FLEXIBLE PRINTED CIRCUIT (FPC) CONNECTORS

TE Connectivity's (TE) FPC interconnects are ideal where small centerline spacing makes larger wire-to-board interconnects impractical. As the market trends towards minaturization, FPC connectors have been developed to meet the challenges of an expanding market that demands smaller centerlines, lower profiles, and lighter interconnect solutions. TE's FPC interconnects utilize an actuator to secure the cable termination and are field terminatable (require no tooling). Available in 0.25mm, 0.3mm, 0.4mm, 0.5mm, 1.0mm and 1.25mm centerline spacing, TE's FPC interconnects are suited for a wide variety of applications.

Key Features

- Uses FPC / FFC cable
- Available in ZIF and non-ZIF versions
- Top, bottom and dual contact versions available
- Requires no application tooling
- Low profile height
- Light weight
- 0.25mm pitch series accepts angled insertion of flexible printed circuit

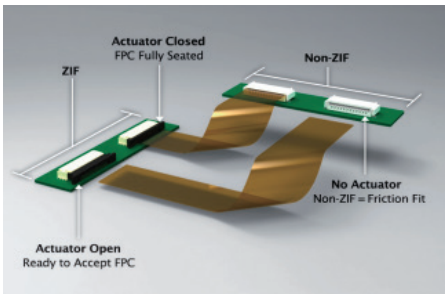
Key Benefits

- Space savings over other wire-to-board connectors
- Improved assembly efficiency
- Greater durability and tactile feel
- Design flexibility

Applications

- Flat flexible printed cable applications
- LC displays
- Game consoles
- Tablets
- Wearables
- Cameras
- Inkjet, laser and 3D printers
- Personal computers
- Mobile and smart phones
- GPS devices
- Streaming devices/set top boxes
- Disk drives
- Medical equipment

ZIF and non-ZIF Connector Styles



ZIF Connectors

- Use an actuator to secure the flex cable
- Less wear on contacts
- Increase mating cycle count
- Provide added retention
- Better for high vibration envrionments

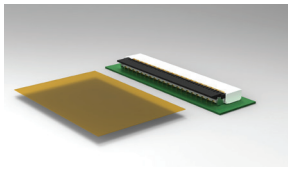
Non-ZIF Connectors

- Use friction to secure the flex cable
- Lower mating cycle count
- Better for static applications
- Smaller and lighter weight than ZIF counterpart
- Uses less space
- Typically less expensive than ZIF counterpart

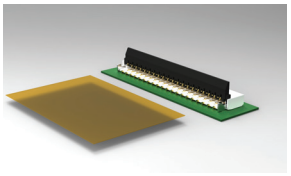
Actuator Styles

TE's fine pitch FPC connectors incorporate a flip lock actuator for greater printed circuit retention. This termination method also allows for zero insertion force (ZIF). The operation of a flip-lock actuator can be seen below.

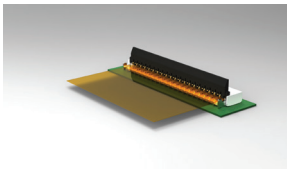
Front Flip-Lock Actuator



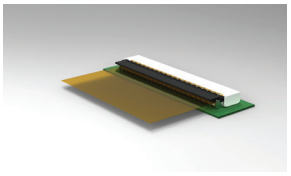
Step One: Open flip-lock actuator.



Step Two: Insert the FPC into the connector

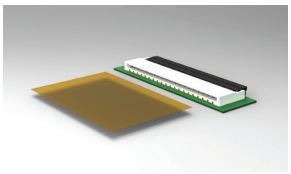


Step Three: With the FPC inserted, close the flip-lock actuator.

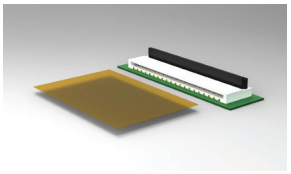


Step Four: Your FPC is now securely mated with the connector.

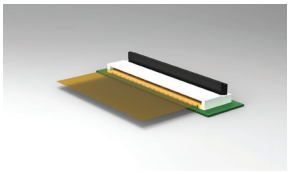
Back Flip-Lock Actuator



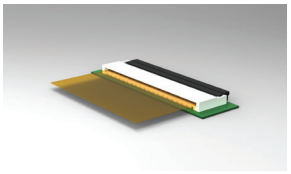
Step One: Open flip-lock actuator.



Step Two: Insert the FPC into the connector.



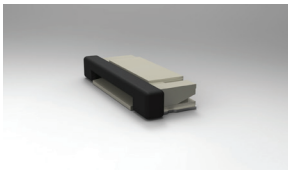
Step Three: With the FPC inserted, close the flip-lock actuator.



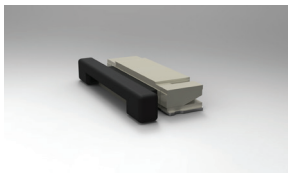
Step Four: Your FPC is now securely mated with the connector.

Stuffer Actuator (Plunger Style)

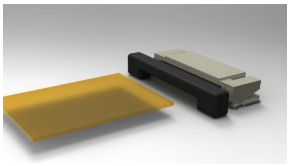
Larger pitch ZIF-style FPC connectors use a stuffer type actuator. Stuffer actuators are typically used in vertical applications for ease of use, however right angle versions are also available.



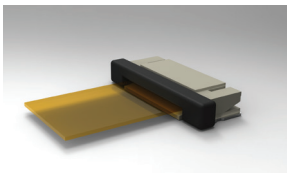
Step One: Starting state



Step Two: Slide stuffer forward to open



Step Three: Insert the FPC into the connector & slide stuffer backward to close

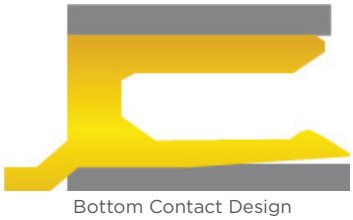


Step Four: Your FPC is now securely mated with the connector.

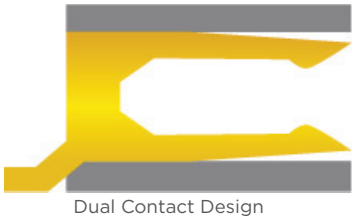
Contact Styles

TE's FPC connectors are available with a top contact, bottom contact or dual contact design. Choosing the correct contact design is generally based on the orientation of the flexible printed circuit. If the contacts of the flexible printed circuit are facing up, a top contact design is required. If they face down, a bottom contact design is required. A dual contact design can accomodate a flexible printed circuit facing in either orientation.

Top Contact Design



Bottom Contact Design



Dual Contact Design

Part Number Detail

0.25mm Pitch FPC Connector								
Retention Style	**Orientation**	**Contact Type**	**PCB Mount**	**Actuator Style**	**Plating**	**Features**	**Base PN**	**Position Count**
ZIF	Right Angle	Bottom Contact	SMT	Back Flip-Lock	Gold Flash	Angled Insertion	2040832	37 to 51

0.3mm Pitch FPC Connector								
Retention Style	**Orientation**	**Contact Type**	**PCB Mount**	**Actuator Style**	**Plating**	**Features**	**Base PN**	**Position Count**
ZIF	Right Angle	Top Contact	SMT	Back Flip-Lock	Gold Flash	-	2013928	25 to 43
		Bottom Contact	SMT	Back Flip-Lock	Gold Flash	-	2013496	27 to 45
				Front Flip-Lock	Gold Flash	-	2328274	13 to 45

0.5mm Pitch FPC Connector								
Retention Style	**Orientation**	**Contact Type**	**PCB Mount**	**Actuator Style**	**Plating**	**Features**	**Base PN**	**Position Count**
ZIF	Vertical	N/A	SMT	Stuffer	Gold Flash	Type A Layout*	1734741	6 to 40
						Type B Layout*	1734742	6 to 40
	Right Angle	Top Contact	SMT	Stuffer	30u" Gold	-	1775560	5 to 50
					Gold Flash	Narrow Body	1734839	5 to 50
		Bottom Contact	SMT	Stuffer	30u" Gold	-	1775635	5 to 50
					Gold Flash	Black Housing	1775628	5 to 50
						-	1734592	5 to 53
				Front Flip-Lock	Gold Flash	90 Degree Flip-Lock	1775333	4 to 56
						Locking	2041215	4 to 60
		Dual Contact	SMT	Back Flip-Lock	Gold Flash	Low Profile	2328702	4 to 10

1.0mm Pitch FPC Connector								
Retention Style	**Orientation**	**Contact Type**	**PCB Mount**	**Actuator Style**	**Plating**	**Features**	**Base PN**	**Position Count**
ZIF	Vertical	N/A	SMT	Stuffer	Gold Flash	-	1734248	3 to 40
	Right Angle	Top Contact	SMT	Stuffer	Tin	-	84953	4 to 30
		Bottom Contact	SMT	Stuffer	Tin	-	84952	4 to 30
					Gold Flash	-	1735265	4 to 30
Non-ZIF	Vertical	N/A	SMT	N/A	Tin	-	84982	4 to 30
			SMT			With Mylar	1735042	4 to 30
			T/H			-	84984	4 to 30
	Right Angle	Top Contact	SMT	N/A	Tin	-	84981	4 to 30
			T/H			-	84983	4 to 30
		Bottom Contact	SMT	N/A	Tin	-	1735360	4 to 30

1.25mm Pitch FPC Connector								
Retention Style	**Orientation**	**Contact Type**	**PCB Mount**	**Actuator Style**	**Plating**	**Features**	**Base PN**	**Position Count**
Non-ZIF	Vertical	N/A	T/H	N/A	Tin	-	84534	4 to 40
	Right Angle	Top Contact				-	84533	4 to 40

* NOTES: (Type A and B Layouts refer to circuit #1 position (see customer drawing for detail)

Frequently Asked Questions

Question 1:
What position sizes can TE provide?
Answer 1:
We offer odd number position sizes only, unless otherwise stated on the product drawing. We can also offer up to 71P in our 0.3mm series and up to 61P in our 0.25mm pitch series.

Question 2:
What is the advantage of angled flexible printed circuit insertion?
Answer 2:
Being able to insert and mate the FPC into the connector at an angle makes it possible to mount the FPC connector almost anywhere on your PCB as there is much less clearance needed in front of the connector during mating and unmating.

Question 3:
What is the minimum height of this product series?
Answer 3:
For the part numbers in this guide, 0.9mm is the lowest height.

Question 4:
What is the biggest differentiator of TE's FPC connector series?
Answer 4:
Our FPC connectors offer the same product function in one of the smallest form factors in the market. Our product also offers a distinct click lock and a larger vacuum pick up area.

Question 5:
What centerlines are your FPC connectors available in?
Answer 5:
TE's FPC connectors are available in centerlines ranging from 0.25 to 1.25mm.

Question 6:
Do you have products suited for a high vibration environment?
Answer 6:
Our ZIF version FPC connectors have a greater retention force and are suitable for high vibration environments.

Question 7:
Do you have products that are capable of a high amount of mating cycles?
Answer 7:
Our ZIF version FPC connectors allow for a greater number of mating cycles by using an actuator.

Question 8:
When should I use a top contact or a bottom contact version?
Answer 8:
If your flex cable contact pads face down, use a bottom contact version. If they face up, use a top contact version. Our dual contact version products can accomodate a cable in either orientation.

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TE Technical Support Center

USA:	1.800.522.6752
Canada:	1 .905.475.6222
Mexico:	52.0.55.1106.0800
Latin/S. America:	54.0.11.4733.2200
Germany:	49.0.6251.133.1999
UK:	44.0.800.267666
France:	33.0.1.3420.8686
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China:	86.0.400.820.6015