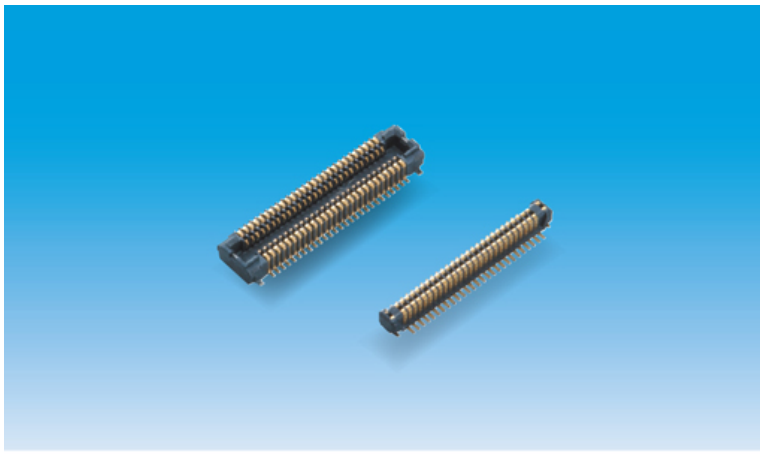
Jun 6, 2017

Panasonic Commercializes High Current 0.4-mm Pitch Board-to-Board / Board-to-FPC Connector



0.4mm pitch　High current connector　P4SP
(June 2017 Panasonic)

Panasonic's high current 0.4-mm pitch connector realizes the industry's highest level of current rating of up to 5 A for power supply applications. This can allow the number of terminals required for power supply to be reduced and save space on the circuit board, thereby contributing to compact-sizing of equipment.

Osaka, Japan - Panasonic Corporation has commercialized a 0.4-mm pitch board-to-board / board-to-flexible printed circuit board (FPC) connector (P4SP series) corresponding to the industry's highest-level*1 current rating of up to 5 A for power supply applications. Sample production will be started in June 2017.

With the recent trend toward high functionality, compact and lightweight design, and increasing use of quick charging in both industrial and consumer equipment, high current rating is required for the connectors used for connecting the power supply board with the control board. Panasonic's proprietary material processing technology has enabled the commercialization of a 0.4-mm terminal pitch board-to-board / board-to-FPC connector corresponding to the industry's highest-level*1 current rating of up to 5 A for power supply applications.

Panasonic's new High Current 0.4-mm Pitch Connector has the following features:

1. The industry's highest-level current rating of up to 5 A for power supply applications contributes to compact-sizing of a variety of equipment.
   • Rated current: Max. 1.0 A/terminal (Max. 5 A with 5 terminals) (Max. 0.3 A/terminal of the Panasonic's conventional product*2)
   • Reduction of number of terminals for power supply - Reduction by 24 terminals*3 compared with the Panasonic's conventional product*2
2. Low contact resistance achieves high-quality analog signal transmission, thereby contributing to high functionality of equipment.
   • Contact resistance: 40 mΩ (90 mΩ of the Panasonic's conventional product*2)
3. Enhance the flexibility of designing power terminals.

Notes:

*1: Terminal pitch 0.4-mm, board-to-board connector, board-to-FPC connector without dedicated power terminals as of June 6, 2017 (Panasonic data)

*2: Panasonic's conventional product: board-to-board / board-to-FPC connector (P4S series)

*3: Comparison at the maximum current rating as a power supply application. Panasonic's conventional product (P4S series) 34 terminals (0.3 A/terminal), new product (P4SP series) 10 terminals (1 A/terminal)

Suitable applications:

Board-to-board connection in industrial and consumer equipment such as notebook PCs, POS terminals, hand-held terminals, drones, compact robots, and head-mount displays

Remarks:

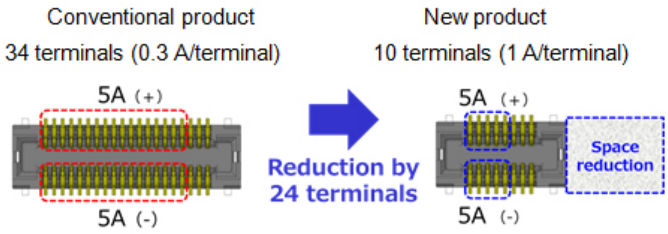
This product will be exhibited at the Japan Electronics Packaging and Circuits Association (JPCA) Show 2017 from June 7 to 9, 2017, held at Tokyo Big Sight.

Product features:

1. The industry's highest current rating of up to 5 A for power supply applications, contributing to compact-sizing of equipment.

Connectors are generally used for power supply and signal transmission in equipment. With the recent trend towards quick charging of a variety of equipment and higher functionality of modules, up to 5 A of current rating is required for power supply purposes. Because the rated current of the conventional product was 0.3 A per terminal, many terminals or multiple connectors were required for carrying high current, and this caused the problem of a great deal of space being needed for connectors on the circuit board. Panasonic's proprietary material processing technology has enabled current of 1.0 A per terminal, thereby commercializing a connector capable of carrying the industry's highest rating of 5 A with a fewer number of terminals. This reduces the required number of dedicated power supply terminals, saves board space, and contributes to compact-sizing of a variety of equipment types. The technology also enables the integration of power and signal terminals into a single connector, therefore reducing the number of connectors needed.

[Comparison with conventional product]



2. Low contact resistance achieves high-quality analog signal transmission, thereby contributing to high functionality of equipment.

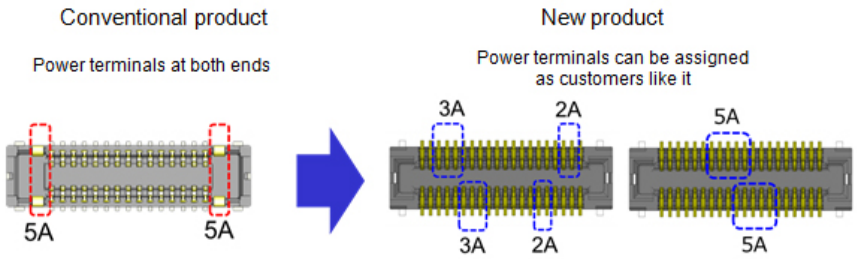
For successful high-quality analog signal transmission in a variety of information terminals and audio products, noise and signal attenuation need to be minimized. The effective way of doing this is to eliminate contact resistance in the signal transmission path. This product achieves a low contact resistance of Max. 40 mΩ by applying Panasonic's proprietary material processing technology. The resulting minimal signal attenuation during analog signal transmission enables high-quality signal transmission, thus contributing to equipment functionality.

3. Enhance the flexibility of designing power terminals.

Because the rated current of conventional connectors is 0.3 A per terminal, supplying high current required multiple terminals, thus restricting freedom of design. To enable high currents to be carried, dedicated power supply terminals were

provided, but they were located at both ends of the connector, generating the problem of restricted circuit design on the board. Panasonic developed the product with all terminals capable of carrying 1 A of current without the need to provide dedicated power supply terminals. This can reduce the number of terminals for supplying power, and power terminals can be laid out at any location. As a result, it makes circuit design easier and contributes to improve freedom of design.

[Comparison with conventional product]



Basic specification: High current connector - P4SP series

Item		Performance
Classification		High current connector for board-to-board connection and board-to-FPC connection
Number of terminals		10 - 100 terminals
External dimensions	Terminal pitch	0.4 mm
	Mated height	1.5 mm
	Width (when mated , short side)	3.6 mm
Electrical characteristics	Rated current	(for power) Max. 1.0 A/terminal, (for signal) Max. 0.5 A/terminal Total Max. 12 A for all terminals
	Rated voltage	AC DC 30 V
	Contact resistance	Max. 40 mΩ
Environmental characteristics	Ambient temperature	-55˚ to +85˚C

About Panasonic

Panasonic Corporation is a worldwide leader in the development of diverse electronics technologies and solutions for customers in the consumer electronics, housing, automotive, and B2B businesses. Celebrating its 100th anniversary in 2018, the company has expanded globally and now operates 495 subsidiaries and 91 associated companies worldwide, recording consolidated net sales of 7.343 trillion yen for the year ended March 31, 2017. Committed to pursuing new value through innovation across divisional lines, the company uses its technologies to create a better life and a better world for its customers. To learn more about Panasonic: http://www.panasonic.com/global

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