

# **FCi Basics**

## **FFC-FPC Connectors**

**Amphenol**  
COMMUNICATIONS SOLUTIONS

# FFC/FPC Connector Overview - 0.50mm Pitch

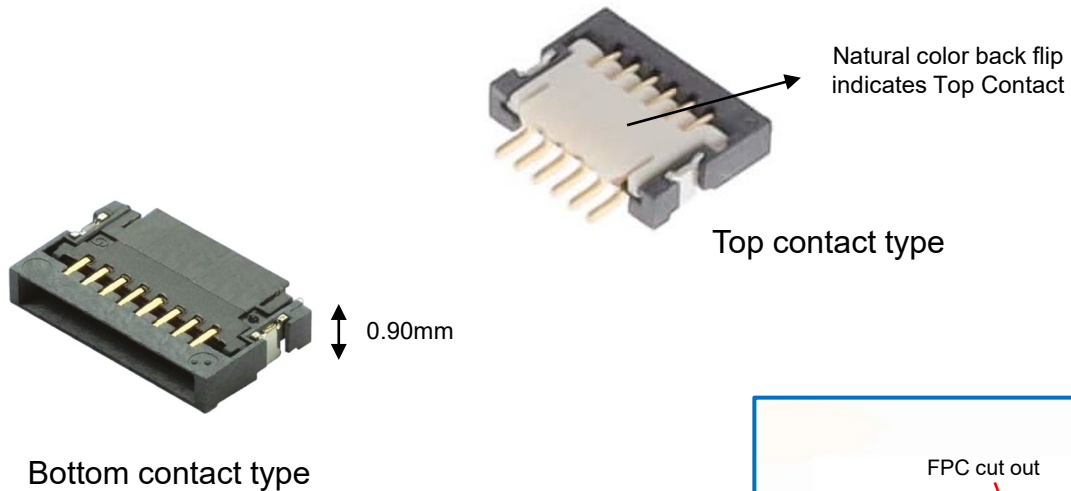
Product Family		SFVL_D	SFVL_U	VLL	SFV_RD	SFV_RU	OPU_D	OPU_U
Part Number		59453	59453	10051922	SFV	SFV	62684	62684
Pitch		0.5 mm	0.5 mm	0.5 mm	0.5 mm	0.5 mm	0.5 mm	0.5 mm
Product Image		 	 	 	 	 	 	 
Configuration		Right-Angle Surface Mount	Right-Angle Surface Mount	Right-Angle Surface Mount	Right-Angle Surface Mount	Right-Angle Surface Mount	Right-Angle Surface Mount	Right-Angle Surface Mount
Options		Cable Lock	Cable Lock	N/A	Cable Lock	Cable Lock	N/A	N/A
Height		0.9 mm	0.9 mm	1.3 mm	1.8 mm	1.8 mm	2.0 mm	2.0 mm
ZIF or Non-ZIF		ZIF Back Side Flip	ZIF Back Side Flip	ZIF Back Side Flip	ZIF Slider	ZIF Slider	ZIF Slider	ZIF Slider
Standard Plating		Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating
Contact direction		Bottom	Top	Bottom	Bottom	Top	Bottom	Top
Cable thickness		0.2 mm	0.2 mm	0.3 mm	0.3 mm	0.3 mm	0.3 mm	0.3 mm
Positions		4,5,6,7,8,9,12,13	4,5,6,8	8 up to 30	4 up to 35	4 up to 35	32 up to 60	32 up to 57
Max Rating	Amp	0.4A (AC/DC)	0.4A (AC/DC)	0.5A (AC/DC)	0.5A (AC/DC)	0.5A (AC/DC)	0.5A (AC/DC)	0.5A (AC/DC)
	Voltage	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)	50V (AC/DC)
Operating Temperature		-55°C ~ +105°C	-55°C ~ +105°C	-55°C ~ +85°C	-55°C ~ +105°C	-55°C ~ +105°C	-55°C ~ +85°C	-55°C ~ +85°C
Vibration & Mechanical Shock		Pass the SAE/USCAR-2	Pass the SAE/USCAR-2	IEC60068-2-6 (JIS C 60068-2-6)	IEC60068-2-6 (JIS C 60068-2-6)	IEC60068-2-6 (JIS C 60068-2-6)	IEC60068-2-6 (JIS C 60068-2-6)	IEC60068-2-6 (JIS C 60068-2-6)
Application		Mobile phone, Action CAM, Head Phone, Backlight	Wearable, Medical device, Smart meter, Backlight	Camera unit, Printer, Network server	Sensor unit, Home Appliance, Handheld	Sensor unit, Home Appliance, Handheld	IP phone, Medical Equipment, Printer	Home Audio, Display, Industrial Control
Link to info		<a href="#">0.50mm FFC-FPC</a>	<a href="#">0.50mm FFC-FPC</a>	<a href="#">0.50mm FFC-FPC</a>	<a href="#">0.50mm FFC-FPC</a>	<a href="#">0.50mm FFC-FPC</a>	<a href="#">0.50mm FFC-FPC</a>	<a href="#">0.50mm FFC-FPC</a>

# FFC/FPC Connector Overview - 1.00mm Pitch

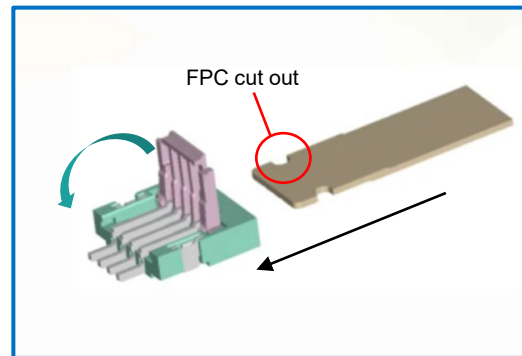
Product Family		SFW_RD	SFW_RU	SFW_S	HFW_RD	HFW_RU	HFW_S	HLW_R	HLW_S
Part Number		SFW	SFW	SFW	HFW	HFW	HFW	HLW	HLW
Pitch		1.0 mm	1.0 mm	1.0 mm	1.0 mm	1.0 mm	1.0 mm	1.0 mm	1.0 mm
Product Image									
Configuration		Right-Angle Surface Mount	Right-Angle Surface Mount	Vertical Surface Mount	Right-Angle Surface Mount	Right-Angle Surface Mount	Vertical Surface Mount	Right-Angle Through Hole	Vertical Through Hole
Options		Cable Lock; CIC Contact; Gold Plating	Cable Lock; CIC Contact; Gold Plating	Gold Plating	CIC Contact; Gold Plating	CIC Contact; Gold Plating	Gold Plating	CIC Contact	CIC Contact
ZIF or Non-ZIF		ZIF Slider	ZIF Slider	ZIF Slider	Non-ZIF	Non-ZIF	Non-ZIF	Non-ZIF	Non-ZIF
Standard Plating		Tin Plating	Tin Plating	Tin Plating	Tin Plating	Tin Plating	Tin Plating	Tin Plating	Tin Plating
Height		2.7 mm	2.7 mm	5.3 mm	1.9 mm	1.9 mm	5.3 mm	3.9mm	5.9mm
Contact direction		Bottom	Top	Vertical	Bottom	Top	Vertical	Top	Vertical
Cable thickness		0.3 mm	0.3 mm	0.3 mm	0.3 mm	0.3 mm	0.3 mm	0.3 mm	0.3 mm
Positions		4 up to 30	4 up to 30	4 up to 30	4 up to 30	4 up to 30	4 up to 32	4 up to 32	4 up to 32
Max Rating	Amp	1A (AC/DC)	1A (AC/DC)	1A (AC/DC)	1A (AC/DC)	1A (AC/DC)	1A (AC/DC)	1A (AC/DC)	1A (AC/DC)
	Voltage	100V (AC/DC)	100V (AC/DC)	100V (AC/DC)	100V (AC/DC)	100V (AC/DC)	100V (AC/DC)	100V (AC/DC)	100V (AC/DC)
Operating Temperature		-55°C ~ +105°C	-55°C ~ +105°C	-55°C ~ +105°C	-55°C ~ +105°C	-55°C ~ +105°C	-55°C ~ +105°C	-55°C ~ +85°C	-55°C ~ +85°C
Vibration & Mechanical Shock		Pass the SAE/USCAR-2	Pass the SAE/USCAR-2	IEC60068-2-6 (JIS C 60068-2-6)	IEC60068-2-6 (JIS C 60068-2-6)	IEC60068-2-6 (JIS C 60068-2-6)	IEC60068-2-6 (JIS C 60068-2-6)	IEC60068-2-6 (JIS C 60068-2-6)	IEC60068-2-6 (JIS C 60068-2-6)
Application		Printer, Video Server, Car Tail Lamp, Handheld	Printer, Home Audio, Display connector	Printer, Gas Metering, Headset	Printer, Medical Equipment, Sound Bar	Printer, Home Audio, Display connector	Printer, Home Audio, Game	Printer, HOME AUDIO, LED Lighting	Printer, HOME AUDIO
Link to info		<a href="#">1.00mm FFC-FPC</a>	<a href="#">1.00mm FFC-FPC</a>	<a href="#">1.00mm FFC-FPC</a>	<a href="#">1.00mm FFC-FPC</a>	<a href="#">1.00mm FFC-FPC</a>	<a href="#">1.00mm FFC-FPC</a>	<a href="#">1.00mm FFC-FPC</a>	<a href="#">1.00mm FFC-FPC</a>

# 0.5mm Flex Connector – Right Angle

Halogen Free



SFVL



The back side flip design allows for a one-handed cable insertion and actuation process. The standard **cable lock** feature ensures proper cable insertion and prevents unintentional cable release

## Configurations

- Positions: 4 to 13 contacts
- Height: 0.90mm (SFVL)
- ZIF – Back Side Flip
- Contact direction: Bottom and Top
- Current rating: 0.4A
- Durability: 20 mating cycles

## Features

- Back Side Flip actuator design
- Low profile of less than 1mm
- Standard cable locking feature

Preferred Parts	Description
<a href="#">59453-xx1110ECHLF</a>	Bottom contact
<a href="#">59453-xx2110ECHLF</a>	Top contact
<a href="#">0.50mm FFC-FPC Landingpage</a>	

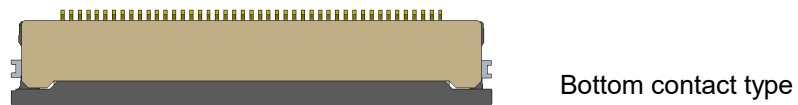
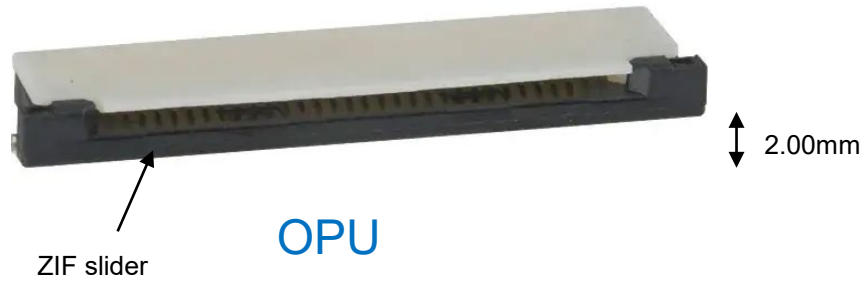
xx = positions

gold plating

The SFVL and VLP series offer a **low profile**, space-saving, and strong FPC retention force (cable lock) even for small positions

# 0.5mm Flex Connector – Right Angle

Halogen Free



The OPU series offer **high pin counts** with slider action

## Configurations

- Positions: 32 to 60 (OPU)
- Height: 2.0mm
- ZIF slider (OPU)
- Contact direction: Top, Bottom
- Current rating: 0.5A
- Durability: 20 mating cycles

## Features

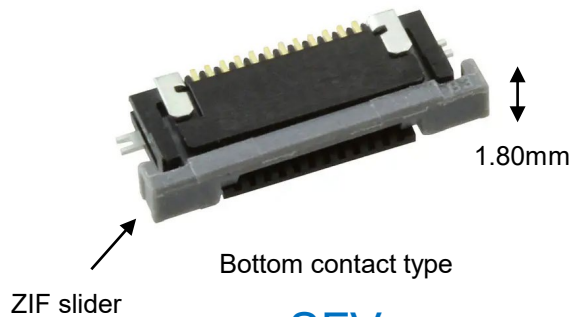
- Higher pin count
- Right-angle

Preferred Parts	Description
<a href="#">62684-xx1100ALF</a>	Bottom contact
<a href="#">62684-xx2100ALF</a>	Top contact
<a href="#">0.50mm FFC-FPC Landingpage</a>	

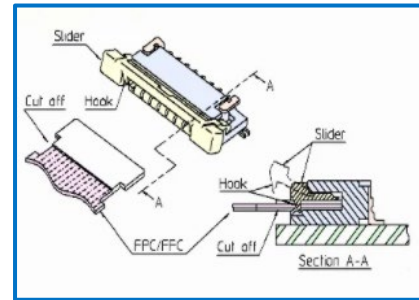
xx = total positions  
gold plating

# 0.5mm Flex Connector – Right Angle

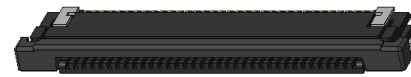
Halogen Free



SFV



The cable lock feature ensures proper alignment during mating and prevents un-intentional cable release

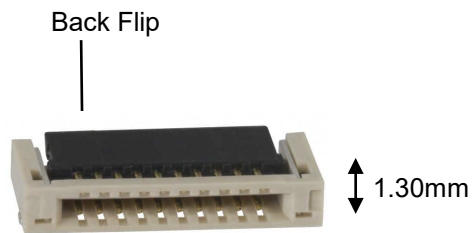


Bottom contact type



Top contact type

The back side flip actuator allows the user to insert the flex cable and lock the actuator with one hand.



VLL



SECTION POINT ACTION	SECTION OF CONTACT
CLOSE	
50DEG OPEN	
FINISHED OPEN (100DEG)	

## Configurations

- Positions: 4 to 60 contacts
- Height: 1.30mm (VLL); 1.80mm (SFV)
- ZIF – Back Side Flip (VLH-VLL) and Slider (SFV)
- Contact direction: Top, Bottom
- Current rating: 0.5A (0.4A: VLL)
- Durability: 20 mating cycles

## Features

- Higher pin count
- Cable Lock (SFV)

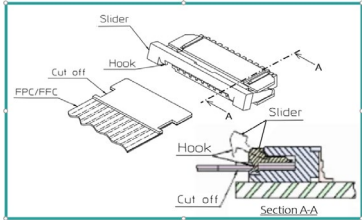
Preferred Parts	description
<a href="#">SFVxxR-1STBE1HLF</a>	Bottom contact
<a href="#">SFVxxR-2STBE1HLF</a>	Top contact
<a href="#">SFVxxR-3STBE1HLF</a>	Bottom contact - Cable Lock
<a href="#">SFVxxR-4STBE1HLF</a>	Top contact - Cable Lock
<a href="#">10051922-xx10ELF</a>	Bottom contact
<a href="#">0.50mm FFC-FPC Landingpage</a>	

xx = total positions  
gold plating

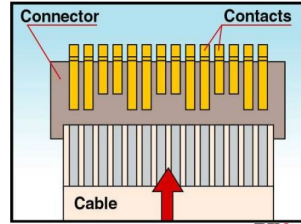
SFV and VLL offer a **low profile solution** with up to 60 contacts

# 1.00mm Flex Connector – Right Angle

## Halogen Free

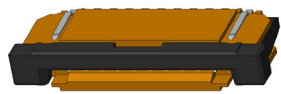
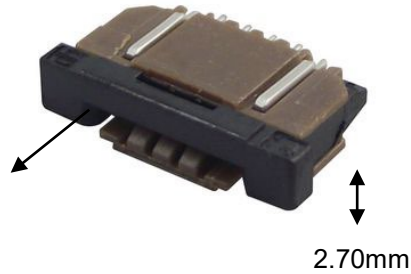


The cable lock feature ensures proper alignment during mating and prevents un-intentional cable release



The cable lock feature ensures proper alignment during mating and prevents un-intentional cable release

ZIF with prehold, which applies a small retention force on the cable to hold it in place until the actuator is locked.

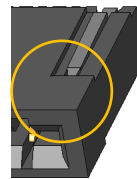


Bottom contact type

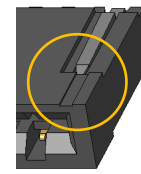


Top contact type

**SFW**



Bottom contact type



Top contact type

**HFW**

SFW and HFW support complex board-to-board connections, **ideal for demanding applications**. The cable lock option for SFW provide strong FFC/FPC retention.

## Configurations

- Positions: 4 to 30 contacts
- Height: 1.90 (HFW) and 2.70mm (SFW)
- ZIF (SFW) and Non-ZIF (HFW)
- Contact direction: Top & Bottom
- Current rating: 1A
- Durability: 20 mating cycles

## Features

- Surface Mount
- Right-angle
- Non-ZIF and slider lock mechanisms ensure strong FFC/FPC retention

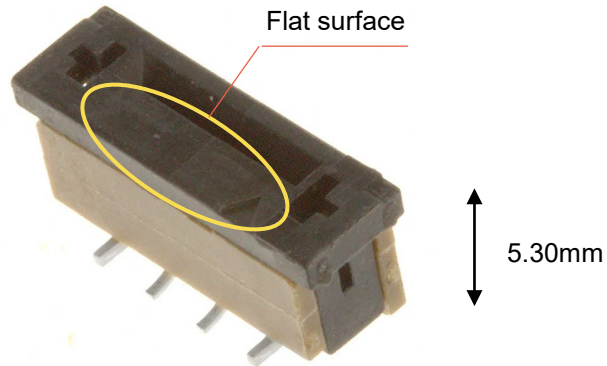
Preferred Parts	Description
<a href="#">SFWxxR-1STE1LF</a>	Tin plating, Bottom contact
<a href="#">SFWxxR-1STAE1LF</a>	Gold plating, Bottom contact
<a href="#">SFWxxR-2STE1LF</a>	Tin plating, Top contact
<a href="#">SFWxxR-2STAE1LF</a>	Gold plating, Top contact
<a href="#">HFWxxR-1STE1H1LF</a>	Tin plating, Bottom contact
<a href="#">HFWxxR-2STE1H1LF</a>	Tin plating, Top contact

[1.00mm FFC-FPC Landingpage](#)

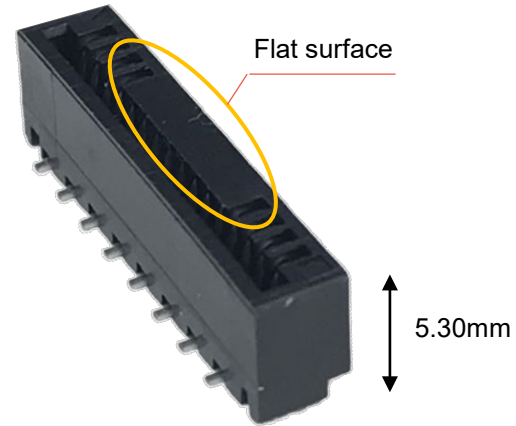
xx = total positions

# 1.00mm Flex Connector – Vertical

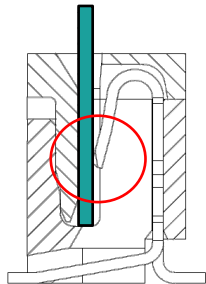
Halogen Free



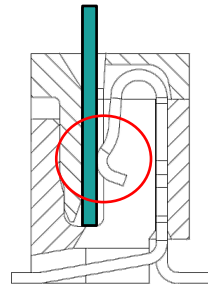
SFW



HFW



Edge type contact



Round shape contact

SFW and HFW connectors connect LCD displays and support complex board-to-board connections, ideal for demanding applications. Both have a flat surface at the top of the connector and do not require a cap or tape for pick and space.

## Configurations

- Positions: 4 to 30 contacts
- Height: 5.30 mm
- ZIF and Non-ZIF
- Contact direction:, Vertical
- Current rating: 1A
- Durability: 20 mating cycles

## Features

- Surface Mount
- Vertical orientation
- Non-ZIF and slider lock mechanisms ensure strong FFC/FPC retention

Preferred Parts	Description
<a href="#">SFWxxS-2STE1LF</a>	Tin plating
<a href="#">SFWxxS-2STAE1LF</a>	Gold plating
<a href="#">HFWxxS-4STZE1HLF</a>	Tin plating
<a href="#">HFWxxS-2STAE1HLF</a>	Gold plating
<a href="#">1.00mm FFC-FPC Landingpage</a>	

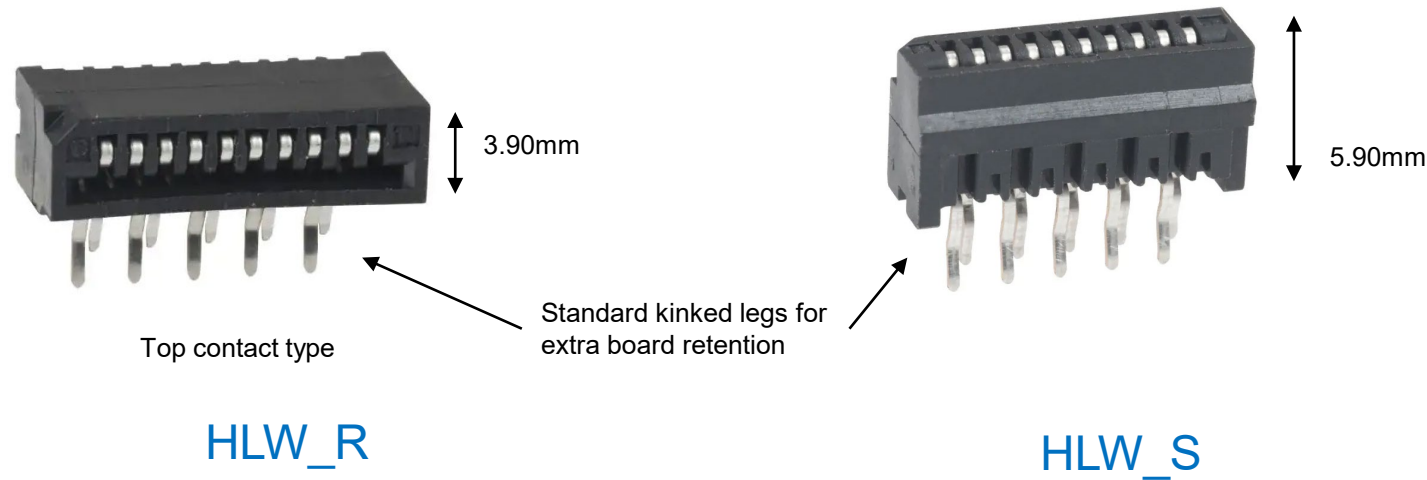
xx = total positions



# 1.00mm Flex Connector – Right Angle & Vertical

Halogen Free

**Through Hole**



## Configurations

- Positions: 4 to 30 contacts
- Height: 3.90 mm (HFW\_R) / 5.90mm (HLW\_S)
- Non-ZIF
- Contact direction: Top & Vertical
- Current rating: 1A
- Durability: 20 mating cycles

## Features

- Through hole type termination
- Non-ZIF easy operation of FFC/FPC
- Pin-in past type available (special option)
- Standard Kinked Legs for good board retention

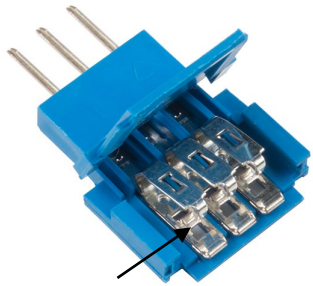
Preferred Parts	Description
<a href="#">HLWxxR-2C7HLF</a>	Tin plating
<a href="#">HLWxxS-2C7HLF</a>	Tin plating
<a href="#">1.00mm FFC-FPC Landingpage</a>	

xx = total positions  
kinked legs

HLW connectors support complex board-to-board connections, ideal for demanding applications.

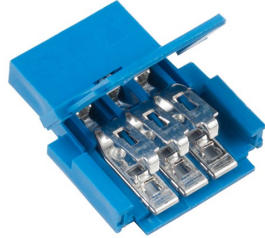
# 2.54mm Flex Connector - Clincher™

Male Pin

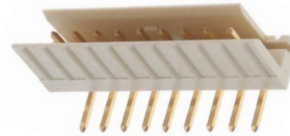


Pre-loaded contacts

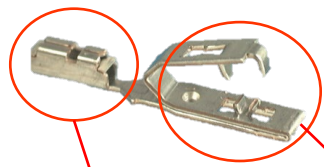
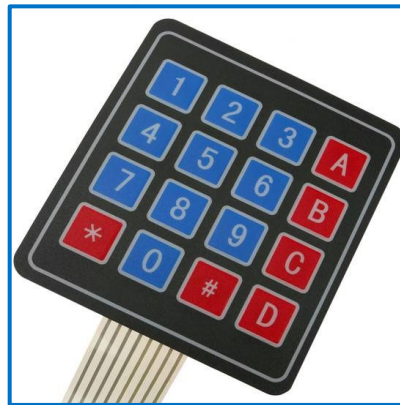
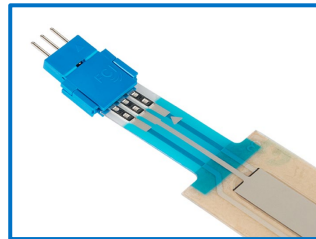
Receptacle



Right Angle  
PCB Header



Straight  
PCB Header

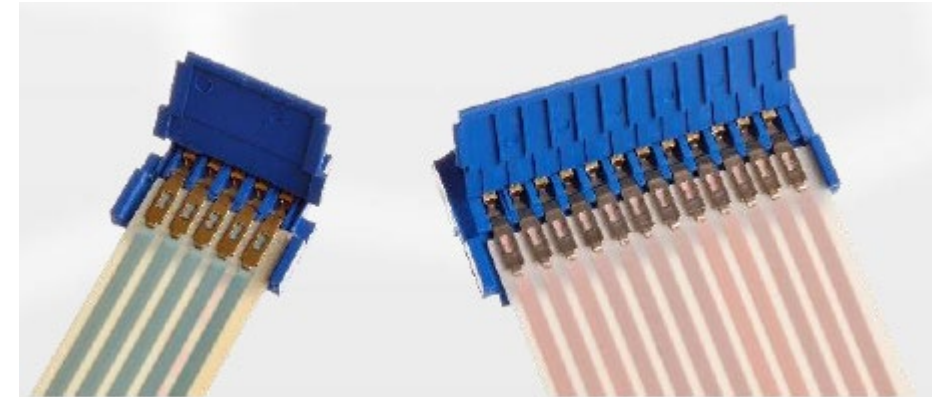


Dual-metal Mini-PV™  
receptacle contact

“Clinching” section of  
contact forms a gas-  
tight, 4 point crimp

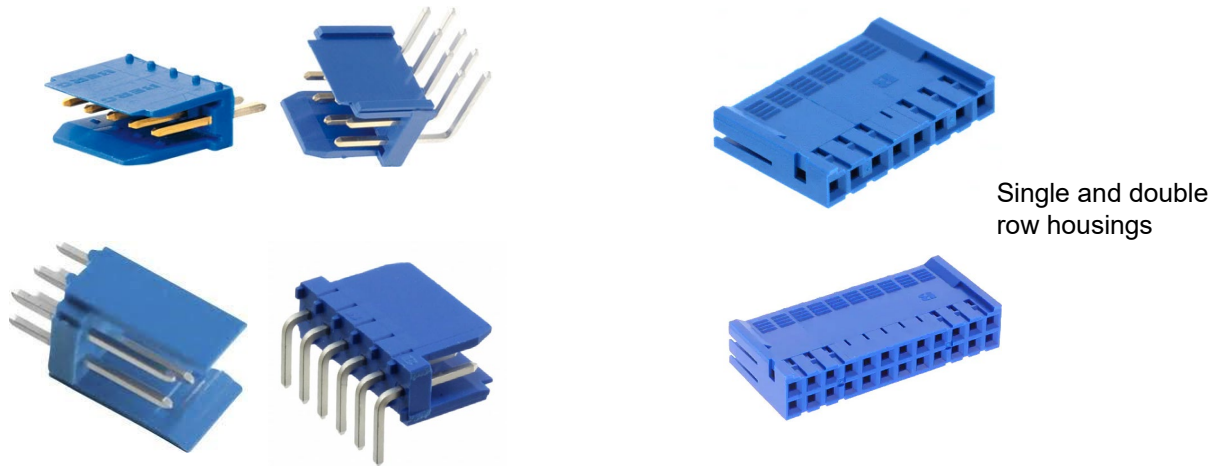
## Configurations

- Positions: 2 to 34 contacts
- Height: 2.49mm HSG Thickness
- Contact direction: Top
- Current rating: 2A
- Durability: 1000 mating cycles



Preferred Parts	Description
<a href="#">65801</a>	Single Row Receptacle
<a href="#">67516</a>	Single Row Receptacle - passive latch
<a href="#">66226</a>	Single Row Male Pin
<a href="#">95735</a>	Single Row Header Straight TMT
<a href="#">95736</a>	Single Row Header Right-Angle TMT
<a href="#">78242</a>	Flying latch
<a href="#">Clincher Landingpage</a>	

# 2.54mm Flex Connector - Duflex™



FCI Basics Duflex™ connectors represent a low cost and reliable solution for mass termination of FPC/FFC and touch membrane switches.

## Configurations

- Positions: 2 to 36 SR; 4 to 72 DR
- Height:
  - Single row 3.80mm
  - Double row 6.34mm
- Contact direction: Top
- Current rating: 3A

## Features

- Reliable dual-beam contact design with pre-stressed contact beam
- Allows mass termination to unprepared cable
- Contacts fit all housing styles

Preferred Parts	Description
<a href="#">76785</a>	Duflex™ terminal
<a href="#">67013</a>	Single Row Housing
<a href="#">66987</a>	Double Row Housing
<a href="#">76384</a>	Single Row Header STR TMT
<a href="#">76382</a>	Single Row Header RA TMT
<a href="#">76385</a>	Double Row Header STR TMT
<a href="#">76383</a>	Double Row header RA TMT
<a href="#">Duflex landing page</a>	