

MINIFLEX® 5-BF III

Footprint and FPC pattern compatibility products, height = 2.0 mm, 0.5 mm pitch, horizontal, backflip



- ✓ FPC and footprint compatible with industry standard products
- ✓ Full cover actuator to prevent dust and contact distortion
- ✓ Usability for closing actuator without FPC

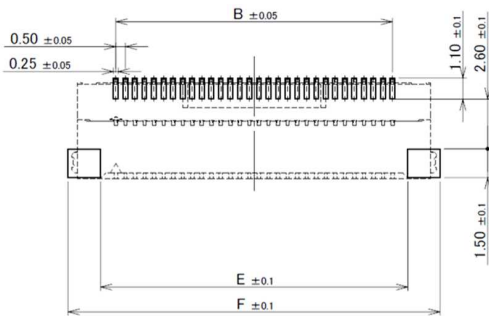
Pin counts:

Range	Up to 60
Available	8, 10, 12, 14, 18, 20, 22, 24, 30, 34, 36, 38, 40, 45, 50

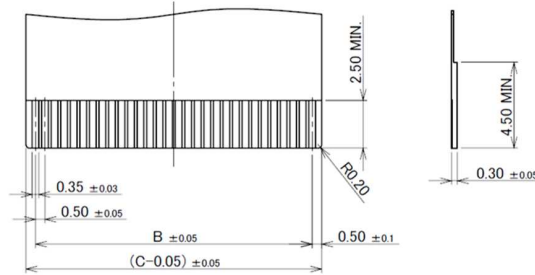
*Please inquire for pin counts not listed as available or outside of the pin count range.

Part Number	20593	
Contact Pitch (mm)	0.5	
Board Pitch (mm)	0.5	
Height (mm)	2.0 +/-0.2	
Width Formula (mm)	3.5+(0.5*?p)	
Depth (mm)	Actuator Open	4.92
	Actuator Close	5.90
Wiping length (mm)	1.35	
FPC Insertion Depth (mm)	2.10	
FPC Thickness (mm)	0.3+/-0.05	
Current Rating	0.5A /pin(13A/conn.)	
Contact Point	Top and Bottom	
Compatibility	Omron XF2M Foot/FPC pattern comp.	

FPC and footprint compatible with industry standard products



Recommended PCB layout and metal mask layout
Metal mask thickness: t=0.12 mm

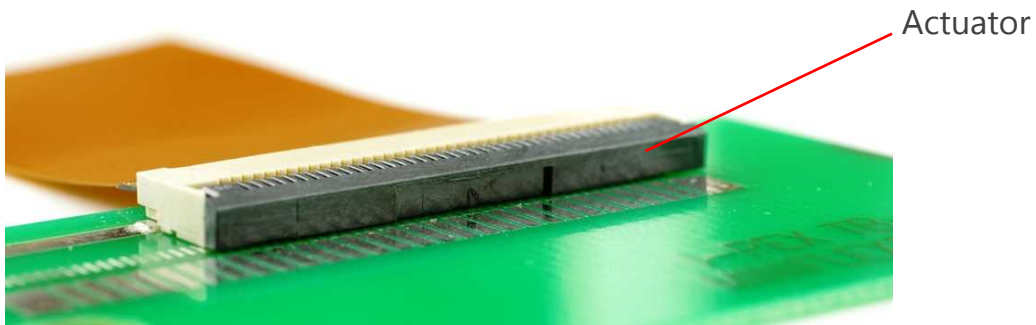


Recommended FPC/FFC layout

Pos.	B	C	E	F
8P	3.50	4.55	5.10	8.50
10P	4.50	5.55	6.10	9.50
12P	5.50	6.55	7.10	10.50
14P	6.50	7.55	8.10	11.50
18P	8.50	9.55	10.10	13.50
20P	9.50	10.55	11.10	14.50
22P	10.50	11.55	12.10	15.50
24P	11.50	12.55	13.10	16.50
30P	14.50	15.55	16.10	19.50
34P	16.50	17.55	18.10	21.50
36P	17.50	18.55	19.10	22.50
38P	18.50	19.55	20.10	23.50
40P	19.50	20.55	21.10	24.50
45P	22.00	23.05	23.60	27.00
50P	24.50	25.55	26.10	29.50

Full cover actuator to prevent dust and contact distortion

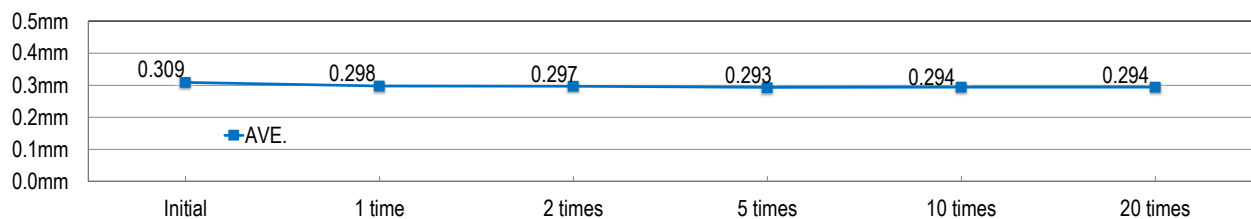
When the actuator is locked, the actuator functions as a full cover to protect contact damage when opening and also preventing dust contamination and short circuiting



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 40 pins before and after operating actuator without FPC inserted)



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

MINIFLEX® 5-BF III

Component Parts Detail

Connector Assembly :

Recommended P/N	20593-0**E-01				
PART NO.	Pos.	A	B	C	D
20593-008E-01#	8	7.50	3.50	4.55	8.10
20593-010E-01#	10	8.50	4.50	5.55	9.10
20593-012E-01#	12	9.50	5.50	6.55	10.10
20593-014E-01#	14	10.50	6.50	7.55	11.10
20593-018E-01#	18	12.50	8.50	9.55	13.10
20593-020E-01#	20	13.50	9.50	10.55	14.10
20593-022E-01#	22	14.50	10.50	11.55	15.10
20593-024E-01#	24	15.50	11.50	12.55	16.10
20593-030E-01#	30	18.50	14.50	15.55	19.10
20593-034E-01#	34	20.50	16.50	17.55	21.10
20593-036E-01#	36	21.50	17.50	18.55	22.10
20593-038E-01#	38	22.50	18.50	19.55	23.10
20593-040E-01#	40	23.50	19.50	20.55	24.10
20593-045E-01#	45	26.00	22.00	23.05	26.60
20593-050E-01#	50	28.50	24.50	25.55	29.10
◆20593-060E-01#	60	33.50	29.50	30.55	34.10

◆ MARK MEANS NOT AVAILABLE

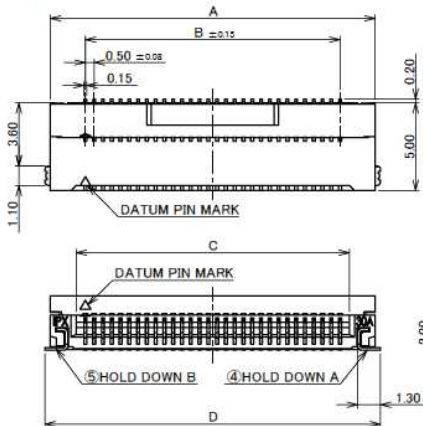
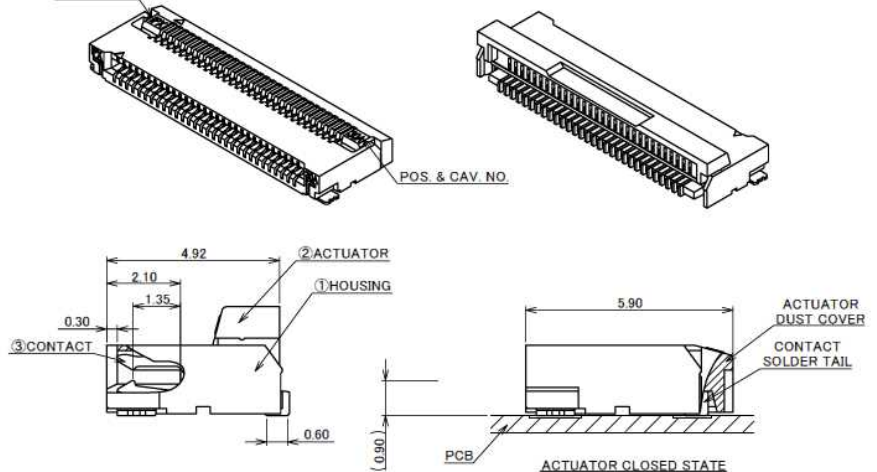
P/N : 20593-0**E-01 M

WITHOUT : 2,000pcs/REEL
WITH : 500pcs/REEL

Pos.

LOGO MARK

POS. & CAV. NO.



NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
5	HOLD DOWN B	PHOSPHOR BRONZE	Sn 2.00 μm MIN. OVER Ni 1.00 μm MIN.
4	HOLD DOWN A	PHOSPHOR BRONZE	Sn 2.00 μm MIN. OVER Ni 1.00 μm MIN.
3	CONTACT	PHOSPHOR BRONZE	Au 0.03 μm MIN. OVER Ni 1.00 μm MIN.
2	ACTUATOR	LCP	UL94V-0, BLACK
1	HOUSING	LCP	UL94V-0, BEIGE

NOTES

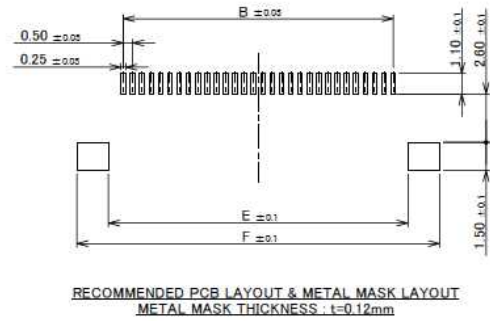
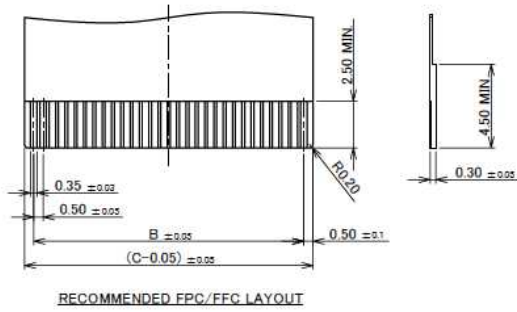
1. CONTACT POINT : Top and Bottom

VISIT OUR WEBSITE FOR LATEST VERSIONS OF INSTRUCTION MANUAL
NO. HIM-06004 TO HANDLE THE PRODUCT PROPERLY AND SAFELY.

Connector Assembly :

PART No.	Pos.	B	C	E	F
20593-008E-01#	8	3.50	4.55	5.10	8.50
20593-010E-01#	10	4.50	5.55	6.10	9.50
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◆20593-060E-01#	60	29.50	30.55	31.10	34.50

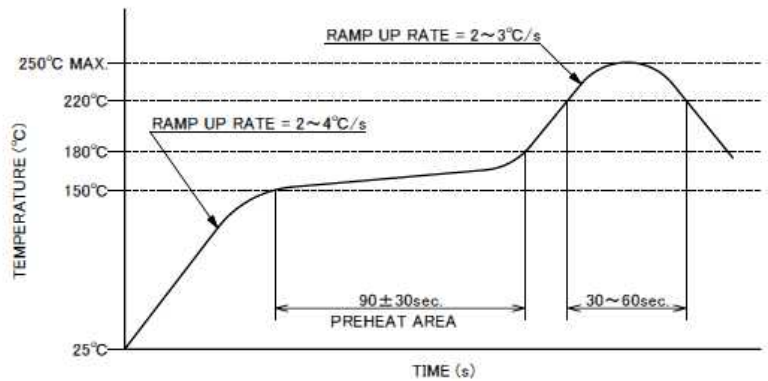
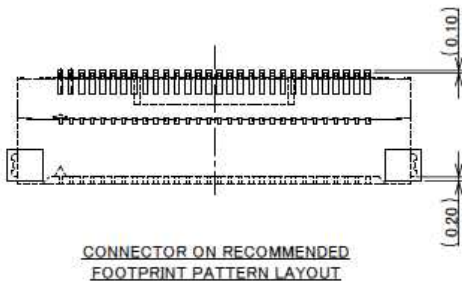
◆MARK MEANS NOT AVAILABLE



- NOTES.
- THIS AREA CANNOT MOUNT ANOTHER COMPONENTS.
 - SOLDER RESIST SHALL BE APPLIED TO PREVENT SHORT CIRCUITS WHEN PLACING SIGNAL LINES ON GROUND AREA.

Rev.12

Plug Housing Assembly :



Rev.12

Connector Assembly :

ITEMS	SPECIFICATION
RATING VOLTAGE	50V AC/DC (PER CONTACT)
RATING AMPERAGE	0.5A AC/DC (PER CONTACT)/ 13A AC/DC(TOTAL)
OPERATING TEMPERATURE	233~358K(-40°C~+85°C)
OPERATING HUMIDITY	20~85%RH (NON-CONDENSING, NON-FREEZING)
CONTACT RESISTANCE	INITIAL: 50mohm MAX. / AFTER TEST: 70mohm MAX.
INSULATION RESISTANCE	100Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	20 CYCLES
ACTUATOR LOCKING FORCE (INITIAL / 20 CYCLES)	INITIAL / 20 CYCLES: 0.50N (51gf) × nN MAX.
ACTUATOR UNLOCKING FORCE (INITIAL / 20 CYCLES)	INITIAL / 20 CYCLES: 0.10N (10gf) × nN MIN.
FPC/FFC RETENTION FORCE	INITIAL / 20 CYCLES: 0.18N (18gf) × nN MIN.
COPLANARITY	0.10mm MAX.
PRODUCT SPECIFICATION	PRS-1937
TEST REPORT	TR-14023
PACKING STANDARD	PST-14015
INSTRUCTION MANUAL	HIM-06004
APPEARANCE CRITERIA No.	QLS-A***

Rev.12



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