

ComboStak® 0.50mm & PowerStak® 2.00mm Board-to-Board Connector

HYBRID AND HIGH SPEED SOLUTION

The ComboStak® 0.50 mm BTB connectors are compact, hybrid (signal and power) board-to-board connectors. ComboStak® 0.50 mm combines existing, BergStak® 0.5mm pitch HS signal pins with 2.00mm pitch power blades. ComboStak® 0.50 mm provides high signal and current density with a wide range of stack heights.

- High current carrying capacity with miniaturized shape
- Up to 25A per power blade
- 2 to 10 power blades on 2.0mm pitch
- 20 to 120 signal pins on 0.5mm pitch
- Signal speed is up to PCIe® Gen 4 16Gb/s & USB type C 20Gb/s Spec
- 5mm to 20mm stack heights
- Self-alignment for blind mating
- Meets USCAR-2 V2 Shock and Vibration



TARGET MARKETS



FEATURES

- 2.00mm pitch for power contacts
- Double row 0.50 mm pitch for signal system
- Power distribution and signal control in one connector
- Variable position and stack height
- Reliable 4 points power contact system
- Scoop proof housing with ± 0.4mm misalignment tolerance
- Housing with metal hold down
- Locating pegs available
- UL94V-0 high temperature LCP material
- Lead-free, RoHS and Halogen-free compliant

BENEFITS

- High current carrying capacity with miniaturized shape to save space
- Signal pin contains all benefits of BergStak® 0.50mm HS
- Streamline BOM usage to save space and cost
- Meets your needs for a wide range of applications
- Provide reliable mating force and excellent contact performance
- Supports secure blind mating and automatic assembly with cost effective
- Guarantee stable PCB retention force
- Enables easy manual assembly
- High flammability rating with operating temperatures up to 125 °C
- Meets environmental, health and safety requirements

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TECHNICAL INFORMATION

MATERIAL

- Header / Receptacle : High temperature, thermoplastic LCP, Natural (UL94V-0)
- Terminal: Copper Alloy.
- Hold Down: Copper Alloy
- Plating: Gold or GXT®

ELECTRICAL PERFORMANCE

- Operating Voltage Rating: 30VDC
- Current Rating:
 - Power Pin: 25A max. per contacts
 - Signal Pin: 0.5A all contacts powered
- Insulation Resistance: 1000MΩ min.
- Contact Resistance: 50mΩ max. (Initial)
- Speed: Up to PCIe® Gen 4 16Gb/s, USB type C 20Gb/s Spec.

MECHANICAL PERFORMANCE

- Durability: 50 cycles
- Mating Force: Power pin 6.5N max. Signal pin 0.9N max.
- Un-mating Force: Power pin 0.8N min. Signal pin 0.045N min.
- Point of Power Pin Contact: 4
- Wiping Length: 0.83mm

ENVIRONMENTAL

- Operating Temperature Range: -40°C ~ 125°C.
- MFG: EIA 364-65 Class -IIA compatible

SPECIFICATIONS

- Product Spec.: GS-12-1861

PACKAGING

- Tape & Reel

TARGET MARKETS/APPLICATIONS



Automotive Camera



5G AAU



Desktop



Datacenter Servers Storage



Factory Automation Camera Embedded Computer

PART NUMBERS

Find part number details using the search box on www.amphenol-cs.com

Description	Part Number
PowerStak®, Vertical Receptacle, 2pos, Height=3.7mm	10159561-200121RLF
PowerStak®, Vertical Header, 2pos, Height=4.3mm	10159560-200421RLF
PowerStak®, Vertical Receptacle, 10pos, Height=7.7mm	10159561-A00221RLF
PowerStak®, Vertical Header, 10pos, Height=2.3mm	10159560-A00221RLF
ComboStak®, Vertical Receptacle, 2p+10s+2p, Height=7.7mm	10159559-410221RLF
ComboStak®, Vertical Header, 2p+10s+2p, Height=4.3mm	10159558-410421RLF
ComboStak®, Vertical Receptacle, 5p+30s+5p, Height=7.7mm	10159559-A30221RLF
ComboStak®, Vertical header, 5p+30s+5p, Height=2.3mm	10159558-A30221RLF
PowerStak®, Vertical Receptacle, 4pos, Height=15.7mm	10180208-400421RPF
PowerStak®, Vertical Header, 4pos, Height=14.3mm	10180207-400E21RPF

New!

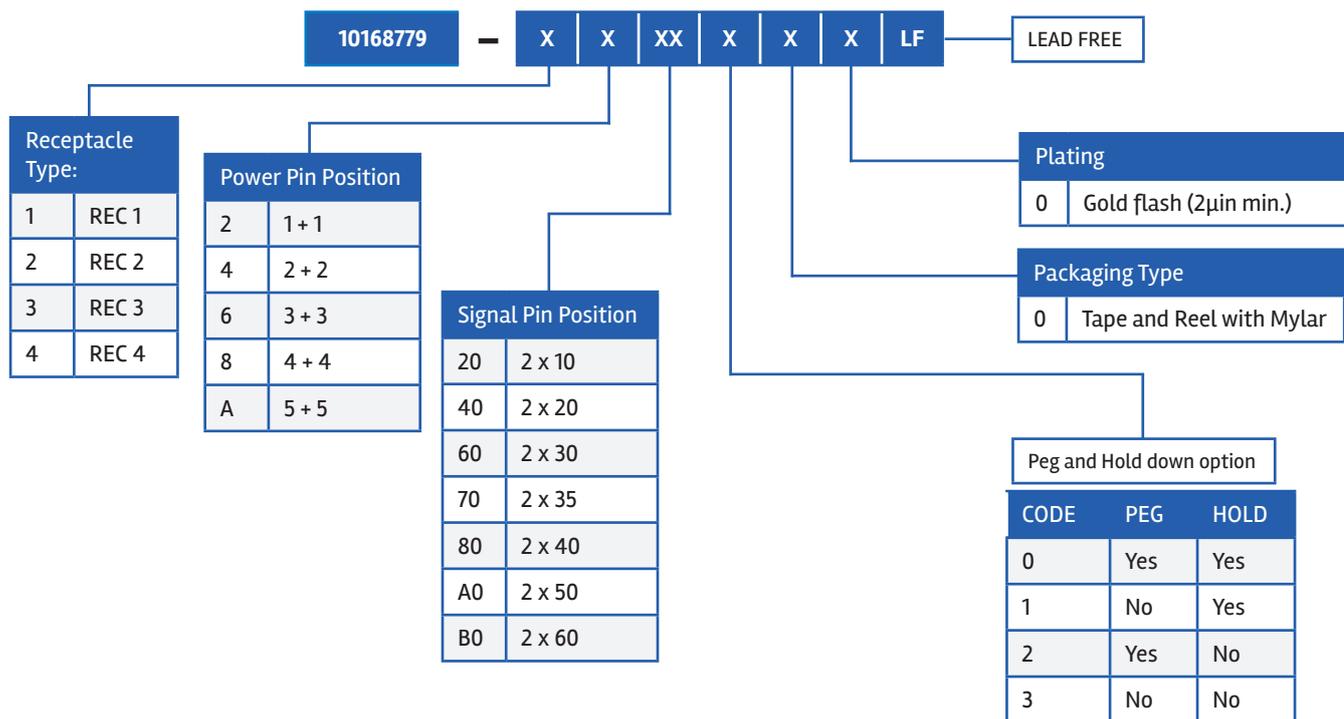
30mm Height with Lead-In
Header: 10180207-400E21RPF
Receptacle: 10180208-400421RPF



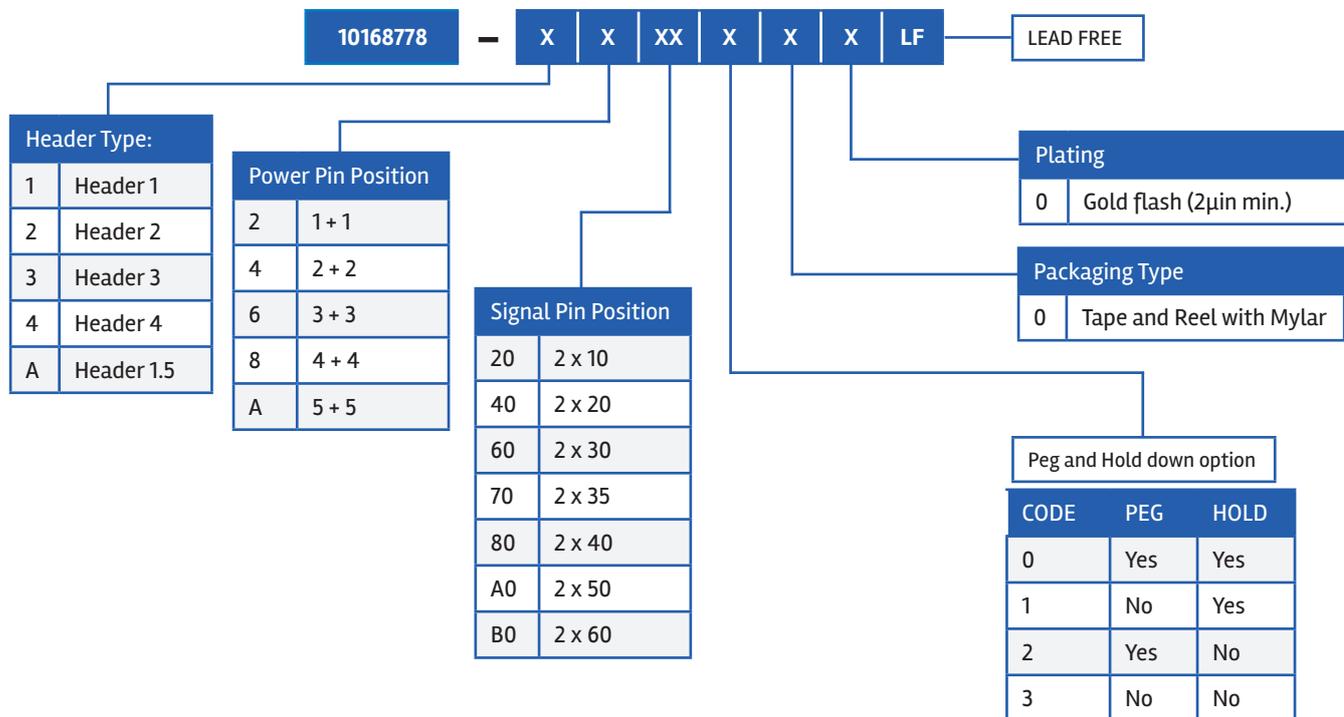
Remarks: More options can be extended according to the market needs

▶ ComboStak® 0.50mm & PowerStak® 2.00mm Board-to-Board Connector

COMBOSTAK® 0.50MM RECEPTACLE



COMBOSTAK® 0.50MM HEADER



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POWERSTAK® RECEPTACLE

10159561 - X X 0 X X X X L F LEAD FREE

X	POWER POSITION
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	10

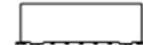
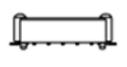
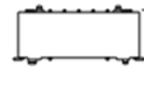
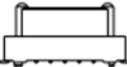
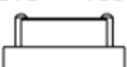
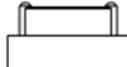
L WITH PEG / WITHOUT DATE CODE

X	SOLDER TRAIL PLATING
1	GOLD FLASH

X	PLATING: CONTACT AREA
1	GOLD OR GXT® 0.2µm min.
2	GOLD OR GXT® 0.75µm min.

X	PACKAGING
R	T&R WITH MYLAR
T	TUBE WITHOUT MYLAR

X	POLARIZED OPTIONAL
0	NONE
2	2#
3	3#
4	4#
5	5#
6	6#
7	7#
8	8#
9	9#

X	FOR HEADER, SEE DWG. NO. 10159560			
COMBINATION OF MATED HEIGHT	HEADER 1	HEADER 2	HEADER 3	HEADER 4
	 HEIGHT: 1.3	 HEIGHT: 2.3	 HEIGHT: 3.3	 HEIGHT: 4.3
RECEPTACLE 1  HEIGHT: 3.7	 5	 6	 7	 8
RECEPTACLE 2  HEIGHT: 7.7	 9	 10	 11	 12
RECEPTACLE 3  HEIGHT: 11.7	 13	 14	 15	 16
RECEPTACLE 4  HEIGHT: 15.7	 17	 18	 19	 20

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POWERSTAK® HEADER

10159560 - X X 0 X X X X L F LEAD FREE

X	POWER POSITION
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	10

L WITH PEG / WITHOUT DATE CODE

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X	POLARIZED OPTIONAL
0	NONE
2	2#
3	3#
4	4#
5	5#
6	6#
7	7#
8	8#
9	9#

X	FOR RECEPTACLE, SEE DWG. NO. 10159561			
COMBINATION OF MATED HEIGHT	HEADER 1	HEADER 2	HEADER 3	HEADER 4
HEIGHT: 1.3				
HEIGHT: 2.3				
HEIGHT: 3.3				
HEIGHT: 4.3				
RECEPTACLE 1 HEIGHT: 3.7				
RECEPTACLE 2 HEIGHT: 7.7				
RECEPTACLE 3 HEIGHT: 11.7				
RECEPTACLE 4 HEIGHT: 15.7				

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