

0.25mm Staggered Pitch Board-to-board (FPC) Connector

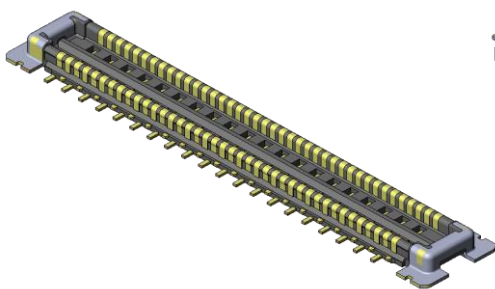
CONNECTOR

MB-0394-2

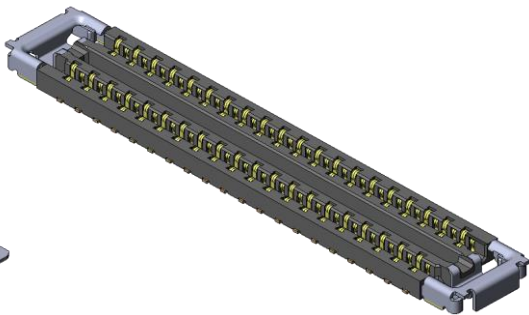
Feb.2024

WP86SD Series

RoHS Compliant



Plug



Receptacle

Small devices such as smartphones and wearable devices are increasingly requiring higher density components to maximize available space. In addition, with the spread of USB Type-C, there is an increasing need to support higher currents required for fast charging. This board-to-board (FPC) connector meets these requirements with 0.25mm contact pitch, 0.5mm soldering pitch, staggered 4 Row contact arrangement and 8A power terminals (hold-down). Signal routing is possible with low-cost 2 layer FPC's as with conventional 2 row products. The power supply terminal (hold-down) is compatible with 8A, which is significantly higher than the 3A power supply terminal used in conventional board-to-board connectors. In addition, the mating surfaces are equipped with protective metal fittings to enhance robustness.

Applicable Equipment

Smartphones, smart glasses, tablet and laptop PCs, gaming terminals, digital cameras, AR/VR headsets, other portable devices

Features

- 0.25mm contact pitch / 0.5mm soldering pitch 4 Row array for both miniaturization and soldering performance
- 4 Row connector that is compatible with low cost 2 layer FPCs
- Two power supply hold down terminals capable of 8A power supply
- Low profile design with mating height of 0.6mm
- High robustness with full armor structure to protect mating surfaces and prevent damage to insulator
- Good workability with click feeling when mated
- 2 point contact structure for reliable connection
- Supported transmission standards: MIPI, USB4.0, PCIe Gen4

General Specifications

Number of Contacts	80 positions (+2 power)
Pitch	Contact Area: 0.25mm, 2 rows Soldering Area: 0.5mm, 4 rows
Contact Resistance	Signal Terminal: 50mΩ max. (initial) Power Supply Terminal: 20mΩ max. (initial)
Dielectric Withstanding Voltage	AC250Vr.m.s for 1 minute
Insulation Resistance	100MΩ min. (initial)
Durability	30 mating cycles
Operating Temperature Range	-40°C to +85°C
Rated Current	Signal Terminal: 0.3A per pos. Power Terminal: 8.0A per pos.
Rated Voltage	AC, DC 50 V
Total Insertion Force	66N max.
Total Extraction Force	6N min.

Materials and Finishes

Components	Materials	Finishes
Contact	Copper alloy	Au/Ni plating (Contact area) Au/Ni plating (Mounting area)
Insulator	Heat-resistant plastic	
Hold-down	Copper alloy	Au/Ni plating (Contact area) Au/Ni plating (Mounting area)

Ordering Information (Plug)

WP86SD - P * V A * - R*******

Series: WP86SD

Contact Shape
P: Plug

Number of Contacts:
in three digits (***)

Reeled Part Number (Note 1)
(R20000)

Modification Code

Finish A: Au plating

Connection Type V: Stacking

Ordering Information (Receptacle)

WP86SD - S * V A * - R*******

Series: WP86SD

Contact Shape
S: Receptacle

Number of Contacts:
in three digits (***)

Reeled Part Number (Note 1)
(R20000)

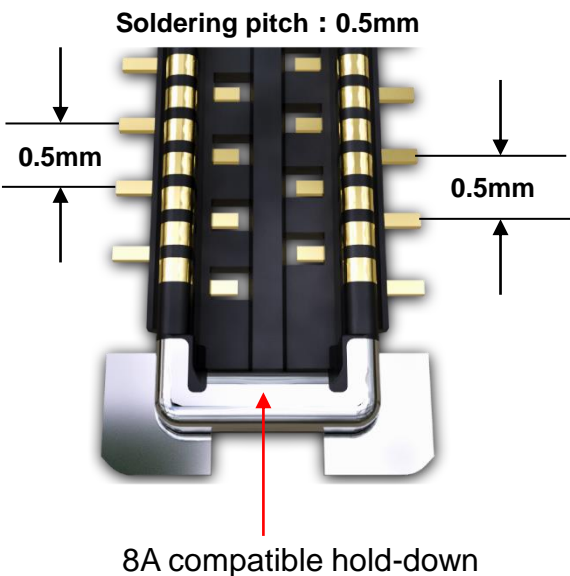
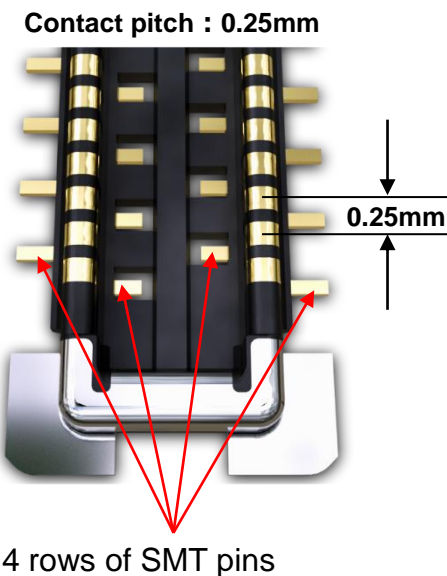
Modification Code

Finish A: Au plating

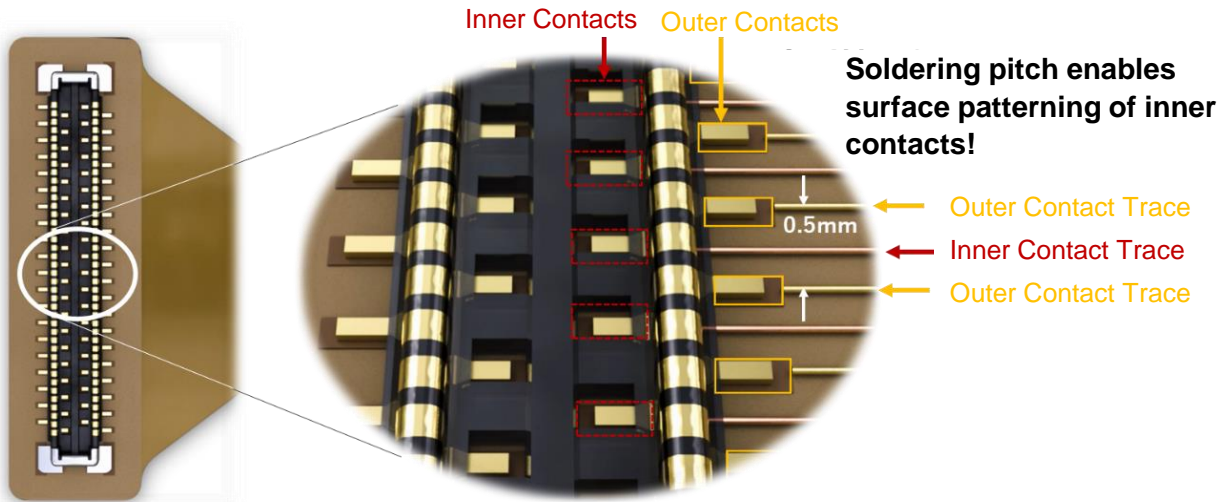
Connection Type V: Stacking

Note 1) An embossed tape reel contains 20,000 pieces.
Please contact us for details on embossed tape specifications.

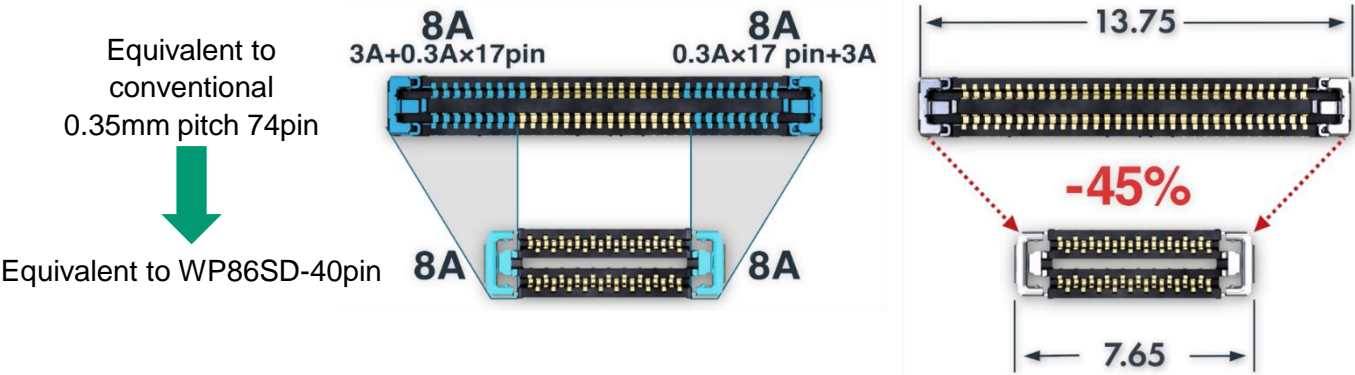
WP86SD Part Details



WP86SD FPC Wiring



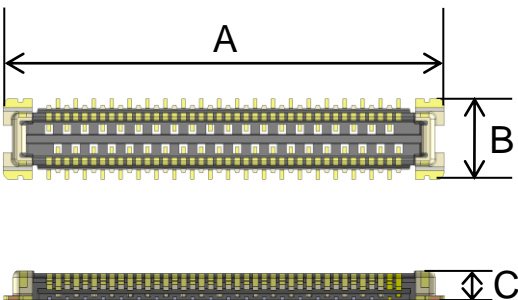
WP86SD 8A Power Supply Terminal (hold-down)



※ WP86SD-40pin is under consideration for development

In order to support 8A of power with conventional products, 17 signal pins and a 3A hold down must be used as power supply terminals. WP86SD can handle 8A with a single power supply terminal (hold down), so the number of pins is 40, achieving a 45% reduction in connector length compared to conventional products for a 40 signal and 8A power configuration.

Outer Dimensions (Plug)

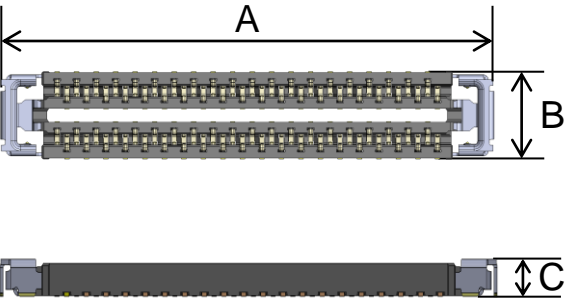


Unit : mm

Dimensions Number of Contacts	A	B	C
80	12.3	2.2	0.53

Outer Dimensions (Receptacle)

Unit : mm



Dimensions Number of Contacts	A	B	C
80	12.65	2.2	0.495

Product Drawings and Specifications

Part Number	Drawing Number	Specifications	Handling Instructions
WP86SD-P***VA*-R20000 (Plug side)	SJ130143 (Individual Product)	JACS-11415	JAHL-11415
	SJ130144 (Reeled Product)		
WP86SD-S***VA*-R20000 (Receptacle side)	SJ130145 (Individual Product)		
	SJ130146 (Reeled Product)		

Notice:

1. The values specified in this brochure are only for reference. The products and their specifications are subject to change without notice. Contact our sales staff for further information before considering or ordering any of our products.
For purchase, a product specification must be agreed upon.
2. Users are requested to provide protection circuits and redundancy circuits to ensure safety of the equipment, and sufficiently review the suitability of JAE's products to the equipment.
3. The products presented in this brochure are designed for the uses recommended below.
We strongly suggest you contact our sales staff when considering use of any of the products in any other way than the recommended applications or for a specific use that requires an extremely high reliability.
(1) Applications that require consultation:
(i) Please contact us if you are considering use involving a quality assurance program that you specify or that is peculiar to the industry, such as:
Automotive electrical components, train control, telecommunications devices (mainline), traffic light control, electric power, combustion control, fire prevention or security systems, disaster prevention equipment, etc.
(ii) We may separately give you our support with a quality assurance program that you specify, when you think of a use such as :
Aviation or space equipment, submarine repeaters, nuclear power control systems, medical equipment for life support, etc.
(2) Recommended applications include:
Computers, office appliances, telecommunications devices (terminals, mobile units), measuring equipment, audiovisual equipment, home electric appliances, factory automation equipment, etc.

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