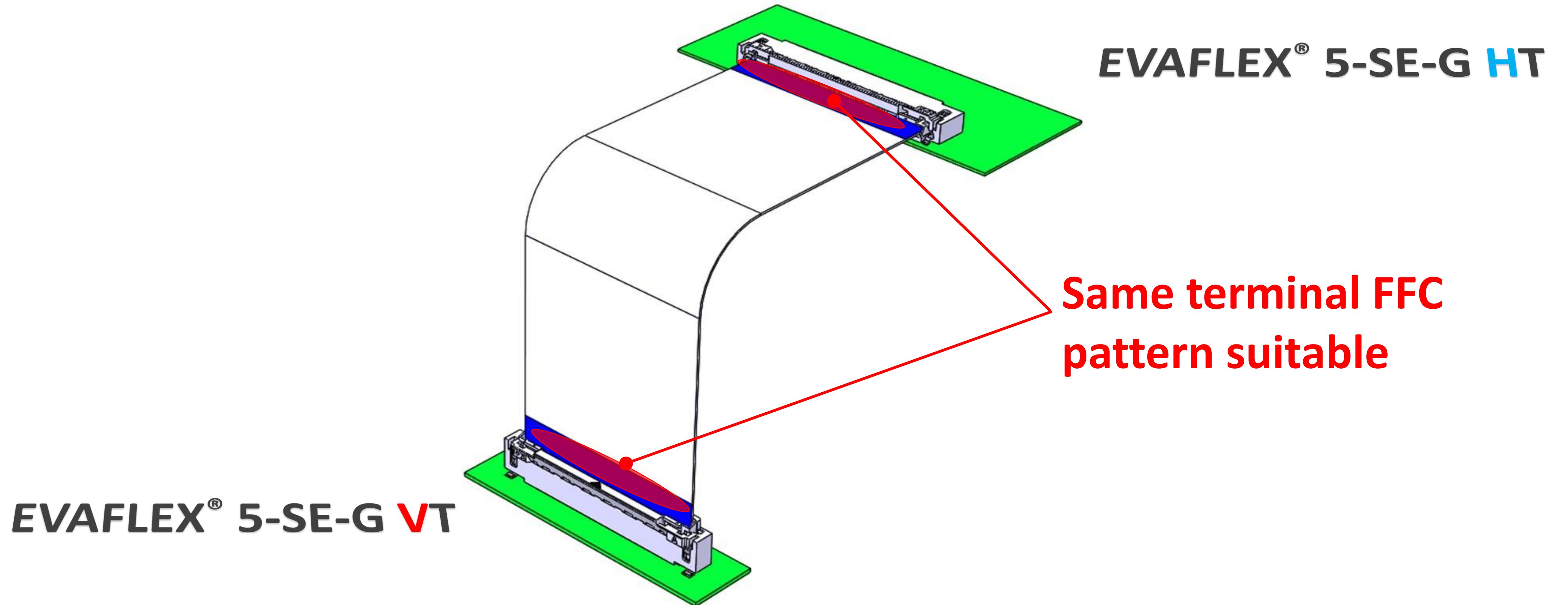


Push center lock release button and pull FFC/FPC out

EVAFLEX[®] 5-SE-G VT and GHT identified same FFC pattern

Same terminal FFC pattern can be installed on Vertical and Horizontal

✕Applicable for shielded FFC, non-Shielded FFC



FFC manufacturers supporting EVAFLEX[®] 5 series

Sumitomo Electric Industries, Ltd.

<http://global-sei.com/ewp/E/products/category/fc.html>

TOTOKU ELECTRIC CO., LTD

<http://www.totoku.com/products/global/indonesia/flexible-flat-cable.php>

Hitachi Metals, Ltd.

<http://www.hitachi-metals.co.jp/e/products/index.html>

BANDO DENSEN Co., Ltd.

<http://www.bew.co.jp/>

Alysium-Tech GmbH







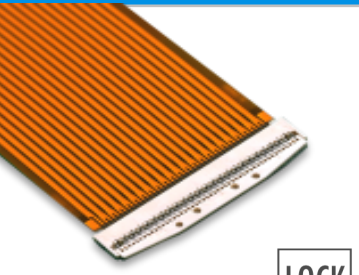



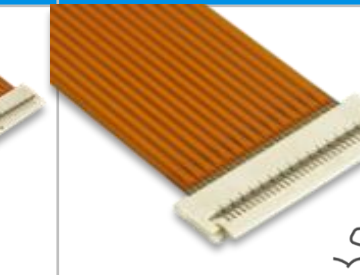


http://www.alysium-tech.com/product/components/ffc_-_fpc_connectors

MINIFLEX® Series - FPC/FFC Connectors

 Mechanical lock
  Hold down
  High temp. (105-125°C)
  Robot ready

* All connectors are back flip type unless otherwise specified.

↓ Click the photos below to get more detailed product information.
















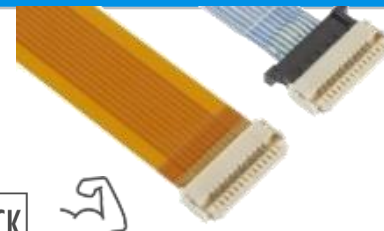






Product Name		MINIFLEX® 175-ST	MINIFLEX® 2-BF	MINIFLEX® 3-BFN					MINIFLEX® 3-BFNH			
				Standard	L	L-HD	LK	L-LK	L-LK-HD	Standard	L	L-HD
Feature												
				One of the smallest at 0.3 mm pitch	Easy operation with long actuator	Easy operation with long actuator Robust type	Easy operation with Mechanical lock	Easy operation with long actuator Mechanical lock	Mechanical lock Robust type	Common footprint pattern compatible with industry standard products	Easy operation with Long actuator	Easy operation with long actuator Robust type
Part Number		20622	20617	20527	20538	20982	20599	20584	20655	20613	20605	20660
Contact Pitch (mm)		0.175	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Board Pitch (mm)		0.35	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Pin Count	Range	7-31 (odd)	80-120 (even)	13-41 (odd)	33-65 (odd)	15-75 (odd)	9-37 (odd)	29-71 (odd)	11-57 (odd)	7-71 (odd)	33-71 (odd)	7-71 (odd)
	Available	16, 19	80, 100, 120	13,15,17,19,21,23,25,27,29,31,33,35,37,39,41	33,35,39,41,45,49,51,55,57,61,65	51	9,11,13,15,17,19,21,23,25,27,29,31,33,35,37	51,53,57,61,71	11, 40, 45	7,9,11,21,23,31,35,39,41,45	51, 61, 71	39, 61
* Please inquire for pin counts not listed as available or outside of the pin count range.												
Height (mm)		0.52+/-0.05	0.90+/-0.10	0.90+/-0.10	0.90+/-0.10	0.90+/-0.10	0.90+/-0.10	0.90+/-0.10	0.90+/-0.10	0.90+/-0.10	0.90+/-0.10	0.90+/-0.10
Width Formula (mm)		1.915+(0.175*?p)	1.5+(0.2*?p)	0.9+(0.3*?p)	0.9+(0.3*?p)	1.5 + (0.3*?p)	2.1 + (0.3*?p)	2.1 + (0.3*?p)	2.7 + (0.3*?p)	1.5+(0.3*?p)	1.5+(0.3*?p)	2.1 + (0.3*?p)
Depth (mm)	Actuator Open	2.65	3.30	2.55	2.55	2.55	2.55	2.55	2.55	2.95	2.95	2.95
	Actuator Close	3.0	4.5	3.0	3.5	3.5	3.0	3.5	3.5	3.15	3.5	3.5
Wiping Length (mm)	Contact A	0.85	0.95	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	Contact B	0.40	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
FPC Insertion Depth (mm)		1.05	1.4	1.1	1.1	1.1	1.1	1.1	1.1	1.35	1.35	1.35
FPC Thickness (mm)		0.12+/-0.03	0.2+/-0.03	0.2+/-0.03	0.2+/-0.03	0.2+/-0.03	0.2+/-0.03	0.2+/-0.03	0.2+/-0.03	0.2+/-0.03	0.2+/-0.03	0.2+/-0.03
Current Rating		0.3A/pin	0.2A/pin	0.3A /pin	0.3A /pin	0.3A /pin	0.3A /pin	0.3A /pin	0.3A /pin	0.3A /pin	0.3A /pin	0.3A /pin
Contact point		Top	Top and Bottom	Top and Bottom	Top and Bottom	Top and Bottom	Top and Bottom	Top and Bottom	Top and Bottom	Top and Bottom	Top and Bottom	Top and Bottom
Compatibility		Original	Original	Original	Original	Original	Original	Original	Original	Panasonic Y3B Foot comp.	Panasonic Y3B Foot comp.	Original

MINIFLEX® Series - FPC/FFC Connectors

 Mechanical lock
  Hold down
  High temp. (105-125°C)
  Robot ready

* All connectors are back flip type unless otherwise specified.

 Click the photos below to get more detailed product information.
 FF Front flip type

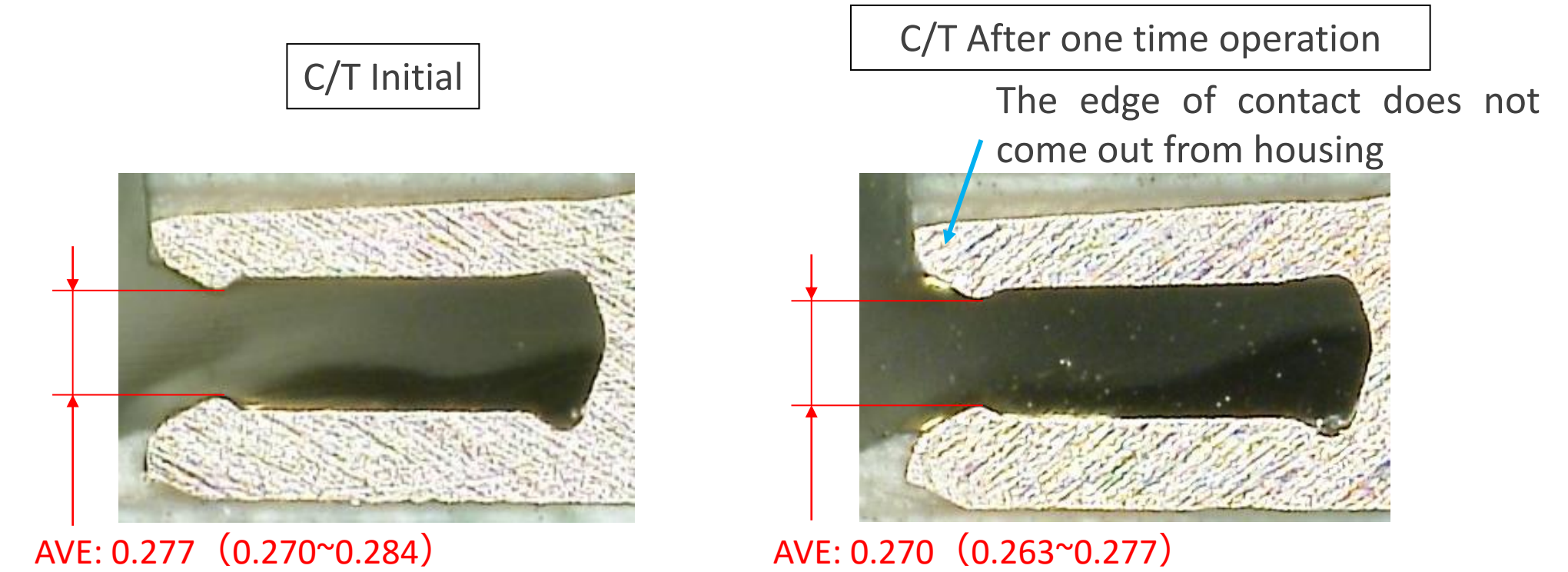
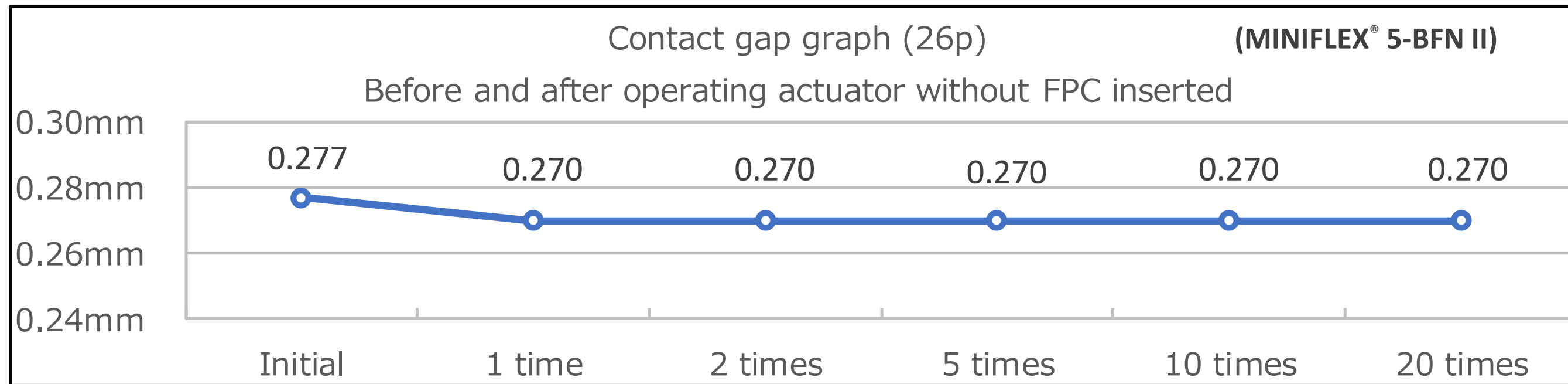
Product Name		MINIFLEX® 4-ST	MINIFLEX® 5-BFN II			DW-5	MINIFLEX® 5-FF
			Standard	L	LK		
Feature		 	   	   	    	  	    FF
		0.4mm Low profile Mechanical lock	For high-temp (125°C)	For high-temp (125°C) Easy operation with long actuator	For high-temp (125°C) Mechanical lock	Hybrid type for FPC and Discrete Wire (AWG#34)	Robust type
Part Number		20588	20542	20586	20600	20597 / 20598	20647
Contact Pitch (mm)		0.4	0.5	0.5	0.5	0.5	0.5
Board Pitch (mm)		0.4	0.5	0.5	0.5	0.5	0.5
Pin Count	Range	4-15	4-30 (even)	32-60 (even)	4-28 (even)	6-20 (even)	10-80 (even)
	Available	4, 6, 8, 10, 12	4,6,8,10,12,14,16,18,20,22,24,26,28,30	32, 34, 40, 50, 54	4,6,8,10,12,14,16,18,20,24	6, 8, 10	20,30,40,50,55,60,64,68
* Please inquire for pin counts not listed as available or outside of the pin count range.							
Height (mm)		0.50+/-0.05	1.0 +/-0.1	1.0 +/-0.1	1.0 +/-0.1	1.0 +/-0.1	2.55 +/-0.2
Width Formula (mm)		1.9+(0.4*?p)	1.7+(0.5*?p)	1.7+(0.5*?p)	2.7+(0.5*?p)	Rece: 3.7+(0.5*?p) Plug: 3.8+(0.5*?p)	4.9+(0.5*?p)
Depth (mm)	Actuator Open	2.7	3.0	3.0	3.0	Mating FPC : 3.0 Mating PLUG CABLE : 4.9	6.4
	Actuator Close	3.0	3.5	4.0	3.5	Mating FPC : 3.5 Mating PLUG CABLE : 5.39	7.2
Wiping Length (mm)		0.8	1.0	1.0	1.0	1.0	1.4
FPC Insertion Depth (mm)		1.00	1.3	1.3	1.3	1.3	4.15
FPC Thickness (mm)		0.12+/-0.03	0.3+/-0.05	0.3+/-0.05	0.3+/-0.05	0.2+/-0.03	0.3+/-0.05
Current Rating		0.4A /pin (6A/conn.)	0.5A /pin (7A/conn.)	0.5A /pin (7A/conn.)	0.5A /pin (7A/conn.)	FPC:0.5A /pin DW(AWG#34) :0.7A/ pin	0.5A /pin
Contact Point		Top	Top and Bottom	Top and Bottom	Top and Bottom	Top and Bottom	Bottom
Compatibility		Original	Original	Original	Original	Original	HRS FH28 Foot/FPC pattern comp.
Automotive Standards							LV214 (*)

Note : (*) 68P tested. Evaluations passed except for PG19 Environmental simulation.

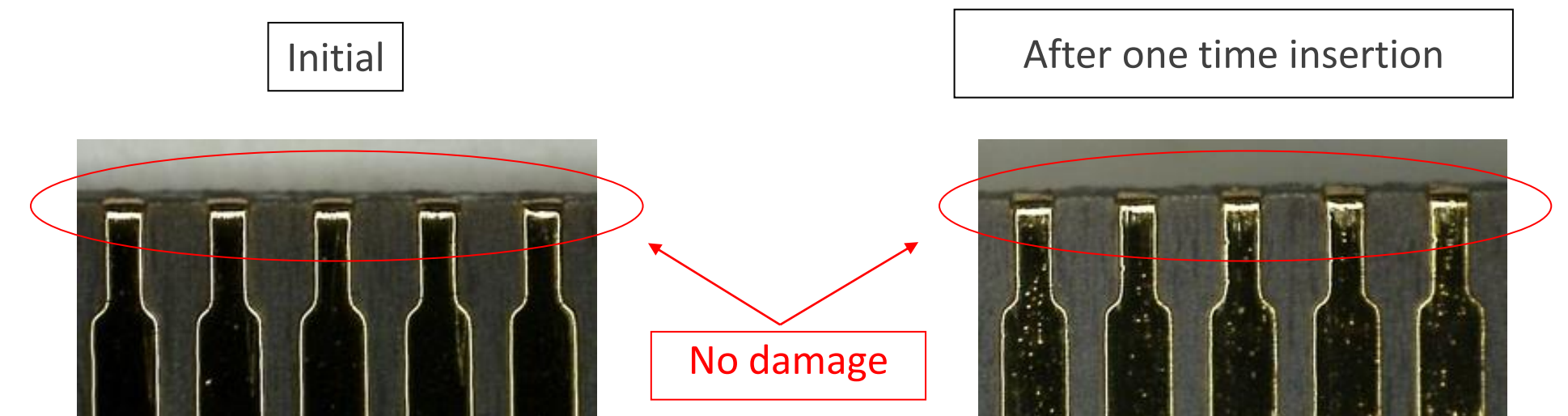
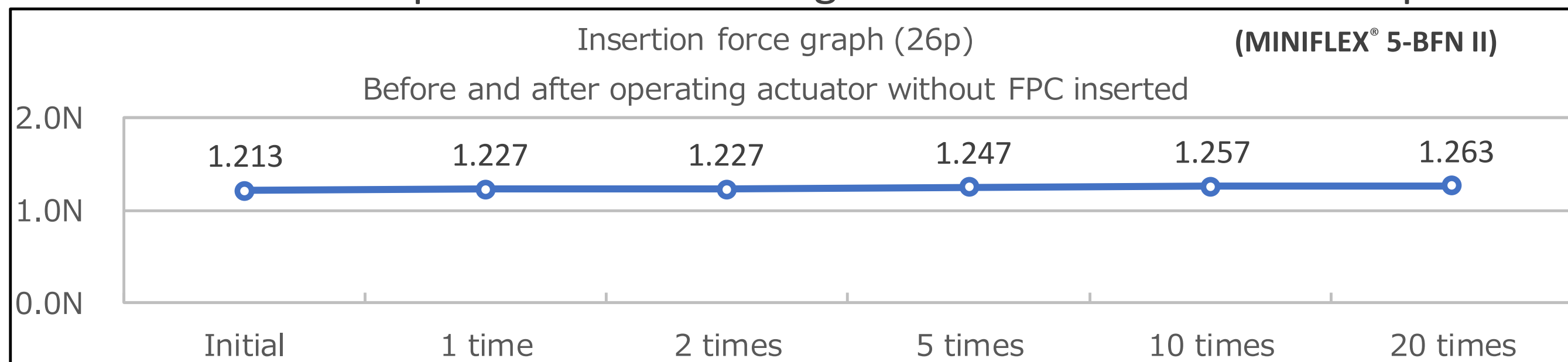
If connector actuator was closed accidentally without FPC inserted...

Do not change the temperature while the actuator is in a closed state. No reflow soldering should be done when the actuator closed state. FPC insertion force remove extra space between force and will increase after first actuator operation without the FPC being inserted. It is strongly recommended to avoid any actuator open / close operation without the FPC being inserted from the beginning.

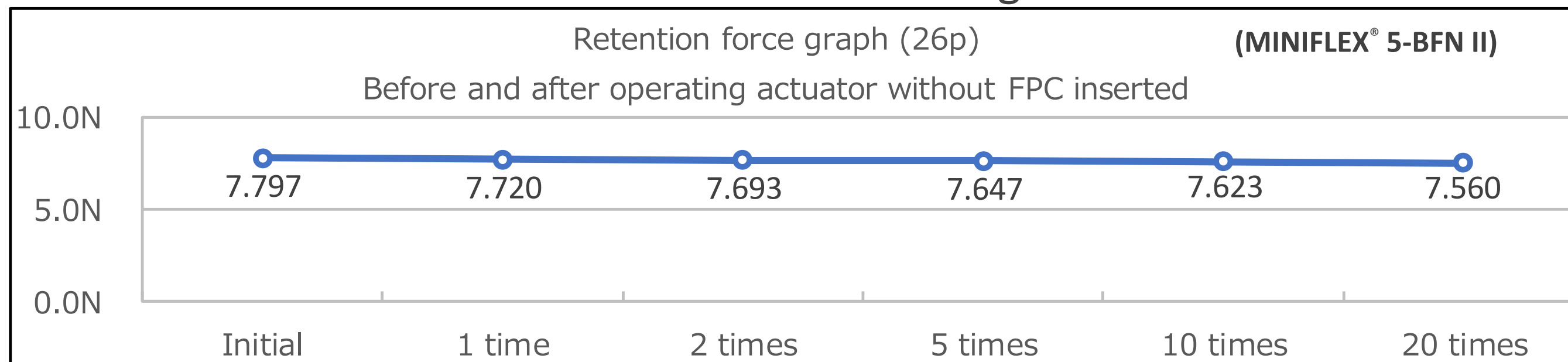
■ Connector will still function reliably



■ Connector still performs even though the insertion force went up



■ Retention force of connector does not change



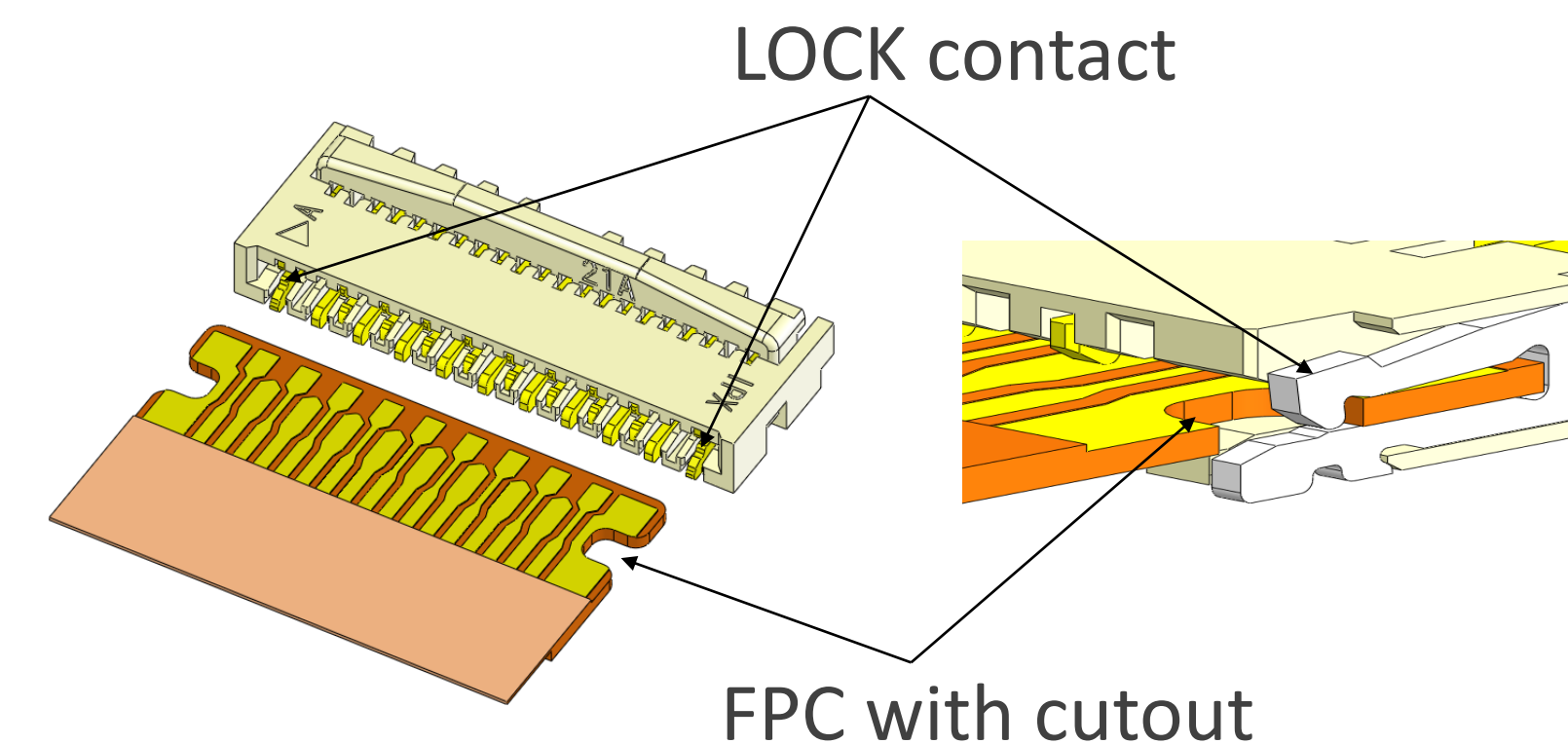
Additional mechanical lock available for higher FPC retention force

0.175 mm, 0.2 mm, 0.3 mm pitch product FPC retention force

	L 175-ST	2-BF	L 3-BFN	3-BFN LK	L 3-BFN L	3-BFN L LK	3-BFNH	3-BFNH L
FPC Retention Force (Actual)	8.59N (19P)	31.33N (100P)	6.70N (19P)	11.37N (19P)	17.95N (51P)	23.45N (51P)	9.32N (23P)	20.97N (51P)
LOCK Contact Retention Force	5.44N (19P)	N/A	N/A	5.50N (19P)	N/A	5.50N (51P)	N/A	N/A

0.4 mm, 0.5 mm pitch product FPC retention force comparison

	L 4-ST	5-FF	5-BFN II	L 5-BFN II LK (03)	5-BFN II L
FPC Retention Force (Actual)	5.89N (10P)	51.72N (30P)	7.52N (16P)	14.50N (16P)	11.43N (32P)
LOCK Contact Retention Force	4.60N (10P)	N/A	N/A	6.98N (16P)	N/A



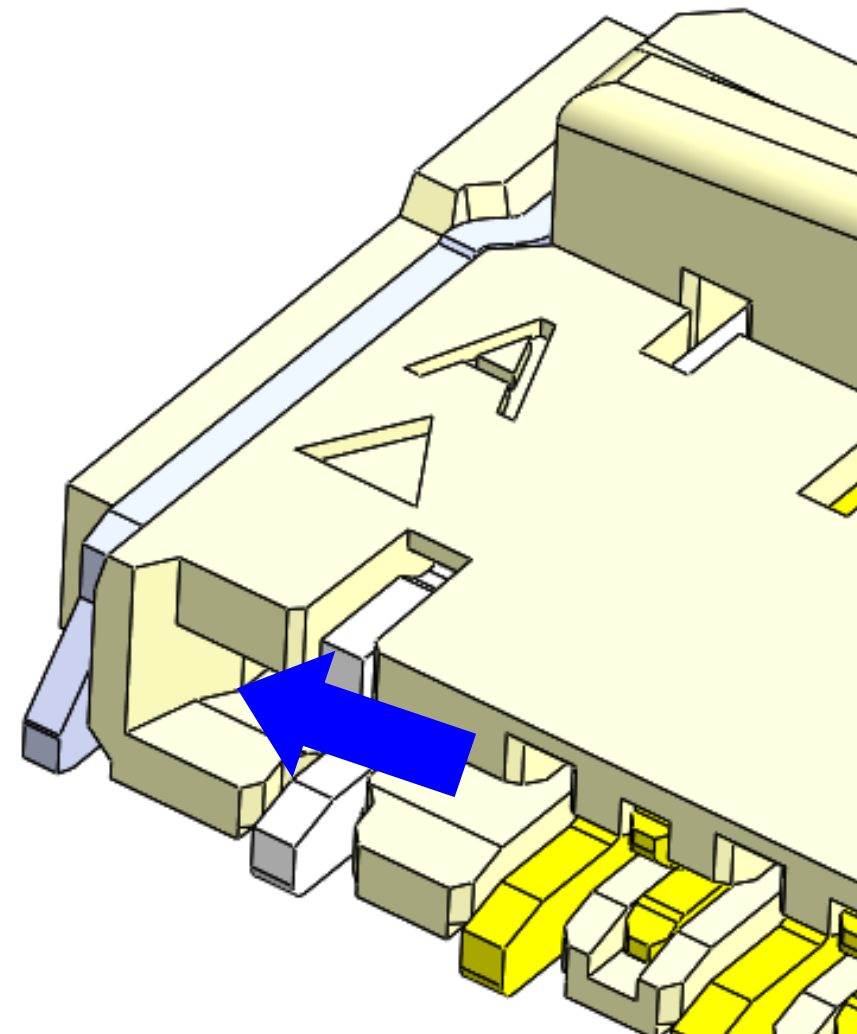
L Mechanical lock with FPC cutout

Hold down

Hold down to improve strength of side wall and to prevent actuator drop off

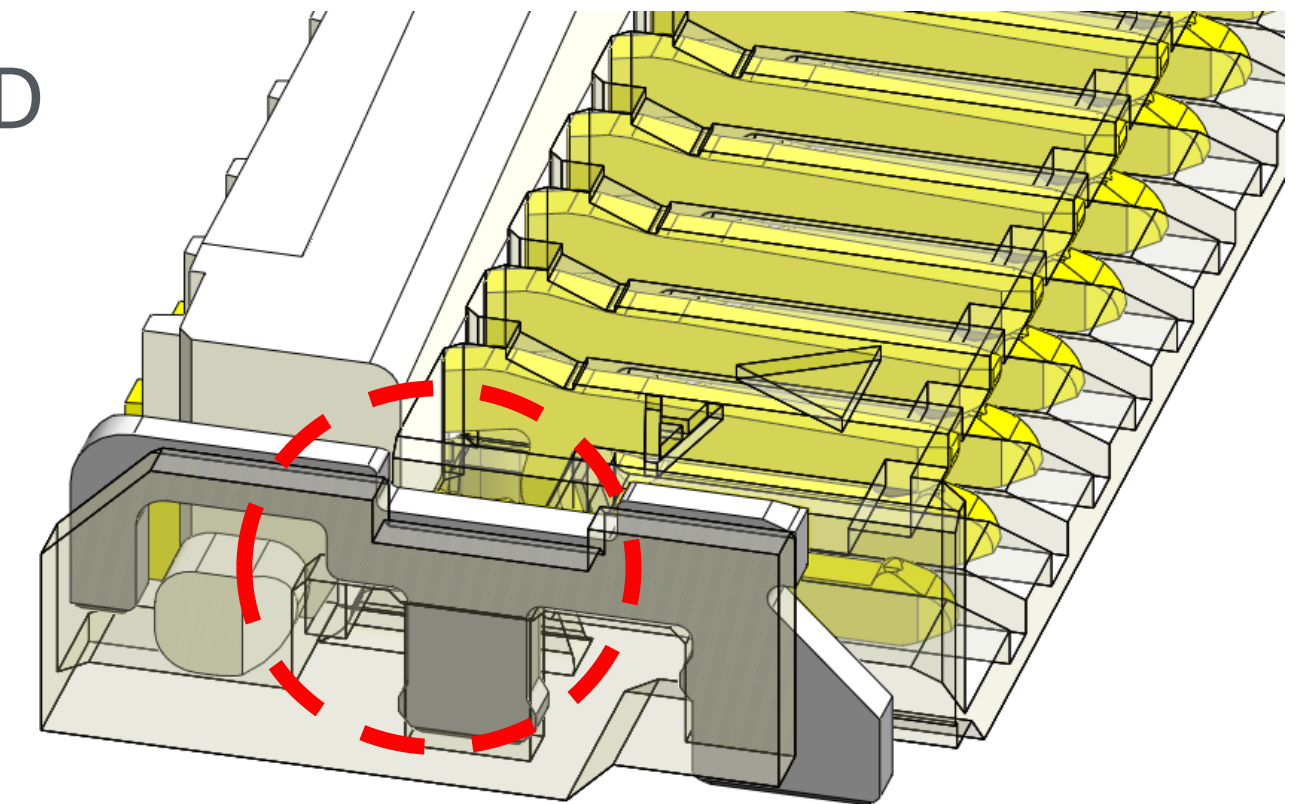
<Strength improvement>

MINIFLEX® 175-ST
MINIFLEX® 2-BF
MINIFLEX® 3-BFN L-HD
MINIFLEX® 3-BFN L-LK-HD
MINIFLEX® 3-BFNH L-HD
MINIFLEX® 5-BFN II



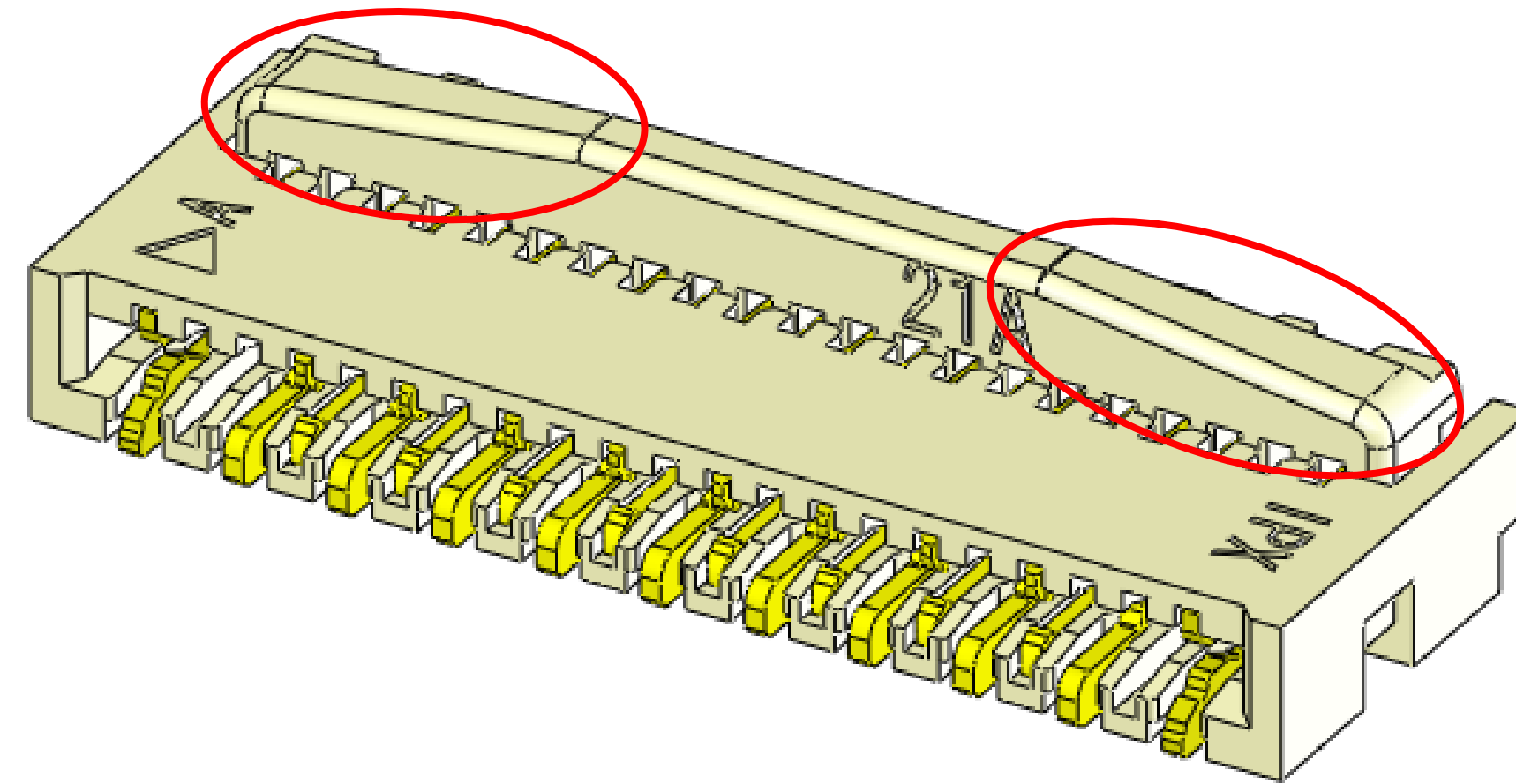
<Designed to prevent actuator drop off>

MINIFLEX® 175-ST
MINIFLEX® 2-BF
MINIFLEX® 3-BFNH L-HD
MINIFLEX® 5-BFN II



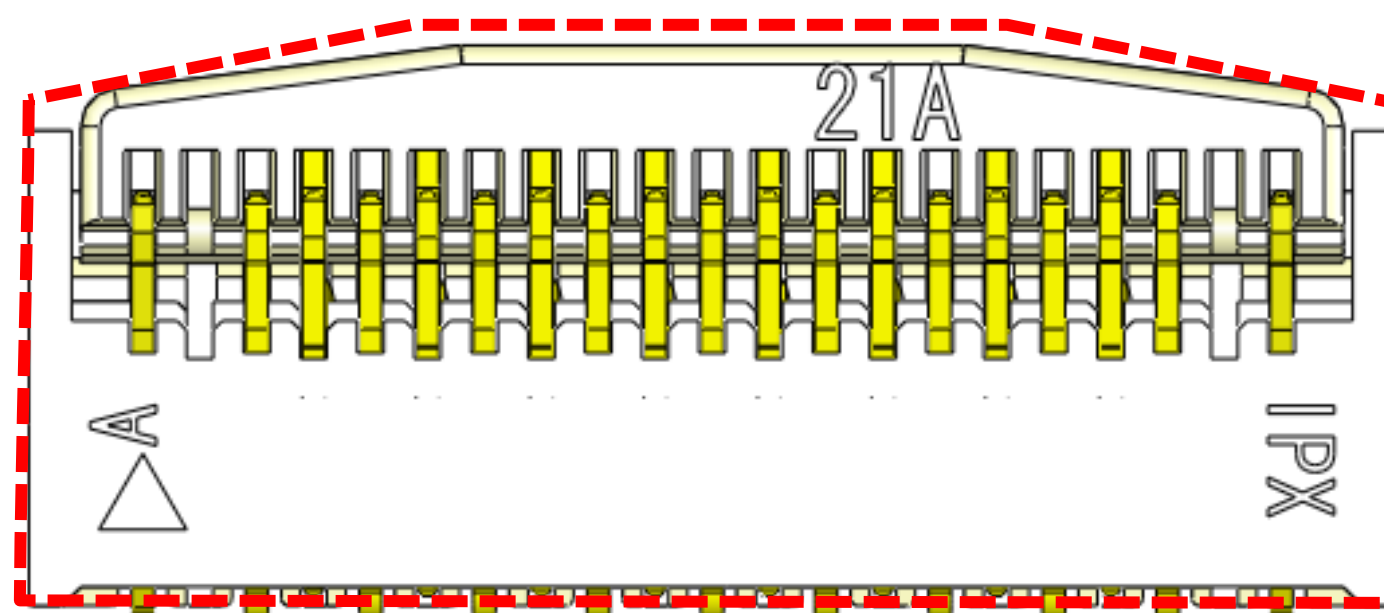
Half-lock prevention with curved actuator design

Curved design guide users to press center of the actuator to prevent half lock

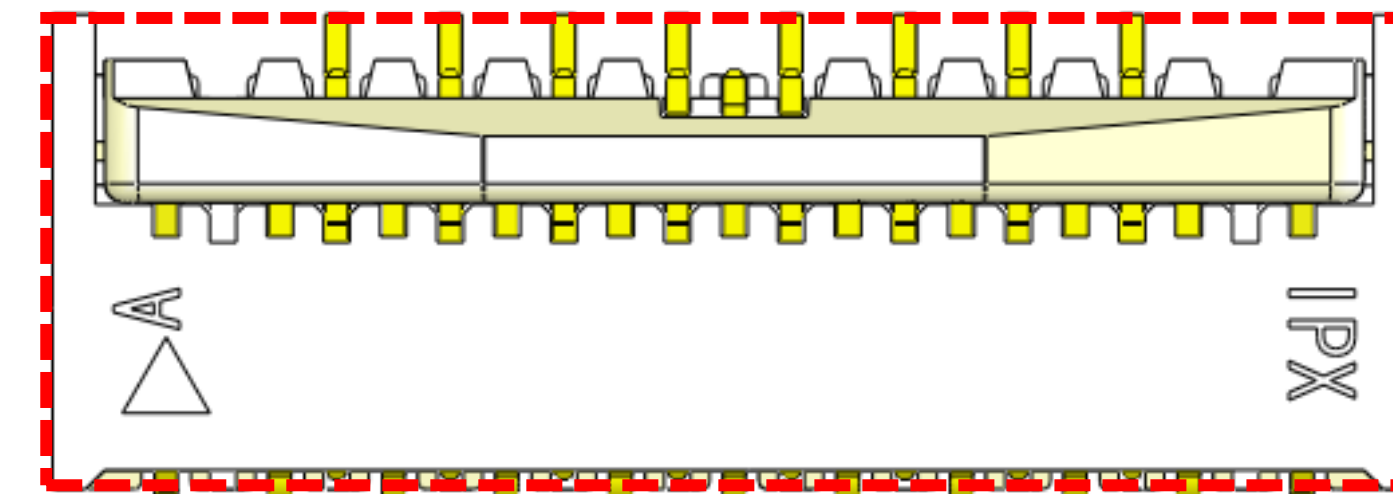


Easy to check Actuator closed position visually from top

Easy confirmation of actuator CLOSE/OPEN state



Actuator
CLOSED



Actuator
OPEN

I-PEX Product Series

[CLICK THE MATRIX](#)
to see latest product information



MHF[®] Series

RF connectors

[Matrix >](#)



ISH[®] and IARPB[®] Series

Discrete wire connectors

[Matrix >](#)



AP Series

Power terminals

[Matrix >](#)



CABLINER[®] Series

Micro-coaxial connectors

[Matrix >](#)



NOVASTACK[®] Series

Board-to-board connectors

[Matrix >](#)



MINIDOCK[™] Series

I/O connectors



DUALINE[®] Series

Twinax connectors



EVAFLEX[®] Series MINIFLEX[®] Series

FPC/FFC connectors



LIGHTPASS[®] Series

Optical Modules

[Matrix >](#)



Please [contact us](#) for custom products.



I-PEX, MHF, CABLINE, NOVASTACK, EVAFLEX, MINIFLEX, ISH, IARPB, IASLP, ESTORQ, i-Fit and ISFIT are registered trademarks of I-PEX Inc. Please note that the contents in the catalog might be changed without prior notification. I-PEX Inc. assumes no responsibility for any inaccuracies or obligation to update Information on these documents. Please be sure to read and understand the latest "Precautions for Use" and "Instruction Manual" before you use our products. We shall not be responsible for any defects, damages or troubles in case you use our products without following the precautions for use. Please feel free to contact our sales representatives when you use our products for any applications that require very high reliability and safety, or that relate to human life (ex. nuclear power control, aerospace, transportation, medical equipment, safety equipment etc.).

Contact your sales representative for more detailed information. [i-pex.com]

I-PEX Inc.