

STANDARD FLEXIBLE PRINTED CIRCUIT (FPC) CONNECTORS - 0.25MM, 0.3MM, 0.5MM, 1.0MM & 1.25MM PITCH

Quick Reference Guide

As the demands for higher-density packaging of electronic equipment increase, the use of flexible printed circuits (FPC) to reduce size, weight and assembly costs has expanded.

As with our fine pitch FPC product, our larger pitch FPC connectors are also an ideal solution for routing signal through your device when standard wire-to-board products are too large or impractical. Set on larger centerline pitch, these FPC products are generally found in larger mobile devices such as handheld scanners, cameras and GPS units; as well as in larger applications such as set-top boxes, business equipment and industrial controls.

FPC interconnects of this size are also commonly found on devices that have low-definition displays, touch panels or screens. This makes it very easy to identify potential FPC interconnect opportunities.

TE Connectivity's FPC solutions are available in 0.25mm, 0.3mm, 0.5mm, 1.0mm and 1.25mm centerline spacing.

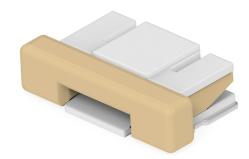
FEATURES AND BENEFITS

- Multiple Centerline Spacing Options
- ZIF and non-ZIF Versions Available
- Top and Bottom Contact Options
- Requires No Application Tooling

PRODUCT APPLICATIONS

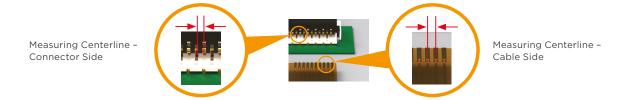
- Consumer Electronics
 - Hand-Held Scanners
 - POS Devices / Payment
- Terminals
 - Set-Top Boxes
 - PCs
 - PC Peripherals
- Business Equipment
- Industrial Equipment
 - Industrial Controls
 - Gas Pumps
 - ATMs
 - Slot Machines
- Medical Equipment





BASIC INFORMATION

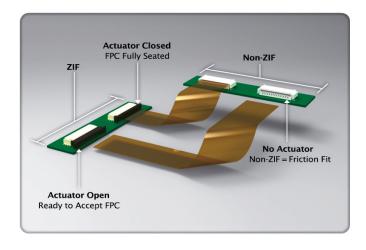
Multiple Centerlines



Centerline can be measured many different ways; however, in general, it is simply the spacing between the center of one contact and the center of its neighboring contact.

Here you can see an example of the centerline spacing on an FPC connector and the centerline spacing on a flexible printed circuit cable.

ZIF AND NON-ZIF



ZIF Connectors

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

Non-ZIF Connectors

- Use friction to secure the flex cable
- Lower mating cycle count
- Better for static applications
- Smaller and lighter weight than equivalent ZIF counterpart
- Take up less board real-estate
- Typically less expensive than equivalent ZIF counterpart

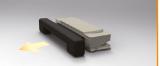
STUFFER ACTUATOR (PLUNGER STYLE)

Many of our larger pitch ZIF-style FPC connectors use a stuffer-type actuator [See Below]. Stuffer actuators use a slightly different method to secure an FPC cable into the connector than the flip-lock versions [For flip-lock versions, see Fine Pitch FPC Connector Quick Reference Guide, document number 8-1773459-2].

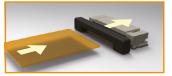
Stuffer actuators are typically used in vertical applications for ease of use: however right angle versions are also available.



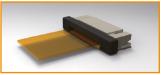
Step One: Starting State



Step Two:Slide Stuffer forward to open



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

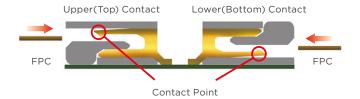


Step Four:
The FPC is now securely mated with the connector

UPPER (TOP) CONTACT VS LOWER (BOTTOM) CONTACT

Many of our fine pitch FPC products are available in both Upper (top) or Lower (bottom) contact versions. This attribute simply represents which portion of the contact the flexible printed circuit interacts with. As you can see from the image below, the FPC contacts are formed in a "U" shape. Only one prong of that "U" shaped contact interfaces with the flexible printed circuit contacts. Choosing the correct contact design is generally based on the orientation of the flexible printed circuit as described below.

If the contacts of the flexible printed circuit are facing up (away from the board) then the upper contact version is required.



If the contacts of the flexible printed circuit are facing down (towards the board) then the lower contact version is required.

0.25MM PITCH (ZIF)

								1	2	3	4	5 (6 7	7 8	3 9	10	11	12	13	14	15	16	17	18 1	9 2	0 2	1 22	23	24	25	26	27	28	29	0
ORIENTATION	CONTACT	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	31	32	33 3	34 3	35 3	6 3	37 3	8 39	9 40	41	42	43	44	45	46	47	48 4	9 5	0 5	1 52	53	54	55	56	57	58	59	0
		1100111	STILL																F	os	ITIC	N S	ZE												
RIGHT	воттом	SMT	BACK FLIP-		ANGLED	шишиши	2040832																												
ANGLE	5011011	3.11	LOCK	FLASH	7.110223		2010002						3	57			41				45					5	1								

0.3MM PITCH (ZIF)

								1	2	3	4	5	6	7 8	3 9	10	11	12	13	14	15	16 17	7 18	19	20	21	22	23	24 2	25	26 2	7 2	8 2	9 30
ORIENTATION	CONTACT	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	31	32	33	34	35 3	36 3	37 3	8 39	9 40	41	42	43	44	45	16 4	7 48	3 49	50	51	52	53	54 5	55	56 5	7 5	8 5	9 60
	11172	1400141	JIILL																F	os	ITIO	N SIZ	ZΕ											
RIGHT	воттом	SMT	FRONT	GOLD	N/A		2328724												13		15					21			1	25				
ANGLE	воттом	3111	FLIP-LOCK	FLASH	N/A	mm	2320724	31		33					39	9					45													

0.5MM PITCH (ZIF)

ORIENTATION	CONTACT	РСВ	ACTUATOR	DI ATING	FEATURES	IMAGE	BASE PN	-	2	-	4	-	6	7	-	9 1	-	-	-									_		_		-	_	-	
ORIENTATION	TYPE	MOUNT	STYLE	PLATING	FEATURES	IMAGE	BASE PIN	31	32	33	34	33	30	3/	30 .	9 4	0 4	42			SITIO				49	50	31	52	55	54	55	30	5/ :	10 3	19 0
RIGHT	TOP.	CMT	CTUEFED	"GOLD	"NARROW		177.4070					5	6	7	8	9 1	0 11	12		14	15	16	17	18	19	20	21		23	24	25		27	2	29 3
ANGLE	TOP	SMT	STUFFER	FLASH"	BODY"		1734839	31					36	37		4	0 41		43	44		46	47	48	49	50									
VERTICAL	N/A	CMT	STUFFER	GOLD	TYPE A		177.47.41						6	7	8	9 1	0 11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28 2	29
VERTICAL	N/A	SMT	STOFFER	FLASH	LAYOUT*		1734741	31	32	33	34	35	36	37	38	39 4	0																		
VEDTICAL	N/A	CMT	CTUEFED	GOLD	TYPE B		177.4740						6	7	8	9 1	0 11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28 2	29 3
VERTICAL	N/A	SMT	STUFFER	FLASH	LAYOUT*		1734742	31	32	33	34	35	36	37	38	39 4	0																		
				GOLD								5	6	7	8	10	0 11	12	13	14		16	17	18	19	20	21	22	23	24	25	26	27		3
RIGHT ANGLE	BOITOM	SMT	STUFFER	FLASH	N/A		1734592	31			34		36		38	39 4	0 41		43				47		49	50									
	DUAL		BACK FLIP-	GOLD	LOW						4		6		8	10	0					16								24					
RIGHT ANGLE	CONTACT	SMT	LOCK	FLASH	PROFILE 2328702	No.	2328702																												

1.0MM PITCH (ZIF)

ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	2 3 32 33		5 35								44	45		7 48					23 2 53 5						
VERTICAL	N/A	SMT	STUFFER	GOLD FLASH	N/A		1734248	3	4	5	6	7	8 9	9 10) 11	1 12	13	14	15	16 1	7 18	19	20	21	22	2	24 2	5 26	27	28	29	30
RIGHT ANGLE	TOP	SMT	STUFFER	TIN	N/A		84953		4	5	6	7	8 9	9 10) 11	1 12	13	14	15	16 1	7 18	19	20	21	22	23 2	24 2	5 26	27	28	29	30
RIGHT ANGLE	воттом	SMT	STUFFER	TIN	N/A	am	84952		4	5	6	7	8 9	9 10) 11	1 12	13	14	15	16 1	7 18	19	20	21	22	23 2	24 2	5 26	27	28	29	30
RIGHT ANGLE	воттом	SMT	STUFFER	GOLD FLASH	N/A		1735265		4	5	6	7	8 9	9 10) 11	1 12	13	14	15	16 1	7 18	19	20	21	22	23 2	24 2	5 26	27	28	29	30

1.0MM PITCH (NON ZIF)

ORIENTATION	CONTACT		ACTUATOR	PI ATING	FEATURES	IMAGE	BASE	2 32	3 3	4 5		7 37	8 38	9 39	10 40													24 54						
	TYPE	MOUNT	STYLE				PN											PC	OSIT	101	ISIZ	Έ												
VERTICAL	N/A	SMT	N/A	TIN	N/A		84982			4 5	6	7	8	9	10	11	12	13 1	14 1	5 1	6 1	7 18	3 19	9 2	0 2	1 2:	2 23	24	25	26	27	28	29	30
VERTICAL	N/A	SMT	N/A	TIN	WITH MYLAR		1735042			4 5	6	7	8	9	10	11	12	13 1	14 1	5 1	6 1	7 18	3 19	9 2	0 2	1 2:	2 23	24	25	26	27	28	29	30
VERTICAL	N/A	T/H	N/A	TIN	N/A	111	84984			4 5	6	7	8	9	10	11	12	13 1	14 1	5 1	6 1	7 18	3 19	9 2	0 2	1 2:	2 23	24	25	26	27	28	29	30
RIGHT ANGLE	TOP	SMT	N/A	TIN	N/A		84981			4 5	6	7	8	9	10	11	12	13 1	14 1	5 1	6 1	7 18	3 19	9 2	0 2	1 2:	2 23	24	25	26	27	28	29	30
RIGHT ANGLE	TOP	T/H	N/A	TIN	N/A		84983			4 5	6	7	8	9	10	11	12	13 1	14 1	5 1	6 1	7 18	3 19	9 2	0 2	1 2:	2 23	24	25	26	27	28	29	30
RIGHT ANGLE	воттом	SMT	N/A	TIN	N/A	No.	1735360			4 5	6	7	8	9	10	11	12	13 1	14 1	5 1	6 1	7 18	3 19	9 2	0 2	1 22	2 23	24	25	26	27	28	29	30

1.25MM PITCH (NON-ZIF)

	CONTACT	РСВ	ACTUATOR					1	2	3	4	5	6	7	8	9 1	0 11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27 2	28 2	29 30
ORIENTATION	TYPE	MOUNT	STYLE	PLATING	FEATURES	IMAGE	BASE PN	31	32	33	34	35	36	37	38 3	39 4	0 4	1 42	_			46 N S			49	50	51 !	52	53	54	55	56	57 5	58 5	9 60
VERTICAL		7/11			21/0	12	0.457.4				4	5	6	7	8	9 1	0 11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27 2	28 2	29 30
VERTICAL	N/A	T/H	N/A	TIN	N/A		84534	31	32	33	34	35	36	37	38 3	39 4	0																		
RIGHT	TOP	T/H	N/A	TIN	N/A		0.4577				4	5	6	7	8	9 1	0 11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27 2	28 2	29 30
ANGLE	100	1/H	IN/A	IIN	N/A	*********		31	32	33	34	35	36	37	38 3	39 4	0																		

FREQUENTLY ASKED QUESTIONS

Question 1

Is there a pitch requirement for your interconnect need?

Answer 1

TE offers FPC products from 0.25mm to 1.25mm centerline spacing.

Question 2

Is your application in a high vibration environment?

Answer 2

ZIF version FPC interconnects have a greater retention force and are suitable for high vibration applications.

Question 3

Do you have a need for a higher number of mating cycles?

Answer 3

ZIF version FPC interconnects allow for a greater number of mating cycles via the use of an actuator.

Question 4

In your application, when the flex cable meets the board-mounted connectors, will the flex cable contact pads be face up or face down?

Answer 4

If face down, use bottom contact versions. If face up, use top contact versions.

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