

# MINIFLEX® 3-BFN LK

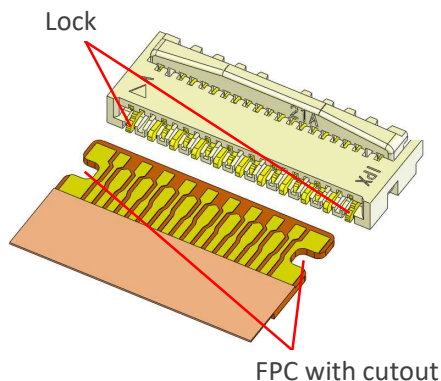
Mechanical lock, low profile (Height = 0.9 mm), 0.3 mm pitch, horizontal, backflip

Product Specifications:		Short Actuator	Long Actuator	Applicable FPC/FFC:	
Board Pitch (mm)		0.3		FPC/FFC Contact Pitch	0.3
Wiping Length (mm)		Contact A: 0.9		FPC/FFC Contact Point	Top and Bottom
		Contact B: 0.45		FPC/FFC Thickness (mm)	0.2 +/- 0.03
Size (mm)	Height	0.90 +/- 0.10			
	Width	Formula: 2.1 + (0.3*?p)			
	Depth	Open: 2.55			
Pin counts	Range	Close: 3		Close: 3.5	
		9-37 (odd)		29-71 (odd)	
	Available	9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37		51, 53, 57, 61, 71	

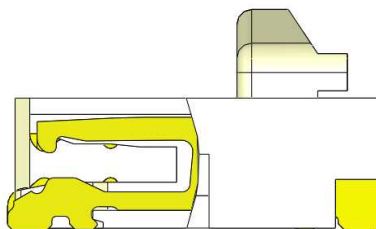
\* Please inquire for pin counts not listed or outside of the pin count range.



## High FPC retention force with additional mechanical lock



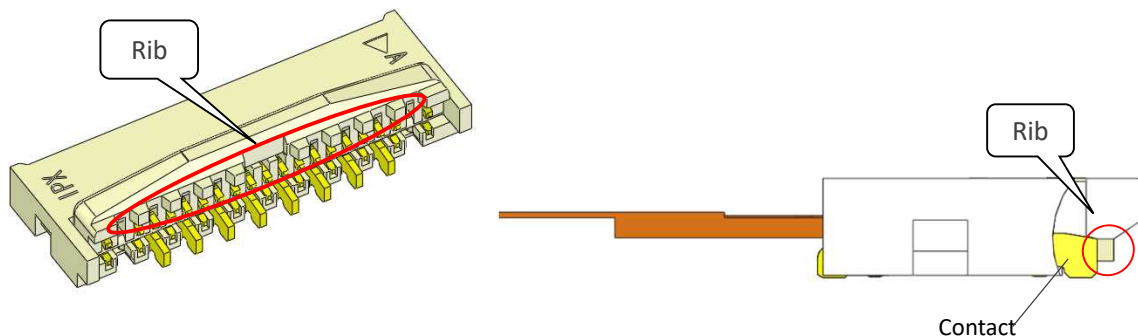
FPC LOCK mechanism maintains high FPC retention force



FPC retention force comparison (19 p)

MINIFLEX® 3-BFN LK	MINIFLEX® 3-BFN
11.34 N	6.7 N

## Designed to prevent contact distortion

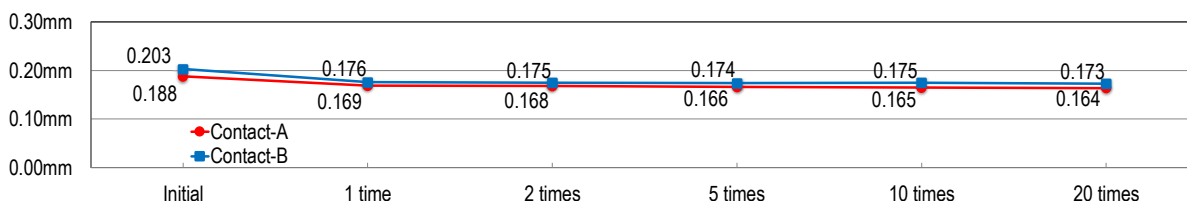


When opening the actuator, the ribs will prevent the contacts from being pulled up.

## Usability for closing actuator without FPC

The connector will still function even if the actuator is accidentally closed without the FPC being inserted after the SMT process.

- Connector will still function reliably (contact gap graph 35 pins before and after operating actuator without FPC inserted)

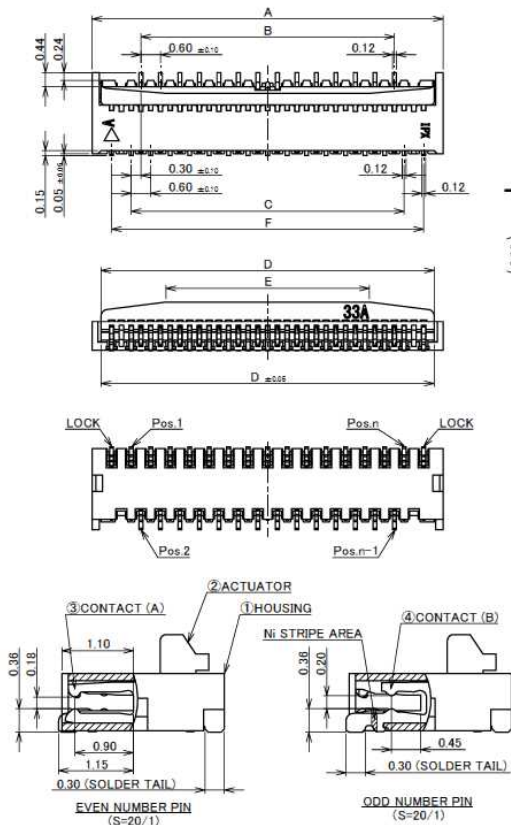


- Insertion force of connector goes up
- Retention force of connector does not change greatly

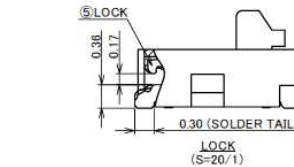
# Component Parts Details

## Connector Assembly

Recommended P/N 20599-0\*\*E-01



PART NO.	Pos	A	B	C	D	E	F
20599-009E-01	9P	4.80	1.80	2.40	4.25	2.25	3.60
20599-011E-01	11P	5.40	2.40	3.00	4.85	2.85	4.20
20599-013E-01	13P	6.00	3.00	3.60	5.45	3.45	4.80
20599-015E-01	15P	6.60	3.60	4.20	6.05	4.05	5.40
20599-017E-01	17P	7.20	4.20	4.80	6.65	4.65	6.00
20599-019E-01	19P	7.80	4.80	5.40	7.25	5.25	6.60
20599-021E-01	21P	8.40	5.40	6.00	7.85	5.85	7.20
20599-023E-01	23P	9.00	6.00	6.60	8.45	6.45	7.80
20599-025E-01	25P	9.60	6.60	7.20	9.05	7.05	8.40
20599-027E-01	27P	10.20	7.20	7.80	9.65	7.65	9.00
20599-029E-01	29P	10.80	7.80	8.40	10.25	8.25	9.60
20599-031E-01	31P	11.40	8.40	9.00	10.85	8.85	10.20
20599-033E-01	33P	12.00	9.00	9.60	11.45	9.45	10.80
20599-035E-01	35P	12.60	9.60	10.20	12.05	10.05	11.40
20599-037E-01	37P	13.20	10.20	10.80	12.65	10.65	12.00



NOTES  
1. CONTACT POINT: TOP AND BOTTOM CONTACT

CAUTION VISIT OUR WEBSITE FOR LATEST VERSIONS OF INSTRUCTION MANUAL NO. HIM-12007 TO HANDLE THE PRODUCT PROPERLY AND SAFELY.

TABLE 1

PART NO.	FINISH		
20599-0**E-01	CONTACT AREA : Au 0.10 μm MIN. OVER Ni 1.00 μm MIN. SOLDERING AREA : Au 0.03 μm MIN. OVER Ni 1.00 μm MIN.		
5 LOCK	PHOSPHOR BRONZE	SOLDERING AREA : Au 0.03 μm MIN. OVER Ni 1.00 μm MIN.	
4 CONTACT (B)	PHOSPHOR BRONZE	SEE TABLE 1, WITH Ni STRIPE	
3 CONTACT (A)	PHOSPHOR BRONZE	SEE TABLE 1	
2 ACTUATOR	LCP	UL94V-0, BEIGE	
1 HOUSING	LCP	UL94V-0, BEIGE	
NO	DISCRIPTION	MATERIAL	FINISH , REMARKS



# Connector Assembly

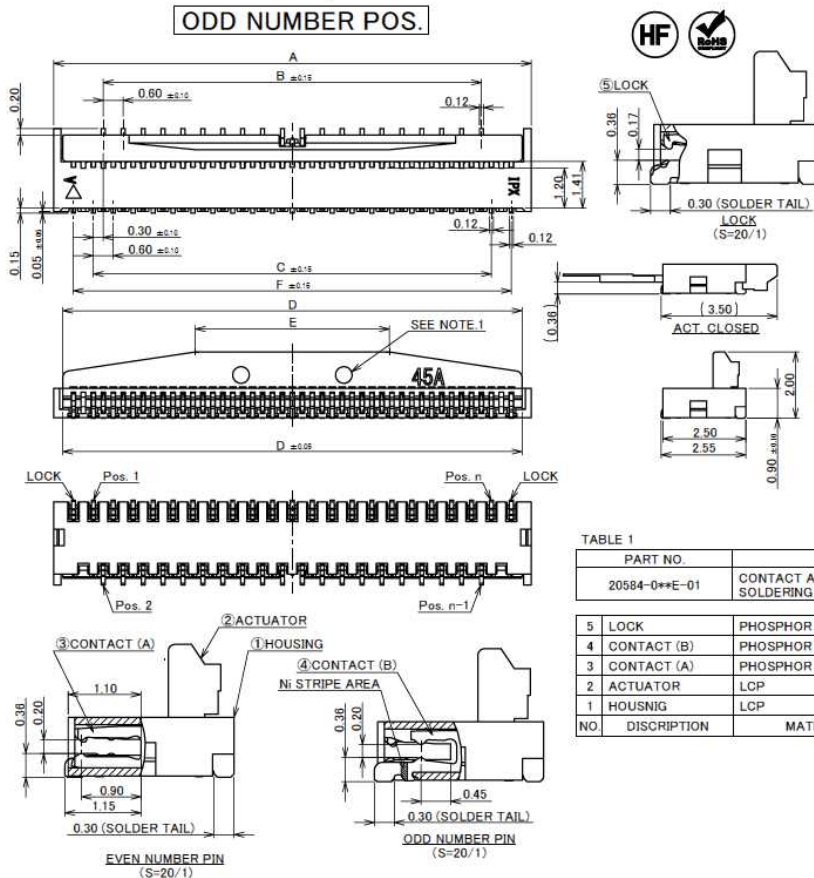
ITEMS	SPECIFICATION
RATING VOLTAGE	50V AC/DC (PER CONTACT)
RATING AMPERAGE	0.3A DC (PER CONTACT)
OPERATING TEMPERATURE	233~358K(-40°C~85°C)
OPERATING HUMIDITY	20~80%RH (NON-CONDENSING)
CONTACT RESISTANCE	INITIAL : 60mohm MAX. / AFTER TEST : $\triangleleft$ 40mohm MAX.
INSULATION RESISTANCE	100Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	20TH CYCLES
ACTUATOR LOCKING FORCE (INITIAL / 20TH CYCLES)	INITIAL / 20TH CYCLES : 0.3N(31gf) $\times$ (n + 2) MAX.
ACTUATOR UNLOCKING FORCE (INITIAL / 20TH CYCLES)	INITIAL / 20TH CYCLES : 0.02N(2gf) $\times$ (n + 2) MIN.
FPC RETENTION FORCE (INITIAL / AFTER TEST)	INITIAL : 0.13N(13gf) $\times$ n + 1.0N MIN. / AFTER TEST : 0.10N(10gf) $\times$ n + 1.0N MIN.
COPLANARITY	0.10 MAX.
PRODUCT SPECIFICATION	PRS-1861
TEST REPORT	TR-13085
PACKING STANDARD	PST-13035
INSTRUCTION MANUAL	HIM-12007
APPEARANCE CRITERIA No.	QLS-A***

※ "n" IS THE NUMBER OF PIN

Rev.13

Recommended P/N 20584-0\*\*E-01

ODD NUMBER POS.



PART NO.	Pos.	A	B	C	D	E	F
◆ 20584-029E-01	29P	10.80	7.80	8.40	10.25	6.25	9.60
◆ 20584-031E-01	31P	11.40	8.40	9.00	10.85	6.85	10.20
◆ 20584-035E-01	35P	12.60	9.60	10.20	12.05	8.05	11.40
◆ 20584-037E-01	37P	13.20	10.20	10.80	12.65	4.65	12.00
◆ 20584-039E-01	39P	13.80	10.80	11.40	13.25	5.25	12.60
◆ 20584-041E-01	41P	14.40	11.40	12.00	13.85	5.85	13.20
◆ 20584-045E-01	45P	15.60	12.60	13.20	15.05	7.05	14.40
◆ 20584-047E-01	47P	16.20	13.20	13.80	15.65	7.65	15.00
◆ 20584-051E-01	51P	17.40	14.40	15.00	16.85	8.85	16.20
◆ 20584-053E-01	53P	18.00	15.00	15.60	17.45	9.45	16.80
◆ 20584-057E-01	57P	19.20	16.20	16.80	18.65	10.65	18.00
◆ 20584-061E-01	61P	20.40	17.40	18.00	19.85	11.85	19.20
◆ 20584-063E-01	63P	21.00	18.00	18.60	20.45	8.45	19.80
◆ 20584-071E-01	71P	23.40	20.40	21.00	22.85	10.85	22.20

◆ MARK MEANS NOT AVAILABLE.

NOTES.

- THIS DENT SHAPE IS PURPOSED FOR GOOD INJECTION QUALITY. THIS DENT SHAPE WILL NOT AFFECT CONNECTR FUNCTION. DENT SHAPE SHOWN ON DRAWING IS JUST FOR REFERENCE. DENT SHAPE AND QUANTITY MIGHT CHAGBE FROM DIFFERENT PIN COUNT AND DIFFERENT TOOLING.
- CONTACT POINT: TOP AND BOTTOM CONTACT

CAUTION VISIT OUR WEBSITE FOR LATEST VERSIONS OF INSTRUCTION MANUAL NO. HIM-12007 TO HANDLE THE PRODUCT PROPERLY AND SAFELY.

TABLE 1

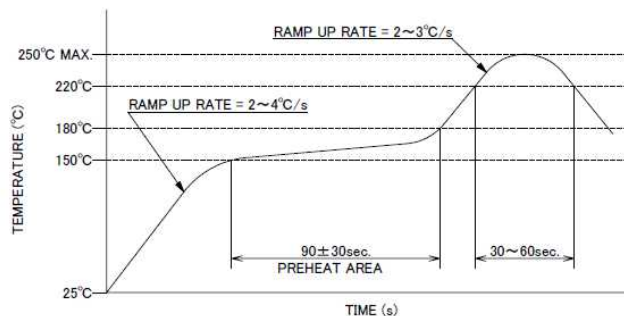
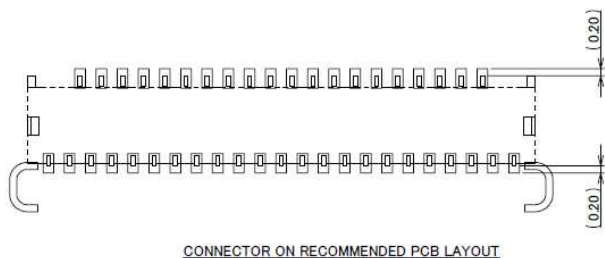
PART NO.	FINISH		
20584-0**E-01	CONTACT AREA : Au 0.10 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN. SOLDERING AREA : Au 0.03 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.		
5 LOCK	PHOSPHOR BRONZE	SOLDERING AREA : Au 0.03 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.	
4 CONTACT (B)	PHOSPHOR BRONZE	SEE TABLE 1, WITH Ni STRIPE	
3 CONTACT (A)	PHOSPHOR BRONZE	SEE TABLE 1	
2 ACTUATOR	LCP	UL94V-0, BEIGE	
1 HOUSNIG	LCP	UL94V-0, BEIGE	
NO.	DISRIPTION	MATERIAL	FINISH ,REMARKS

Rev.17





# Connector Assembly



Rev.17

ITEMS	SPECIFICATION
RATING VOLTAGE	50V AC (PER CONTACT)
RATING AMPERAGE	0.3A DC (PER CONTACT)
OPERATING TEMPERATURE	233~358K (-40°C~+85°C)
OPERATING HUMIDITY	20~80%RH (NON-CONDENSING)
CONTACT RESISTANCE	INITIAL : 60mohm MAX. / AFTER TEST : <math>\triangleleft 40\text{mohm MAX.}</math>
INSULATION RESISTANCE	100mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	20 CYCLES
ACTUATOR LOCKING FORCE (INITIAL / 20 CYCLES)	INITIAL / 20 CYCLES $0.21\text{N (21gf)} \times (n + 2)$ MAX.
ACTUATOR UNLOCKING FORCE (INITIAL / 20 CYCLES)	INITIAL / 20 CYCLES $0.014\text{N (1.4gf)} \times (n + 2)$ MIN.
FPC RETENTION FORCE (INITIAL / AFTER TEST)	INITIAL: $0.13\text{N (13gf)} \times n + 1.0\text{N MIN.}$ / AFTER TEST: $0.10\text{N (10gf)} \times n + 1.0\text{N MIN.}$
COPLANARITY	0.10 MAX.
PRODUCT SPECIFICATION	PRS-1789
TEST REPORT	TR-13022
PACKING STANDARD	PST-13013
INSTRUCTION MANUAL	HIM-12007
APPEARANCE CRITERIA No.	QLS-A***

※ "n" IS THE NUMBER OF PIN

Rev.17

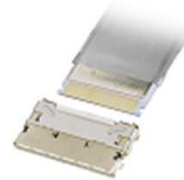
Board to Board



High-Density



Autolocking FPC/FFC



High-Density



FPC/FFC



Micro-Coaxial / Discrete Cable



High-Speed



RF



High-Frequency



Optical Module



High-Speed



Power



High-Power



I/O (Input/Output)



Quick charge

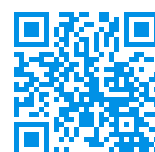


Effector



Custom Connectors Available

Inquiry



I-PEX, MHF, CABLINE, NOVASTACK, EVAFLEX, MINIFLEX, ISH, IARPB, IASLP, ESTORQ, ISFIT, i-Fit and ZenShield 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 or more detailed information.

[www.i-pex.com](http://www.i-pex.com)



I-PEX

© I-PEX Inc. 2022  
All rights reserved.