

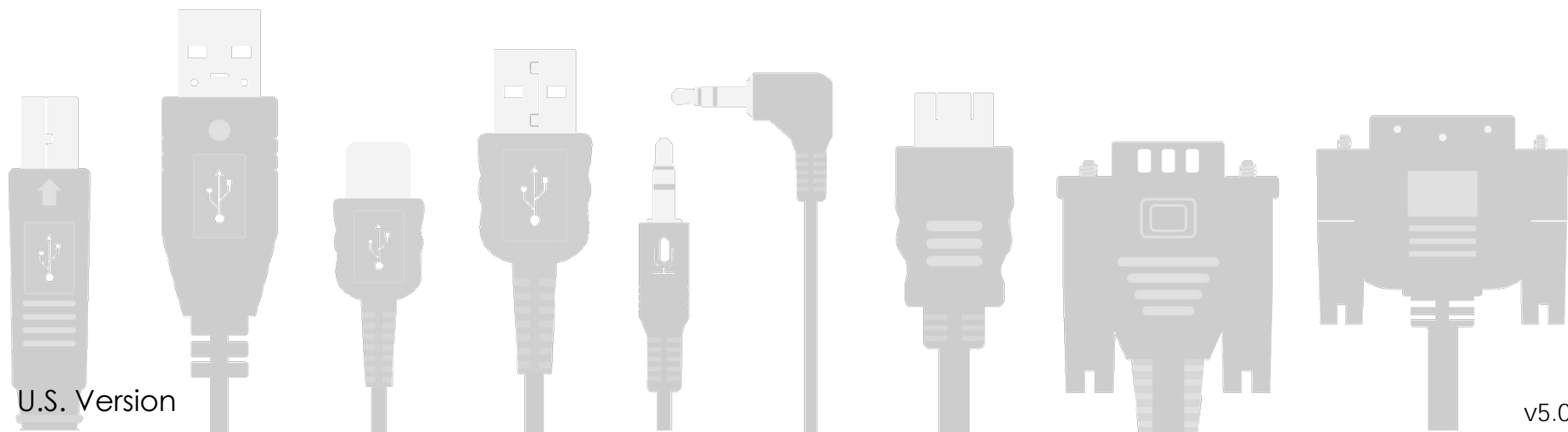
# Technology to Inspire Innovation



**JAE**

## Connector Selection eGuide

2016 - 2017



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View all JAE connectors at [www.JAE.com](http://www.JAE.com)

Contact [marketing@jae.com](mailto:marketing@jae.com) to request the hard copy version of this connector guide.



## About JAE

In 1953, Japan Aviation Electronics Industry, Ltd. began with the ambition of becoming a leading manufacturer in the aviation and space industries in Japan. Since then, we were able to expand and also specialize in designing and manufacturing connectors and gyroscopes.

Always keeping our corporate philosophy **“Explore, Create, and Practice”** in mind, we were able to successfully establish 3 strong product lines:

- Connectors
- User Interface Solutions
- Aerospace




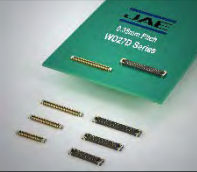
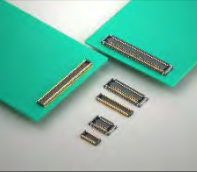
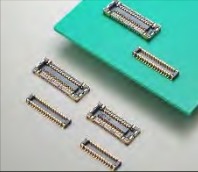



JAE strives to be the number one partner for global customers by staying innovative and creative in an industry where technology is continuously evolving and advancing.

**JAE Electronics, Inc.**, a subsidiary of parent company JAE, designs, manufactures and markets electronic components, fiber optic connectors, LCD monitor connectors, waterproof electrical connectors, connectors for commercial energy storage systems, and other digital systems. A global company, JAE is a recognized leader in providing solutions to complex design requirements. By combining divergent technologies from experience gained in the aerospace industry, JAE has been able to transfer these technologies into advanced connector designs. From connectors on Japan's Bullet Train, to the smallest hand-held video camera, JAE continues to meet the most demanding applications in the industry.

# Technology to Inspire Innovation



# Board-to-Board Connectors (1/2)

Series	WP21	WP25D	WP26	WP27D	WP3	WP6/C	WP7	WP9	WP10
Photo									
Pitch	0.35mm	0.35mm	0.35mm	0.35mm	0.4mm	0.4mm	0.4mm	0.4mm	0.4mm
Stacking Heights	0.6mm	0.7mm	0.6mm	0.7mm	1.0mm	0.8mm	0.7mm	0.8mm	0.7mm
Pin Count (Parallel)	10,20,22,24,30,34,40,42,46,54	10,28,38 (+2 power pins)	10,24,34,40,42,54,60	30,38,50 (+2 power pins)	16,20,22,24,30,42,50,70	10,12,16,20,24,30,50	10,16,20,24,26,28,30,32,34,40,50,60,70	10,14,20,24,30,32,40,60	2,4 (+4 power pins)
Pin Count (Right Angle)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Board Mount	SMT	SMT	SMT	SMT	SMT	SMT	SMT	SMT	SMT
Current Rating	0.3A	0.3A Signal 3A Power	0.3A	0.3A Signal 3A Power	0.4A	0.3A	0.3A	0.3A	0.4A Signal 5A Power
Voltage Rating	50VAC 50VDC	50VAC 50VDC	50VAC 50VDC	50VAC 50VDC	50VAC 50VDC	50VAC 50VDC	50VAC 50VDC	50VAC 50VDC	50VAC 50VDC
Durability	30 cycles	30 cycles	30 cycles	30 cycles	50 cycles	30 cycles	30 cycles	50 cycles	30 cycles
Features	Smallest footprint and lowest height	Hybrid connector w/ signal pins +2 high power contacts.	Small size and metal reinforcement in mating area to reduce risk of damage to insulator	Hybrid connector with high power contacts as well as metal reinforcement in mating area.	High retention force.	Shielded variation available for 24 & 30 pos. w/ common footprint.	High retention force for low pin counts and low insertion force for high pin counts.	Small connector width helps reduce board mounting space.	High power connector ideal for connecting batteries.

Socket side: **WP10-S###VA10-R15000**  
 Pin side: **WP10-P###VA10-R15000**

Orderable in Reels of 15000

Socket side: **WP21-S###VA1-R8000**  
 Pin side: **WP21-P###VA1-R8000**

Orderable in Reels of 8000

Socket side: **WP25D-S###VA1-R8000**  
 Pin side: **WP25D-P###VA1-R8000**

Orderable in Reels of 8000

Socket side: **WP3 - S###VA1 - R6000**  
 Pin side: **WP3 - P###VA1 - R6000**

Orderable in Reels of 6000

Socket side: **WP6 - S###VA2 - R6000**  
 Pin side: **WP6 - P###VA2 - R6000**

*\*Shielded version*

Socket side: **WP6C - S###VA1 - R6000**  
 Pin side: **WP6C - P###VA1 - R6000**

Orderable in Reels of 6000

For pin counts up to 32:

Socket side: **WP7A - S###VA1 - R6000**  
 Pin side: **WP7 - P###VA1 - R6000**

For pin counts above 32:

Socket side: **WP7B - S###VA1 - R6000**  
 Pin side: **WP7B - P###VA1 - R6000**

Orderable in Reels of 6000

Socket side: **WP9 - S###VA1 - R6000**  
 Pin side: **WP9 - P###VA1 - R6000**

Orderable in Reels of 6000

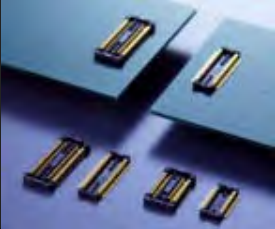

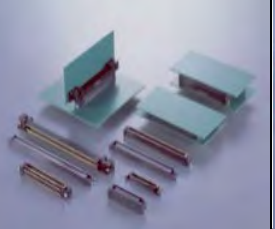

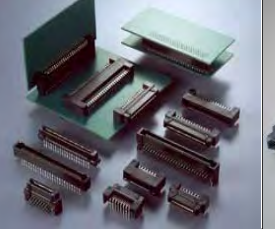

Socket side: **WP26 - S###VA1 - R15000**  
 Pin side: **WP26 - P###VA1 - R15000**

Orderable in Reels of 15,000

Socket side: **WP27D - S###VA1 - R15000**  
 Pin side: **WP27D - P###VA1 - R15000**

Orderable in Reels of 15,000

# Board-to-Board Connectors (2/2)

Series	WH1	WR	KX14/15	KX24/25	TX24/25	TX24A/25A
Photo						
Pitch	0.4mm	0.5mm	0.8mm	0.8mm	1.27mm	1.27mm
Stacking Heights	1.0mm	4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 8.0, 9.0mm	5.0, 6.0, 8.0, 9.0, 11.0, 12.0mm	N/A	12.0-24.0mm (±2.0mm)	9mm
Pin Count (Parallel)	24,30,40,50,60	20,30,40,50, 60,70,80,100,120,160	20,30,40,50,60,70,80	80,100,120, 140,180 (coplanar)	30,40,50, 60,80,100, 120	N/A
Pin Count (Right Angle)	N/A	30,40,50,60, 70,80,120	20,30,40,50, 60,70,80	80,100,120,140,180	30,40,44,50,60,80,100, 120	80
Board Mount	SMT	SMT	SMT	Thru-hole	Thru-hole	Thru-hole
Current Rating	0.4A	0.3A	0.5A	0.5A	1.0A	1.0A
Voltage Rating	250VAC	200VAC 300VDC	200VAC 300VDC	200VAC	250VAC	250VAC
Durability	50 cycles	500 cycles	500 cycles	500 cycles	500 cycles	500 cycles
Features	Drop impact and shock resistant.	9 different vertical stack heights.	Mating guide and key to prevent mis-mating.	Robust mating guide. Click response when mated.	Ribbon type contacts ensure reliable electrical continuity.	Ribbon type contacts ensure reliable electrical continuity. Improved electrical characteristics from TX24/25 Series, supporting higher-speed transmission.

Socket side: **WH1S###WA1-E6000**  
 Pin side: **WH1P###WA1-E6000**

*\*Not pictured. Please visit [www.jae.com](http://www.jae.com) for more info.*

Orderable in Reels of 6000

Socket side: **WR - ###S - VF - N1**

B: Positioning Boss ———— H05: +0.5mm  
 ———— H30: +3.0mm

Vert Pin side: **WR - ###P - VF - N1**

B: Positioning Boss ———— 50: +1.0mm  
 ———— 60: +2.0mm

R/A Pin side: **WR - ###P - HF - HD - A1E**

Receptacle: **KX14 - ##K 2 DE**

Stack Height:  
 2, 5, 8mm

Straight Plug: **KX15 - ##K 3 DE**

Stack Height:  
 2, 3, 4mm

R/A Plug: **KX15 - ##K L DE**

Right angle

Receptacle: **TX24 - ###R - LT - H1E**  
 Plug: **TX25 - ###P - LT - H1E**

Stacking Height: ————  
 Receptacle:  
 6, 10, 12mm  
 Plug:  
 6, 8, 12mm  
 \*Right-angle leave blank

H: Hook pin  
 N: No hook pin  
 LT: Right angle  
 ST: Straight




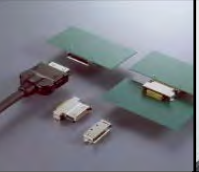




Receptacle: **KX24 - ###R - LT - H1**

Plug: **KX25 - ###P - LT - H1**

LT: Right-angle ———— H: Hook pin  
 6ST: Straight

Receptacle: **TX24A - 80R - LT - H1E**  
 Plug: **TX25A - 80P - LT - H1E**

# Commercial I/O Connectors

Series	DC2	DC3	DD4	DD1	DD2	DX07	DP3	DX4	DC1
Photo									
Pitch	0.4mm	0.4mm	0.4mm	0.5mm	0.5mm	0.5mm	0.6mm	0.65mm	1.0mm
Stacking Heights	Cable I/O	Cable I/O	Cable I/O R/A Dock Vert Dock	Cable I/O R/A Dock 75° Vert Dock	Cable I/O R/A Dock Vert Dock	Cable I/O	Cable I/O	Cable I/O	Cable I/O
Pin Count (Parallel)	19	19	40	30	40	24	20	5	19
Signal Standard	HDMI	HDMI	USB 3.0 DisplayPort™ SATA	USB 2.0	USB 2.0	USB Type-C™ USB 3.1	Thunderbolt™	USB 2.0	HDMI
Current Rating	0.5A	0.3A	Signal: 0.1A Power: 1.1A	Signal: 0.5A Power: 1.0A	Signal: 0.5A Power: 1.0A	Vbus / GND: 5A Vconn: 1.25A Signal: 0.25A	Signal: 0.5A	Signal: 0.5A Power: 1.8A	0.5A
Voltage Rating	40VAC	40VAC	30VAC	30VAC	30VAC	20VAC	300VAC	30VAC	40VAC
Durability	5,000 cycles	5,000 cycles	5,000 cycles	10,000 cycles	10,000 cycles	10,000 cycles	10,000 cycles	10,000 cycles	10,000 cycles
Operating Temp	-20 ~ +85°C	-20 ~ +85°C	-25 ~ +75°C	-25 ~ +75°C	-25 ~ +75°C	-30 ~ +80°C	-20 ~ +85°C	-30 ~ +80°C	-20 ~ +85°C
Locking	Friction	Friction	Friction	Latch	Latch	Friction	Friction	Friction	Friction
Features	Mini HDMI Type-C compatible. Requires HDMI adopter status.	Micro HDMI Type-D compatible. Requires HDMI adopter status.	Space-saving low height, fine pitch docking connector.	Docking connector to combine various high speed signals in a single connector.	Robust and compact design. Compatible with high speed signaling.	Reversible plug for easier insertion. Multiple receptacle mounting options available.	Thunderbolt™ compatible. Various board mounting options available.	Micro USB 2.0 standard compatible. Various mounting options available.	HDMI Type A compatible. Requires HDMI adopter status.



Receptacle: **DC1RS19JA7**

Cable Harness: **DC1P019ST30200B**

Restricted to HDMI Adapters  
Contact JAE for additional options

Receptacle: **DD1R030HA1** Standard mount  
**DD1R030JA7** Reverse mount

Docking Plug: **DD1B030VA1** Vertical  
**DD1B030HA1** Right angle

Cable Plug: **DD1P030MA1**

Receptacle: **DP3R020S U32JQ 1 R400**

Board Mount Type  
S: Standard  
R: Reverse

Height modification code  
U32: 3.2mm up  
L05: 0.5mm down

T/H lead length  
Blank: 1.4mm  
1: 2.1mm

Receptacle: **DC2R019JA4**

Hold Down Type  
J: T/H, H: SMT

Modification code

Cable Harness: **DC1DC2ST2150B**

Restricted to HDMI Adapters  
Contact JAE for additional options

Receptacle: **DD2R040HP2**

Docking Plug: **DD2B040VP4** Vertical  
**DD2B040HA2** Right angle

Cable Plug: **DD2P040MA1**

Receptacle: **DD4RA040JA1**

Docking Plug: **DD4PA040WA1** Vertical  
**DD4PA040MA1** Right angle

Cradle: **DD4BA040WA1**  
**DD4BA040MA1**

Receptacle: **DC3RX19JA2**  
Top Mount

Modification Code

Hold Down Type  
X, J: T/H  
0, H: SMT

Receptacle: **DC3R019JA1**  
Mid Mount

Modification Code

Restricted to HDMI Adapters  
Contact JAE for additional options

Receptacle: **DX07B024JJ1R1500**

Board Mount Type  
B: Mid-mount  
S: On-board

Reel Amount  
1300 (On-board)  
1500 (Mid-mount)

Modification Code

Plug: **DX07P024MJ1** (standard plug)  
**DX07P024AJ1** (slim plug)

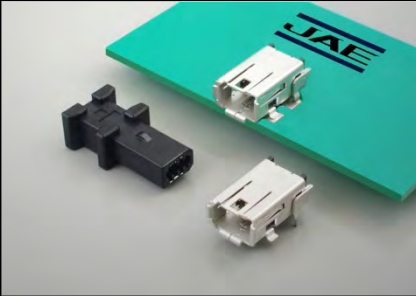


Receptacle: **DX4R005 J J 2**

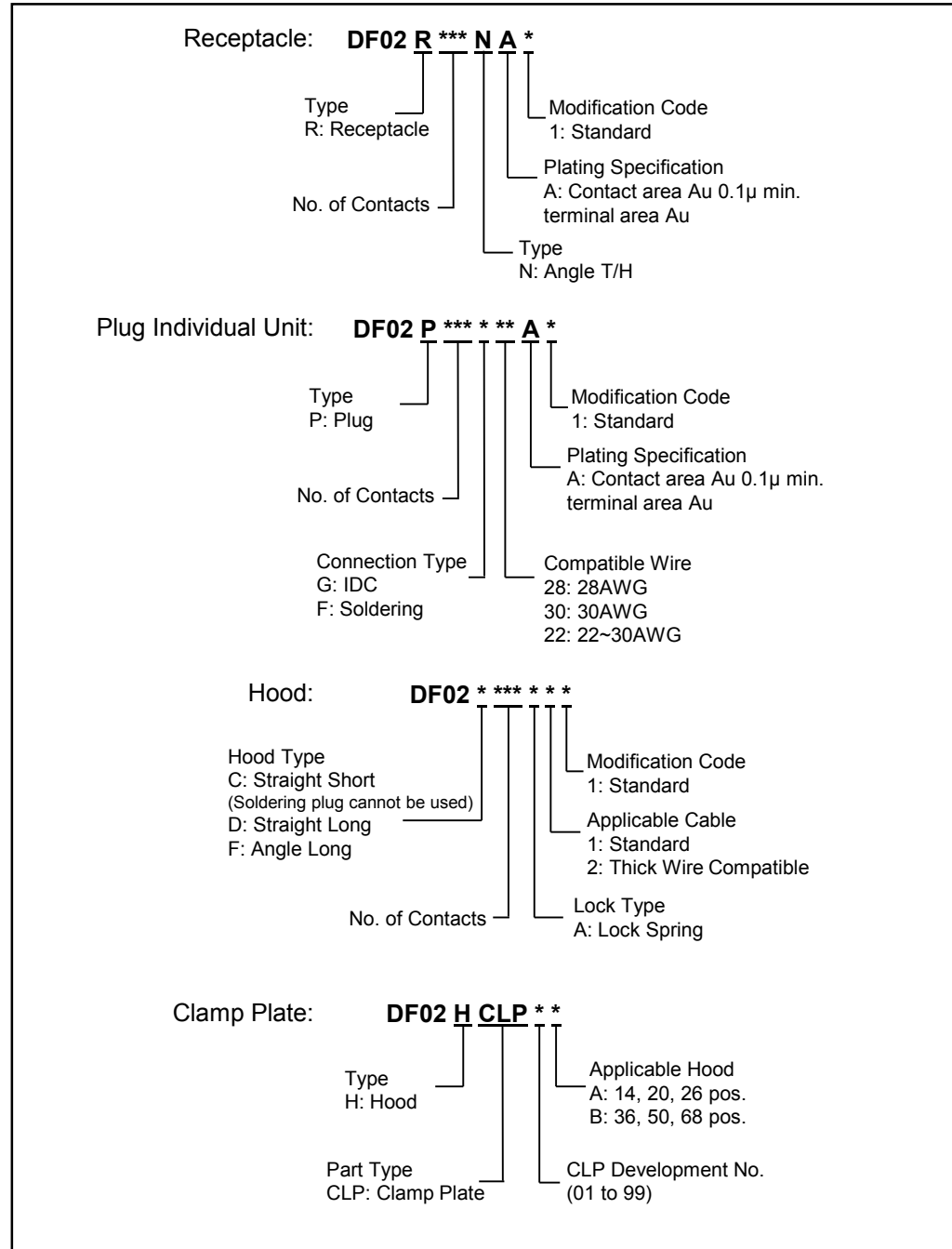
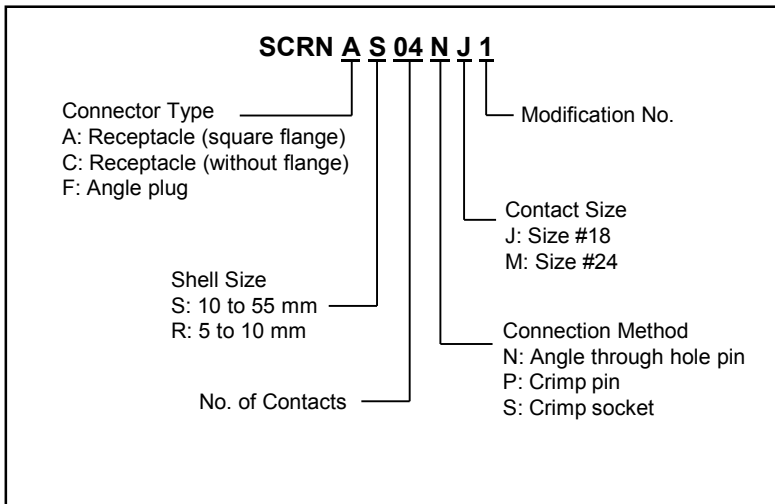
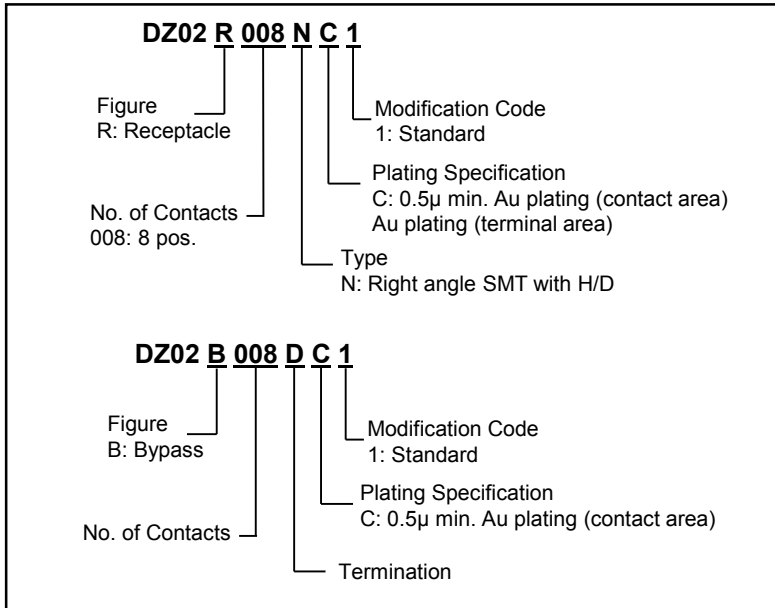
Modification Code

Hold Down Type  
J: T/H  
H: SMT

Modification Code

# Industrial I/O Connectors [Rectangular]

Series	DZ02	DF02	JN6
Photo			
Pitch	0.635mm	1.27mm	3mm
I/O	Cable I/O	Cable I/O	Cable I/O
Pin Count	8	14, 20, 26, 36, 50 68 (plug only)	2, 4, 7
Current Rating	0.5A	0.5A	(2pos.): 1A max. (per pos.) (4pos.): 7A max. (per pos.) (7pos.): 1A max. (per pos.)
Voltage Rating	30VAC	250VAC	(2pos.): 100VAC (4pos.): 200VAC (7pos.): 100VAC
Durability	1,500 cycles	500 cycles	100 cycles
Operating Temp	-40 ~ +85 °C	-20 ~ +80 °C	-40 ~ +125 °C
Locking	Friction	One-touch, screw	Screw
Features	Vibration-resistant strong lock, ideal for harsh conditions. Compact I/O compatible with IEC/EN 61800-5-2	Half-pitch (1.27mm) interface compatible. Ni-plated plastic hood for lighter weight with EMI shielding.	Plastic, waterproof connector ideal for small servo motors. Mating secured by screws. 4pin receptacle is mold-in; 2pin/7pin receptacles are press-fit.



# Industrial I/O Connectors [Circular]

Series	JB5	JB1	JN1 / JN2	JN1W / JN2W	SRCN	JB10	JL02	JL04V	JL05	JL10	JK06	N/MS
Photo												
Plug Max Diameter	Φ11.0mm	Φ18.0mm	Φ19.0mm	Φ26.2mm	Φ21.2-33.2mm	Φ34.0mm	Φ34.1-62.7mm	Φ22-56.3mm	Φ35.9-51.7mm	Φ35.9-58.6mm	Φ36.5-66.3	Φ22.2-81.8mm
Pin Count	3,4,5,6,8	3,5,10	4,10	5,15	3,5,7,10,16,24	26	10,17,19,24,37,48,54	3,4,6,7,8,9,18,22	4,5,7,8,9,10,17,19,24,30,36,37,52,73	3,4,9,17,19	10,37,48	1~11,14,16,17,19,22,24,26,35,37,48,54,100
Shell Material	Metal	Metal	JN1: Plastic JN2: Metal and Plastic	JN1W: Plastic JN2W: Metal and Plastic	Metal	Plastic	Metal	Metal	Metal	Metal	Metal	Metal
Mated Condition	IP68	IP67	IP67	IP67	N/A	IP67 (mated)	N/A	IP67	IP67	IP67	IP67	N/A
Current Rating	2 ~ 3A	3A	3 ~ 5A	3 ~ 13A	5 ~ 10A	1A / pin	1.5 ~ 13A	13 ~ 80A	2 ~ 46A	19 ~ 80A	13 ~ 124.8A	13 ~ 150A
Voltage Rating	200VAC ~ 320VAC	300VAC	200VAC	200VAC ~ 400VAC	250VAC ~ 350VAC	100VAC	200VAC ~ 500VAC	100VAC ~ 500VAC	200VAC ~ 900VAC	100VAC ~ 500VAC	220VAC	200VAC ~ 3,000VAC
Durability	5,000 cycles	500 cycles	500 cycles	500 cycles	500 cycles	5,000 cycles	500 cycles	500 cycles	500 cycles	500 cycles	500 cycles	500 cycles
Lock	Push-pull	Threaded	Push on, twist off	Push on, twist off	Threaded	One-touch (push-and-twist)	Threaded	Threaded	Bayonet	Bayonet and Threaded	Bayonet	Threaded
Operating Temp	-55 ~ +85 °C	-30 ~ +85 °C	-20 ~ +125 °C	-20 ~ +125 °C	-25 ~ +85 °C	-20 ~ +125 °C	-55 ~ +85 °C	-55 ~ +125 °C	-55 ~ +125 °C	-55 ~ +125 °C	-55 ~ +85 °C	-55 ~ +125 °C
Wire Size	AWG #22-28	AWG #22-28	AWG #20-28	AWG #14-28	AWG #16-20	AWG #22-28	AWG #14-28	AWG #4-18	AWG #8-26	AWG #0-22	AWG #14-16	AWG #0-16
Termination	Solder	Crimp	Crimp / Solder	Crimp / Solder	Solder	Crimp	Crimp	Solder	Crimp / Solder	Solder	Crimp	Solder
Features	Small size. Unmated waterproof	Mated Waterproof	One-touch locking mechanism. JN2 shell is 3x stronger.	One-touch locking mechanism	UL approved. 5 insert guide keys	Internal EMI shielding. One-touch, push-and-twist for easy locking and unmating.	Compatible with MIL-DTL-5015 standard	TUV and UL approved. Compatible w/ MIL-DTL-5015.	JIS B 9960-1 compatible	TUV and UL approved. Compatible w/ MIL-DTL-5015	Panel-to-cable connector, VG95234 design	UL approved. Compatible with MIL-DTL-5015 standard.

**JB1 \* B - \*\* \* L \***

H - Straight recp.  
C - Jam nut recp.  
D - Straight plug

Contacts - 3,5,10

P - Pin  
S - Socket

Modification Code

**JB5 \* S \*\* \* \* \* N**

C - Jam nut recp.  
D - Straight plug  
H - Straight recp.

Contacts - 3,4,5,6,8

A - Thru-hole  
F - Solder cup socket  
M - Solder cup pin

0 - No boot  
1 - With boot

Contacts Size  
L - # 22  
M - # 24  
N - # 26

Modification Code

**N/MS 310\* \* \*\* - \* \***

0 - Straight recp.  
2 - Panel mount recp.  
6 - Straight plug  
8 - R/A plug

A - Integrated Shell  
B - Separate Shell

Shell Size

Contact arrangement

Alternate insert position

P - Pin Contact  
S - Socket Contact

**JB10 \* X 26 \* N \***

C - Jam nut type recp.  
D - Straight plug

Shell size

26: 26 contacts

Modification Code<sup>(Note)</sup>  
1: Front Mount<sup>(Receptacle)</sup>  
2: Rear Mount<sup>(Receptacle)</sup>

N: Normal

P - Crimping pin  
S - Crimping Socket

**JL05 \*\* - 24 - 10 PC \* \*\* - R**

6A - Straight plug  
2A - Panel mount recp.  
2L - Waterproof unmated recp.

Shell Size

Contact Arrangement

Blank: with contacts  
F0: without contacts

Alternate insert position

P - Solder pin, S - Solder socket  
PC - Crimp pin, SC - Crimp socket

**JN1/2 \* S \*\* \* \* \***

H - Straight recp.  
A - Panel mount recp.  
D - Straight plug  
F - R/A plug

Shell size

Contacts - 04, 10

Modification Code  
K - #20 Contact  
L - #22 Contact

M: Solder pin  
F: Solder socket  
P: Crimp pin  
S: Crimp socket  
U: Thru-hole pin

Crimp contacts sold separately

**JN1/2 \* W \*\* \* \* \***

H - Straight Recp.  
K - Straight recp. w/ flange  
A - Panel mount recp.  
D - Straight plug  
F - R/A plug

Shell size

Contacts - 05, 15

Modification code  
H - #16 Contact  
L - #22 Contact

M - Solder pin  
F - Solder socket  
P - Crimp pin  
S - Crimp socket

Crimp contacts sold separately

**SCRN \* A \*\* - \*\* \*\***

1 - Cable recp,  
2 - Panel recp.  
6 - Plug straight

Shell size

Contacts  
3, 5, 7, 10, 16, 24

P - Pin  
S - Socket

**JL02 - \*\* \*\* - \*\* \* \* - F0 - R**

1B - Straight recp.  
2A - Panel mount recp.  
6B - Straight plug  
8B - Right angle plug

Shell size

Contact arrangement

Crimp contacts  
P - Pin  
S - Socket

**JL04V- \* A - \*\* - \* \* E - B - \*\* - R**

2 - Recp.  
6 - Plug  
8 - Plug, R/A

E - Waterproof  
A - Waterproof only when mated

Shell Size

E - Earth contact

P - Pin  
S - Socket

EB - w/ end bell

Contact arrangement

**JK06 \* \* \*\* \* \* \***

Type  
A - Panel mount recp.  
K - In-line recp.  
D - Straight plug (with Endbell)

Shell Size  
F - Size 18  
K - Size 28  
M - Size 36

Modification Code  
Angle of Insertion  
N, W, X, Y, Z

P - Pin  
S - Socket

No. of Contacts  
10, 37, 48

**JL10- \* E \*\* - \*\* P E - \*\***

2 - Recp.  
6 - Straight plug  
8 - Angle plug

E - Waterproof  
A - Waterproof only when mated


Shell size

Contact arrangement

EB - w/ end bell  
E - Earth contact

P - Pin  
S - Socket

# Board-to-FPC Connectors

Series	FF08	FR02	FB10	FA10	FF03	FA5B	FA5S	FM8
Photo								
Pitch	0.2mm	0.2mm	0.3mm	0.5mm	0.5mm	0.5mm	0.5mm	0.5mm
Mounted Height	0.9mm	0.82mm	0.9mm	0.9mm	2mm	1.0mm	1.45mm	2.2mm
FPC/FFC Thickness	0.15 ± 0.03mm	0.2 ± 0.03mm	0.2 ± 0.03mm	0.2 ± 0.03mm	0.3 ± 0.05mm	0.3 ± 0.05mm	0.3 ± 0.05mm	0.3mm ± 0.03mm
FPC Contact Orientation	Lower	Upper & Lower	Lower	Upper & Lower	Lower	Lower	Lower	Lower
Pin Count	25,29,41,51,71,81	23,41,51,61	11,13,15,19,21,27,31,33,35,39,41,45,51,61	4,5,6,10	60,64,68,80,96	6,8,10,16,20,30,36,40,45,50	6,8,10,15,16,18,20,22,24,26,30,36,40,45,50	41,51,60
Current Rating	0.3A	0.25A	0.35A	0.5A	0.5A	0.8A	0.8A	0.5A
Voltage Rating	50V	50V	50V	50V	50V	50V	50V	50V
Features	Smallest pitch. Rotating actuator.	Lowest profile in class. Robust rear actuator.	Smallest PCB footprint. Easy actuator operation with tactile lock feedback.	Quick one-step insertion & removal. Requires no actuator operation.	Highest pin count.	Mid mount type for low profile applications.	Easy slider operation.	Compatible with high speed signal transmission. Guides hold the FFC in place to prevent misalignment.

Loose pcs: **FA5B0##HP1**

Reel: **FA5B0##HP1\_R3000**

1: t0.3mm FPC/FFC  
3: t0.14mm FPC/FFC

Loose pcs: **FF03##SA1**

Reel: **FF03##SA1 - R2000**

Loose pcs: **FA5S0##HP1**

Reel: **FA5S0##HP1R3000**

Reel: **FB10S###JA2R6000**

Loose pcs: **FR02C0##JA1**

Reel: **FR02C0##JA1-R5000**

Reel: **FF08##SA1-R3000**

Loose pcs: **FA10##SA1**

Reel: **FA10##SA1-R8000**

Reel: **FM8S###HA2R4000**

# Board-to-Cable Connectors

Series	FI-JZ	FI-JW	HJ1	HD*	FI-R	FI-X	FI	
Photo							Single Row	Dual Row
Pitch	0.25mm	0.3mm	0.4mm	0.5mm	0.5mm	1.0mm	1.25mm	1.25mm
Discrete Wire AWG	N/A	N/A	#34,36	#32,34,36	#30,32,36	#30,32,36	#28,30,32	#28,30,32
Coax Wire AWG	#44,46 (OD≤0.25)	#42,44	#36,38,40,42,44	#36,38,40,42,44	#40	#32,40	N/A	N/A
FPC/FFC	N/A	N/A	N/A	N/A	N/A	0.14±0.03mm	0.14±0.03mm	N/A
Pin Count	50	30, 34,40, 50	50	40	21,31,41,51	30	2-6,8,10,15, 20, 25,30	5,7,9,11,13,15,17, 19,21, 31,41
Mated Height	0.9mm	1.65mm	0.9mm	1.0mm	3.8mm	1.0-2.35mm	1.8mm	3.7mm
Locking	Friction	Friction	Friction/Pull Bar	Friction/Pull Bar	Latches	Latches	Latches	Latches
Durability	20 cycles	30 cycles	30 cycles	30 cycles	50 cycles	50 cycles	50 cycles	50 cycles
Current Rating	0.2A	0.25A	0.1A to 1.0A	0.1A to 1.0A	0.8A	1.0A	1.0A	1.0A
Voltage Rating	50V	50V	100V	100V	200V	200V	200V	200V
Features	Smallest size. Ideal for routing through small openings such as hinges.	Vertical mating. Small footprint.	Ground reinforced design. Lowest profile.	Compatible with VESA standard for LED backlit panels. <small>LICENSED BY DAI-ICHI SEIKO CO., LTD. (I-PEX)</small>	VESA standard for LCD interface of HD TV. Vertical mount available.	VESA standard for 1.0mm pitch LVDS interface.	Single row for low profile.	Dual row for smaller footprint.

\*Specs shown for HD1 only



Receptacle: **FI - JP##S - VF10 - R3000**

Cable Plug: **FI - JP##C - R3000**

Plug Shell: **FI - JP##C - SH1 - 9000**

Only orderable in reels

Receptacle: **HJ1S050HA1R6000\***





Cable Plug: **HJ1P050MA1R6000\***



Cover Shell: **HJ1P050-CSH1-10000\***

Pull Bar: **HJ1P050-PB1**



\*Orderable in reels

Receptacle: **FI - X\_30S** **L** **- HF**

B: Mid mount     Modification Code

S: Stronger shell  R: Reverse 

Cable Plug: **FI - X30H**

H: Discrete wire crimp  L: Locking latches 

C, C2, C2E: Coax wire  
MA1, FR: FPC/FFC

Crimp Contacts: **FI-XC3A-1-15000**

Hand Crimp Tool: **CT150-4C-FIX**

Semi-Auto: **3502-FI-2B**

Receptacle: **FI - JW##S - VF16**  
Orderable in reels

Cable Plug: **FI - JW##C - R3000**  
Only orderable in reels

Plug Shell: **FI - JW##C - SH 1 - 9000**  
Only orderable in reels

Ground Bar:  
Cover: **FI - JW##C - BGB - S - 6000**  
**FI - JW##C - CGB - S - 9000**  
Only orderable in reels

Receptacle: **HD1S040HA1R6000**

Cable Plug: **HD1P040MA1R6000**

Cover Shell: **HD1P040-CSH1-10000**

Pull Bar: **HD1P040-PB1**



1: Discrete wire  
2: Coax wire

\*Licensed by I-PEX, Co., Ltd. Orderable in reels




**Single Row**

Receptacle: **FI - S\_##P - HFE**





Cable Plug: **FI - S\_##S**

E: EMI Shell  S: Discrete wire crimp   
(Only for 20 pos, FPC) ME: FPC/FFC  
MRE: Rev. FPC/FFC

Receptacle: **FI - R\_ ## S - HF**

E: EMI shell  H: Horizontal   
V: Vertical 

Cable Plug: **FI - R\_ ## H**

E: EMI shell  L: Locking Latches   
H: Discrete wire crimp   
C: Fine-wire coaxial 

Cover Shell: **FI - RE ## CL- SH2 - 3000**  
Only for coax cable plug

Crimp Contacts: **FI-RC3-1A-1E-15000 (upper)**  
**FI-RC3-1B-1E-15000 (lower)**

Hand Crimp Tool: **CT150-4C-FIR**

Semi-Auto: **3502-FI-2B**


Receptacle: **FI-Z40S-HF-R6000**

Ground enforced

Mates with HD1 plug connector. FI-Z footprint has additional ground pads when compared to the HD1 receptacle footprint.

Orderable in reels

**Dual Row**

Receptacle: **FI - TWE##PB - VF** Vertical  
**FI - W\_ ##P - HFE** Right angle  
E: EMI Shell 




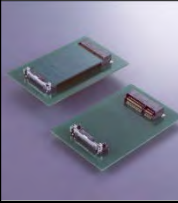



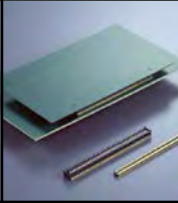

Cable Plug: **FI - W##S**

Crimp Contacts: **FI-C3-A1-15000**

Hand Crimp Tool: **CT150-4C-FI**

Semi-Auto: **3502-FI-2B**

# Card Connectors 1 (microSD, CF, DIMM, PCIe, M.2)

Series	ST1	ST11	ST12	MM60	MM70	MM80	JC26/C2	WA6	SM3
Photo									
Card	microSD	microSD	microSD	PCI Express Mini Card	MXM 3.0 Graphics Card	DDR3 SDRAM SODIMM	Compact Flash	MicroDIMM	M.2
Mounted Height	1.9mm/1.4mm	1.25mm	1.4mm	2.125, 4.0, 5.9mm	4.3, 6.7mm	5.2, 9.2mm	5.8mm, 7.4mm	3.0mm	1.2, 2.15, 3.1, 4.1mm
Pin Count	8, 8+2	8+2	10	52,76	314	204	50	214	67
Voltage Rating	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	300V rms (1 min.)	250V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)
Current Rating	0.5A	0.5A	0.5A	0.5A	0.5A	0.3A	0.5A	0.3A	0.5A
Durability	10,000 cycles	5,000 cycles	10,000 cycles	50 cycles	30 cycles	25 cycles	10,000 cycles	25 cycles	60 cycles
Style	Hinged	Push-Push	Push-Push	Card Edge	Card Edge	Card Edge	Ejector	Board to Board	Card Edge
Features	Available with card detection switch. Smallest footprint & lowest height for hinged type.	Strong mechanical lock to prevent card from popping out from vibration and shock.	2 extra contacts included for RF cards. Easy SMT solder inspection.	Retention latch or screw hold downs available to fix module to connector and main PCB.	MXM3.0 standard compatible. Available in 2 heights.	DDR3 SO-DIMM connector compatible w/ JEDEC standard MO-268C.	Reverse mount available. Retractable ejector available.	DDR2 MicroDIMM connector compatible with JEDEC Standard MO-260B SO-004A.	Multiple key and heights variations available.

MicroSD: **ST1W008S4 A R1500**  
 Hinged type  
 Modification code

MicroSD: **ST1W008S4 G R2000**  
 Low profile  
 Hinged type  
 G: Without detect switch  
 T: Card detect switch  
 X: Cover detect switch

MicroSD: **ST11S008V4HR2000**  
 Push-push type

PCI Express Mini Card

Connector : **MM60 - 52 - B 1 - E 1**  
 No. of contacts  
 Socket type  
 B: Top mount  
 C: Mid mount  
 Key type  
 Contact finish  
 Height modification code

Latch : **MM60 - EZ - H059 - B 5**  
 Latch type  
 Connector height  
 With boss  
 5: Sn plating

Nut : **NT1R3000** 4.0mm height connector  
**NT4R1600** 5.9mm height connector

MXM 3.0 Graphics Card

Connector: **MM70- 314-310 B 2 - 1**  
 Height modification code  
 1: 3.0mm  
 2: 1.5mm  
 Contact finish: (Au plating)  
 1: 0.1µm min.  
 2: 0.3µm min.

DDR3 SDRAM SO-DIMM

Connector: **MM80 - 204B1 - E1R**  
 Height modification code  
 Blank: 5.2  
 E: 9.2  
 Blank: Standard  
 R: Reverse

CompactFlash

Connector: **JC26A - BB \* E**  
 Blank: Standard  
 16: +1.6mm

Frame: **JC26C2 - D S R E**  
 D: Push-push ejector  
 F: Fixed ejector  
 S: Standard  
 R: Reversed  
 Blank: Standard  
 16: +1.6mm  
 R: Right, flip  
 L: Left, flip  
 M: Right, fixed  
 H: Left, fixed

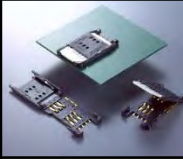

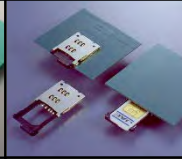
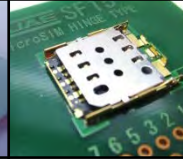
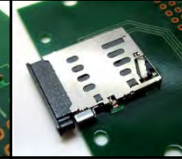
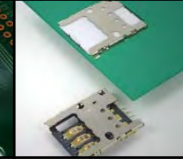
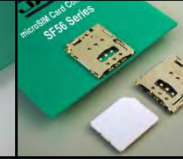
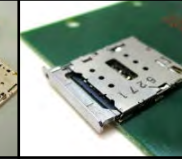
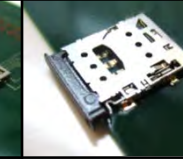
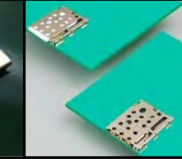
DDR2 MicroDIMM

Female side: **WA6F214VA1T**  
 Male side: **WA6M214VA1T**

M.2 (NGFF)

Connector: **SM3 Z S 067 U 310 \*\***  
 No. of contacts  
 Mounting Type: On-board  
 Height:  
 215: 2.15mm  
 310: 3.10mm  
 410: 4.10mm  
 Polarizing key: A/B/E/M

# Card Connectors 2 (SIM, Micro SIM, Nano SIM)

Series	SF7	SF8	SF9	SF15	SF51	SF53	SF56	SF58	SF70	SF72
Photo										
Card	SIM	SIM	SIM	Micro SIM	Micro SIM	Micro SIM	Micro SIM	Micro SIM	Nano SIM	Nano SIM
Mounted Height	1.9mm/1.4mm	1.5mm	1.8mm	1.55mm	1.8mm	1.45mm	1.25mm	1.3mm	1.25mm	1.25mm
Pin Count	6, 6+2	6	6	6	6+2	6	6+2	6+2	6+2	6
Voltage Rating	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)	500V rms (1 min.)
Current Rating	10 $\mu$ A to 1A	10 $\mu$ A to 1A	10 $\mu$ A to 1A	0.5A	0.5A	0.5A	0.5A	0.5A	0.5A	0.5A
Durability	5,000 cycles	5,000 cycles	5,000 cycles	1,500 cycles	1,000 cycles	1,500 cycles	5,000 cycles	5,000 cycles	5,000 cycles	5,000 cycles
Style	Hinged	Push-Pull Tray	Push-Pull Tray	Hinged	Pin Eject Tray	Push-Pull	Push-Push	Pin Eject Tray	Pin Eject Tray	Push-Push
Features	Locking structure. Positioning boss, metal cover, or detection switch available.	Lowest profile for tray type connector. Normal and reverse mount available.	Normal and reverse mount available. 5 hold-downs for EMI and ESD prevention.	Small footprint and height. Clear click feeling to indicate when cover is locked.	Reverse mount w/ detect switch. Unique lock design to increase tray retention strength without increasing eject force.	Unique contact design to prevent damage from angled insertion and use with card adapters.	Smallest in class height. Detect switch included.	Low profile and narrow design. Push-eject tray type with detect switch included.	Compatible with 4FF nano SIM cards for compact portable devices. Includes detect switch.	Low profile; Special contact shape for enhanced reliability. Includes detect switch.

SIM: **SF7W 006 S 1 A**

Hinge type connector

006: 6 position  
008: 6 signal + 2 switch

A: Positioning boss  
B: No boss  
E: Low profile

1: Standard  
4: Low profile

Micro SIM: **SF51S006V4BR1400**

Tray type

Please contact JAE for recommended dimensions of the tray.

Micro SIM: **SF15W006S4BR2000**

Hinge type

SIM: **SF8V006S4AR1200**

Tray type connector

A: Standard  
B: Reverse

Tray: **SF8-STS1-A** Standard  
**SF8-STR1-B** Reverse

**Need both Connector and Tray to use SF8 series**

Micro SIM: **SF50S006V4AR1500**

Pull bar type

A: Pull bar on left  
C: Pull bar on right

Micro SIM: **SF58S006VBAR2000**

Tray type

Please contact JAE for recommended dimensions of the tray.

SIM: **SF9W006S4AR1200**

Tray type connector

A: Standard  
B: Reverse

Tray: **SF9-STS1-A** Standard  
**SF9-STR1-B** Reverse

**Need both Connector and Tray to use SF9 series**

Micro SIM: **SF56S006V4AR2000**

Push-Push Type

Nano SIM: **SF70S006VBAR2000**



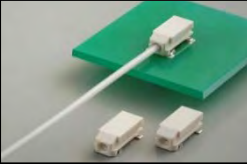




Tray type

Please contact JAE for recommended dimensions of the tray.

Nano SIM: **SF72S006VBAR2500**

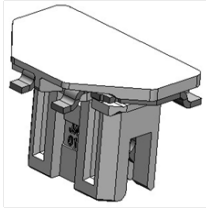
Push-Push Type

# LED Lighting Connectors

Series	ES3	ES3 (WF2)	ES3 (JF3)	ES5	ES6	ES9	ES10
Photo							
AWG	N/A	#22,24,26	#24,26 (solid)	#22,24,26	N/A	#22,24,26	#24,26 (solid)
Pin Count	2	2	1	1	2	2,4	1
Height	1.6mm (above board)	1.65mm (above board)	2.9mm	1.6mm	1.55mm (above board)	3mm	2.2mm
Locking	Friction	Latch	Friction	Latch	Friction	Friction	Friction
Durability	20 cycles	20 cycles	5 cycles	20 cycles	20 cycles	10 cycles	5 cycles
Current Rating	1.0A	2.0A	2.0A	4.0A	1.0A	3.0A (4 pos.) 4.0A (2 pos.)	2.0A
Voltage Rating	200V	200V	N/A	N/A	250V	300V	N/A
Operating Temperature	-40 ~ +105 °C	-40 ~ +105 °C	-40 ~ +105 °C	-40 ~ +105 °C	-40 ~ +105 °C	-40 ~ +105 °C	-40 ~ +105 °C
Features	Card edge connector that eliminates the need for wires to connect between boards.	Mechanical lock included for use in applications with vibration and shock.	Tapered insertion for easy mating. No harness assembly required.	Special lock structure that has a clear "click" feeling for secure mating.	Smallest size . Card edge connector design to reduce components and labor.	Spring lock structure provides high vertical and horizontal retention strength.	Compact structure with no insulator allows design flexibility. Easy single wire cable insertion.

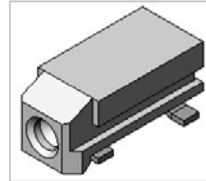
**ES3 Series (Card Edge type)**

Receptacle: **ES3B002WF1R1000**



**ES3-JF3 Series (Cable insertion type)**

Receptacle: **ES3S001JF3R3300**



**ES3-WF2 Series (Board-to-Wire type)**

Receptacle: **ES3B002WF2R1000**

Housing: **ES3S002SZA**

Contact: **IL-Z-C1-A-7000**



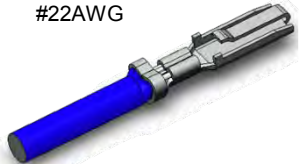
**ES5 Series**

Receptacle: **ES5S001JFAR5500**



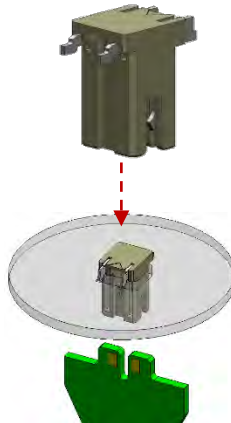
Cable Plug: **ES5P09K5FA**  
#24-26AWG

Cable Plug: **ES5P09K4F2**  
#22AWG



**ES6 Series**

Receptacle: **ES6B002WF1R1000**



**ES9 Series**

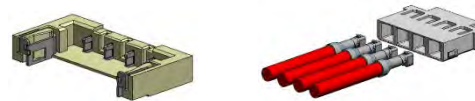
Receptacle: **ES9P 00# VF1R1600**

No. of contacts:  
002: 2  
004: 4

Plug (housing): **ES9S 00# SZA**

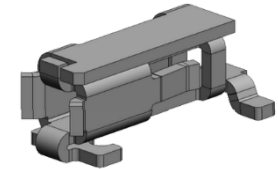
No. of contacts:  
002: 2  
004: 4

Contact: **ES9S06K4FA**










**ES10 Series**

Receptacle: **ES10S001JF1R5500**



# High-Power Connectors

Series	DW1	DW2	DW3	DW4	DW05	DW07	KB1	KW1
Photo								
Type	Rack-and-Panel	Rack-and-Panel	Rack-and-Panel	Board-to-Cable	Cable-to-Cable	Bus bar-to-Bus bar	Cable-to-Cable	Plug + Cable
Pin Count	Power: 2 Signal: 20	Power: 2 Signal: 20	Power: 2 Signal: 24	1	1	N/A	1	Power: 2 Signal: 7
Current	Power: 500A Signal: 2A	Power: 200A Signal: 2A	Power: 150A Signal: 2A	100A	150A	Current value (in A) that temperature rise will be 30 K or 65 K x safety ratio (80%)	25A max. (KB1-12-PC/SC) 10A max. (KB1-12-PC2/SC2)	Power: 125A Signal: 2A
Voltage Rating	Power: 600V Signal: 100V	Power: 600V Signal: 100V	Power: 600V Signal: 100V	600V	600V	N/A	1000VDC / 6000VAC Pollution Degree: 3 Over Voltage Category: III	DC500V
Durability	20 cycles	100 cycles	100 cycles	50 cycles	100 cycles	100 cycles	50 cycles	10,000 cycles
Floating Range	+/- 2.75mm	+/-2.75mm	+/-2.0mm	N/A	N/A	N/A	N/A	N/A
Operating Temp	-40 ~ +95 °C	-40 ~ +115 °C	-40 ~ +105 °C	-40 ~ +85 °C	-40 ~ +85 °C	-25 ~ +105 °C	-40 ~ +90 °C	-10 ~ +40 °C
Features	DW1 Robust power and signal hybrid for large battery modules. Floats for easy mating.	200A for mid-range power solutions. Signal and power hybrid. Floats for easy mating.	Low-profile to fit 1U form-factory battery rack. Power plus signal. Floats for easy mating.	Secure cable connector for high-power. Color-coded and keyed to prevent mating errors.	Keyed cable-to-cable connector for safe high-power mating. Screw holes for easy mounting.	Innovative busbar connector solution without screws or insulator. Clip mounting, no tools necessary.	High-current interconnect connector for solar panel module.	One-touch operation and lightweight for easy handling. UL recognized. Weather and impact resistant.



**DW1 \* 002 Z H 1**

R: Receptacle  
P: Plug

No. of Contacts  
002: 2 pos. (shown in 3 digits)

Modification Code  
Plating of Contact Area  
H: Ag plating  
Connection Type  
Z: Others

**DW1 \* 020**

R: Receptacle  
P: Plug

No. of Contacts  
020: 20 pos. (shown in 3 digits)

**DW1 \* 04K 4 F 1**

S: Crimp, socket  
P: Crimp, pin

No. of Contacts  
04K: 4000 pcs.  
Reel Part Number  
K: unit of 1000 pcs. (Note 1)

Modification Code  
Plating of Contact Area  
F: Sn plating  
Applicable Cable Size  
4: 22AWG

**Note 1: An embossed reel contains 4,000 pcs.**

**DW2 \* 002 Z H 1**

R: Receptacle  
P: Plug

No. of Contacts  
002: 2 pos. (shown in 3 digits)

Modification Code  
Plating of Contact Area  
H: Ag plating  
Connection Type  
Z: Others

**DW2 \* \*\*\* \***

R: Receptacle  
P: Plug

No. of Contacts  
010: 10 pos.  
020: 20 pos. (shown in 3 digits)

Modification Code (Plug side only)

**DW1 \* 04K 4 F 1**

S: Crimp, socket  
P: Crimp, pin

No. of Contacts  
04K: 4000 pcs.  
Reel Part Number  
K: unit of 1000 pcs. (Note 1)

Modification Code  
Plating of Contact Area  
F: Sn plating  
Applicable Cable Size  
4: 22AWG

**Note 1: An embossed reel contains 4,000 pcs.**

**DW3 \* 002 Z H 1**

R: Receptacle  
P: Plug

No. of Contacts  
002: 2 pos. (shown in 3 digits)

Modification Code  
Plating of Contact Area  
H: Ag plating  
Connection Type  
Z: Others

**DW3 \* 012 A**

R: Receptacle  
P: Plug

No. of Contacts  
012: 12 pos. (shown in 3 digits)

Modification Code

**DW\* \* 04K 4 F 1**

1: Standard  
3: Long Pin

S: Crimp, socket  
P: Crimp, pin

No. of Contacts  
04K: 4000 pcs.  
Reel Part Number  
K: unit of 1000 pcs. (Note 1)

Modification Code  
Plating of Contact Area  
F: Sn plating  
Applicable Cable Size  
4: 22AWG

**Note 1: An embossed reel contains 4,000 pcs.**

**DW4 \* 001 Z F 1**

P: Plug (with Cable)

No. of Contacts  
001: 1 pos. (shown in 3 digits)

Modification Code  
Plating of Contact Area  
F: Sn plating  
Connection Type  
Z: Others

**DW4R 001 W 00 12880**

No. of Contacts  
001: 1 pos. (shown in 3 digits)

Connection Type  
W: Ultrasonic wave

Last five digits of SJ No.  
Modification Code

**DW05 \* 01 C \*\* \***

S: Socket  
P: Pin

No. of Contacts  
01: 1 contact

Modification Code  
Plating of Connection Area  
AG: Silver  
ZZ: Others  
Connections  
C: Cable

**KB1 J S 01 \* G \* L**

Cable Connecting Type

Shell Size

No. of Contacts

S: Crimp Type Socket Contact  
P: Crimp Type Pin Contact

Modification Code  
L: With Unlock Tab  
Applicable Cable O.D.  
1: 7.0mm in dia.  
2: 6.4mm in dia.  
Contact Size

**DW07 S 01 B AG \***

S: Socket

No. of Contacts  
01: 1 contact

Modification Code  
Plating Specification  
AG: Silver  
Connected to  
B: Busbar

**KW1 G Y 09 P D L\*\*\*\* \*\***

Angle Plug

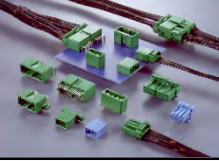


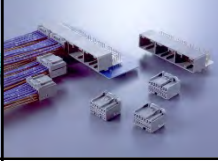

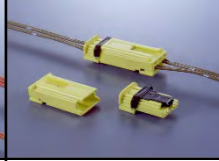

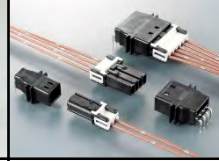
Shell Size

No. of Contacts

Crimp

Modification Code  
E1: CE Compliant Products  
U1: UL/cUL Recognized Products  
Cable Length L (cm)  
Contact Size

# Transportation 1

Series	IL-AG5	MX19	MX23A	MX31	MX36	MX37	MX39/MX45	MX44
Photo								
Pitch	2.5mm	2.5mm	2.5mm	Signal: 2.2mm Power: 3.2mm	2.5mm	2.2mm	2.2mm	3.5mm
Wire Size	AWG #22-18 AV, AVS, AVSS: 0.3 to 0.5mm <sup>2</sup> AVS, AVSS: 0.85mm <sup>2</sup>	AWG #22-20 CAVS: 0.3 to 0.5mm <sup>2</sup> AVSS: 0.5mm <sup>2</sup>	AWG #22-16 AVSS, AVS: 0.5 to 1.25mm <sup>2</sup>	Signal: AWG #22-20 Power: AWG #22-16  Signal: AVS, AVSS, AVX 0.3 to 0.5mm <sup>2</sup> Power: AVS, AVSS, AVX 0.3 to 1.25mm <sup>2</sup>	AWG #20  AVSS 0.5, AVSS 0.5f, AVSSX 0.5f, TVSSX 0.5f	AWG #20  AVSS 0.5, AVSS 0.5f, AVSSX 0.5f, TVSSX 0.5f	AWG #28 Twin Ax	AWG #22-20  AVSS 0.3 to 0.5mm <sup>2</sup>
Pin Count	1 row: 4,5,6,7,10 2 rows: 14,16, 18,22,30	2,4	12,18,26,34,36,40	Pin: 70,98,104,135 Socket: 31,34,35	2,4	4	4	2,4,6
Current Rating	3A	5A	3A	Signal: 2.2A Power: 5.7A	3A	3A	500mA	3A
Operating Temp	-40 ~ +85 °C	-40 ~ +85 °C	-40 ~ +125 °C	-40 ~ +85 °C	-40 ~ +125 °C	-40 ~ +105 °C	-40 ~ +85 °C	-40 ~ +125 °C
Application	Cable-to-Cable/ Board-to-Cable	Cable-to-Cable	Board-to-Cable	Board-to-Cable	Cable-to-Cable	Cable-to-Cable	Cable-to-Cable/ Board-to-Cable	Board-to-Cable
Features	Mechanical lock system enabling complete mating. Secondary lock mechanism to ensure correct terminal retention. Simplified crimp type termination.	Waterproof. Mechanical lock system. Grommet seal. Terminals have low insertion force and stress dispersion. Rear cover protects the grommet from damage.	Waterproof. Low profile. Available in reverse mount type. Retainer detects incomplete insertion of socket contact.	Mechanical lock system with audible click. Socket side contact designed with secondary lock. Simplified crimp type termination.	Waterproof. Spring separates connectors if not correctly mated. Shorting contact eliminates static discharge. Retainer detects incomplete insertion of socket contact.	Mechanical complete mating method. Spring separates connectors if not correctly mated. Shorting contact eliminates static discharge. Retainer detects incomplete insertion.	USB 2.0 compatible. Sold as a complete harness with USB standard receptacle.	Single contact waterproof. Compact size. Improved vibration resistance by vibration absorption function of rubber. Secondary lock mechanism.

Socket Housing: **IL-AG5-#S- S3C1**      Contacts: IL-AG5-C1-5000 (socket)  
 Pin housing: **IL-AG5-#P- S3C1**      IL-AG5-PC1-5000 (pin)  
 Pin header: **IL-AG5-#P- S3L2**

S: single row  
 D: double row  
 L: right angle  
 T: straight

Hand tool: CT150-1-AG5  
 Semi auto: 3502-AG5-2  
 Automatic: 350-AG5-3B

Socket housing: **MX1900#S51**      Contacts: MX19S10K451 (socket)  
 Pin housing: **MX1900#P51**      MX19P10K451 (pin)  
 Dummy pin: MX1900XD1

1: Black  
 2: Gray

Hand Tool: CT150-4C-MX19  
 Semi auto: 3502-MX19-2B

Socket housing: **MX23A##SF1**      Contacts: M23S05K351  
 Pin header: **MX23A##NF1**      Dummy pin: M120-55780  
 Front cap: **MX23A##XF1**

1: Standard  
 2: Reverse

Hand tool: CT160-3B-MX23  
 Semi auto: 350-MX23-2

Socket housing: **MX340##SF1**      Pin header: **MX340##UF1**

U: Straight      1: 3-24 pos  
 N: Angled      2: 28-40 pos

Contacts	Hand Tool	Semi auto	Automatic
M34S75C4F1	CT150-2-MX34	350-MX34D-2	350-MX34B-3B
M34S75C4F2	CT150-1-MX34	350-MX34D-2	350-MX34B-3B
M34S75C4F3	N/A	350-MX34C-2	350-MX34C-3B
M34S75C4F4	N/A	350-MX34C-2	350-MX34C-3B

Board Mounting Receptacle: **MX39004NQ1**  
 USB Harness: **MX45004S0008397 (150mm)**

Socket housing: **MX3600#SQ3**      Contacts: M36S08K4Q3 (socket)  
 Pin housing: **MX3600#PQ3**      M36P08K4Q3 (pin)  
 Front cap: **MX36004XF3**

Semi auto: 350-MX36-2  
 Automatic: 350-MX36-3B

Socket housing: **MX37004SP3**      Contacts: Socket M37S07K4P3      Pin M37P75C4P3  
 Pin housing: **MX37004PP3**

Semi Auto: 350-MX37S-2      350-MX37P-2  
 Automatic: 350-MX37S-3B      350-MX37S-3B

Socket housing: **MX44####SF1**      Contacts: M44S05K4F1  
 Pin header: **MX44####NF1**  
 Retainer: **MX44####XR1**      Hand Tool: CT150-2-MX44  
 Wire seal: **MX44000XP1**      Semi Auto: 3502-MX44-2

Wire O.D.  
 1: 1.4-1.5mm  
 2: 1.6-1.7mm

Socket housing: **MX31 ### SG A**  
 31, 34, 35 pos      Modification code

Pin header: **MX31 ### N F D**  
 70, 104, 135 pos      Modification code

F: All Sn plated contacts  
 Q: Selective gold plated contacts

Contacts	Wire Size (AWG)	Semi Auto	Automatic
M31S07K4FA (Sn, signal)	#22-20	350-MX31A-2	350-MX31A-3B
M31S07K4QA (Au, signal)	#22-20	350-MX31A-2	350-MX31A-3B
M31S07K4FB (Sn, signal)	#24	350-MX31A-2	350-MX31A-3B
M31S05K4FA (Sn, power)	#18-16	350-MX31B-2	350-MX31B-3B
M31S05K4QA (Sn, power)	#22-18	350-MX31B-2	350-MX31B-3B
M31S05K4QA (Au, power)	#22-18	350-MX31B-2	350-MX31B-3B

# Transportation 2

Series	MX34			MX35	MX38	MX47	MX48	MX49	MX50/53
	Standard T/H	Straight SMT	Right Angle SMT						
Photo									
Pitch	2.2mm	2.2mm	2.2mm	N/A	2.0mm	2.5mm	2.0mm	2.0mm	1.5mm
Wire Size	AWG #22-20 AVSS: 0.3, 0.5mm <sup>2</sup> CHFUS: 0.22 to 0.75mm <sup>2</sup> , CAN SD: 0.35mm <sup>2</sup>	AWG #22-20 AVSS: 0.3, 0.5mm <sup>2</sup> CHFUS: 0.22 to 0.75mm <sup>2</sup> , CAN SD: 0.35mm <sup>2</sup>	AWG #22-20 AVSS: 0.3, 0.5mm <sup>2</sup> CHFUS: 0.22 to 0.75mm <sup>2</sup> , CAN SD: 0.35mm <sup>2</sup>	N/A	AWG #28 (Twin Ax)	AWG #22-16 AVSS 0.3 to 1.25mm <sup>2</sup>	AWG #28 (Twin AX)	Signal: AWG #26 (Twin Ax) Power: AWG #20	AWG #28 (Twin Ax)
Pin Count	3,5,7,8,12,16,20, 24,28,32,36,40	12,20,32	8,12,20	1	2	39	2	4	19
Current Rating	3A	3A	3A	1A	—	3A	—	Signal: 0.5A	0.5A
Operating Temp	-40 ~ +85 °C	-40 ~ +85 °C	-40 ~ +85 °C	-30 ~ +85 °C	-40 ~ +85 °C	-40 ~ +125 °C	-40 ~ +85 °C	-40 ~ +85 °C	-40 ~ +85 °C
Application	Board-to-Cable	Board-to-Cable	Board-to-Cable	Board-to-Cable	Board-to-Cable	Board-to-Cable	Board-to-Cable	Board-to-Cable	Cable-to-Cable/ Board-to-Cable
Features	Mechanical lock system enabling complete mating. Secondary lock mechanism to ensure correct terminal retention. Simplified crimp type termination. Thru hole terminals.	Vertical mount SMT header. Same features as standard MX34.	Horizontal mount SMT header. Same features as standard MX34.	Conforms to FAKRA standard. Frequency range of DC to 4GHz. Available as straight or right angle. Multiple keying options available.	Excellent in transmission of high-speed signals such as LVDS and GVIF. Different key options available.	Waterproof. Different key option available. Retainer detects incomplete insertion of socket contact.	Excellent in transmission of high-speed signals such as LVDS and GVIF. Different key options available. Extremely compact design.	Compatible with USB 2.0 signal speeds. Different key options available. Extremely compact design.	HDMI Type E compatible connector and harnesses. Cable mounted receptacle for mating with consumer HDMI cables is available.

T/H Pin header: **MX340##UF1**      Socket housing: **MX340##SF1**

U: Straight      1: 3-24 pos  
N: Angled      2: 28-40 pos

SMT Pin header: **MX34R##VF1 \***

V: Straight      Blank: tube  
H: Angled      T: tray

1: Straight  
4: Angled

Contacts	Hand Tool	Semi auto	Automatic
M34S75C4F1	CT150-2-MX34	350-MX34D-2	350-MX34B-3B
M34S75C4F2	CT150-1-MX34	350-MX34D-2	350-MX34B-3B
M34S75C4F3	N/A	350-MX34C-2	350-MX34C-3B
M34S75C4F4	N/A	350-MX34C-2	350-MX34C-3B

Board Mounting Receptacle: **MX38002FQ1**

Pin header: **MX38002NQ1**

Different key code: 1,2,3,4

**JAE will supply the complete mating harness designed to customer specifications.**

Socket housing: **MX47037SF1**

Pin header: **MX47037NF1**

Front cap: **MX47037XF1**

Key code: 1,2

Contacts	Wire Size (AWG)	Hand Tool	Semi Auto Applicator
M47S65H2FA	#22-20	CT160-3-MX47	3502-MX47-2
M47S65H3FA	#18	CT160-3B-MX47	3502-MX47-2
M47S65H4FA	#16	CT160-3C-MX47	3502-MX47-2

Pin header: **MX35 # 01 N P1**

N: angle  
T: straight

Different key code

Key Codes:

<u>Angle type</u>	<u>Straight type</u>
B: white	B: white
C: blue	C: blue
E: green	E: green
F: brown	F: brown
G: blue-gray	H: violet
H: violet	I: beige
K: yellow	

Board Mounting Receptacle: **MX48002NQ1**

Different key code: 1,2,3,4

**JAE will supply the complete mating harness designed to customer specifications.**

Board mounting receptacle: **MX49004 # Q 1**

N: T/H  
H: SMT

Different key code: 1,2 (T/H)  
1,2,3,4 (SMT)

**JAE will supply the complete mating harness designed to customer specifications.**

Board mounting receptacle: **MX50019NQ1**

**JAE will supply the complete mating harness designed to customer specifications.**

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Technology to Inspire Innovation

