

SMK Develops FPC/FFC Connector Featuring Reliable Locking



SMK has developed FV-1 Series FPC/FFC connectors featuring high contact reliability for vehicle powertrains such as automotive batteries and inverters.

Conventionally, wires and crimping connectors were mainly used for the connection between automotive units, but in recent years, there has been a trend to replace crimping connectors with FPC/FFC connectors to make automotive products thinner, lighter, and easier to assemble. SMK's new FPC/FFC connector, developed against this backdrop, achieved about 60%*¹ reduction in height compared to SMK's conventional crimping connector and contributes to the downsizing and lower profile of the final products.

Compared to one-piece type connectors in which the FPC/FFC is directly inserted into the receptacle, this product, with a two-piece structure, in which the receptacle and plug housings are locked together, provides a more secure connection, making it suitable for automotive applications under high-vibration and shock environments. Also, it has a housing structure that prevents the FPC/FFC contact points from being touched when mating, which improves assembly workability.

As a connector with high resistance to vibration and shock, FV-1 Series is also ideal for applications besides automobiles, such as industrial robots.

*¹ Comparison between crimping connector (CSC5016-1101F) and FV-1 Series (CFF5712-0101F)

[Applications]

Automotive batteries (connection of CMUs*² and BMSs*³), inverters, industrial robots, etc.

*² CMU: Cell Management Unit

*³ BMS: Battery Management System

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Product Name	FPC/FFC Connector "FV-1 Series" Part Number: CFF57XX-01YYF (Receptacle), CFF59XX-01YYF (Plug)	
Features	<ol style="list-style-type: none"> 1) Extensive lineups: FV-1A (8~20Pin) and FV-1B (24~40Pin) in FV-1 Series 2) Low Profile: Height 6.5 mm (FV-1A), 8.0 mm (FV-1B) 3) Structure that prevents touching FPC/FFC contact points during mating process 4) Simple assembly process <ul style="list-style-type: none"> - One-touch mating with only low insertion force - Easy removal by pushing the lever to unlock 	
Major Specifications	Rating	200V DC / 1A
	Contact Resistance	30mΩ maximum
	Insulation Resistance	100MΩ minimum
	Withstanding Voltage	500V AC
	Operating Temperature Range	-40°C to +105°C
	External Dimensions (W×D×H)	12Pin: 30 mm × 20 mm × 6.5 mm 40Pin: 40 mm × 25 mm × 8 mm
	Mounting Method	PCB Mount (Reflow-soldering)
	Packaging	Receptacle: Reel, Plug: Tray
	Mating/Unmating Cycles	10 cycles
	Pin Count Variations	FV-1A: 8, 10, 12, 14, 16, 18, 20Pin FV-1B: 24, 28, 32, 36, 40Pin *Please contact us for other pin counts.
	Available Samples	12, 20, 40Pin *Please contact us for other pin counts.
Taking Orders	Started	
Mass Production	Started	
Sample Price	Please contact us for pricing.	
Inquiry	For more information, please contact CS Division	