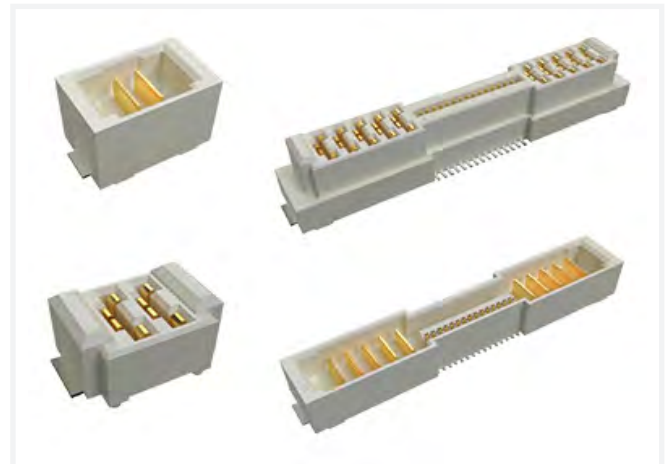


## ComboStak® 0.80mm & PowerStak® 2.00mm Board-to-Board Connectors

### HYBRID AND MEDIUM POWER SOLUTION

ComboStak® and PowerStak® are compact, hybrid (signal and power) and power board-to-board connectors. ComboStak® combines existing, BergStak® 0.8mm pitch signal pins with 2.00mm pitch power blades. PowerStak® is the power only version. Both ComboStak® and PowerStak® provide high signal and current density with a wide range of stack heights.

- High current carrying capacity with miniaturized shape
- Up to 20A per power blade
- 2 to 10 power blades on 2.0mm pitch
- 6 to 140 signal pins on 0.8mm pitch
- Reliable 4 contact point power contact design
- Signal speed is up to 12Gb/s
- 5mm to 20mm stack heights (1.0mm increments)
- Self-alignment for blind mating
- Meets USCAR-2 V2 Shock and Vibration



### TARGET MARKETS



### FEATURES

- 2.00mm pitch for power system
- Power distribution and signal control in one connector
- Support stack height from 5mm to 20mm, power position from 2 to 10pos and signal position from 6 to 140pos
- Scoop proof housing with  $\pm 0.9$ mm misalignment tolerance
- Housing with metal hold down
- Outstanding 4 points contact design
- Optional locating pegs
- High temperature LCP material
- Lead-Free, RoHS and Halogen-free compliant

### BENEFITS

- High current carrying capacity with miniaturized shape to save space and cost
- Signal pin continues to match BergStak® 0.80mm
- Supports a wide range of applications
- Supports secure blind and automatic assembly with cost effective
- Guarantees high PCB retention force
- Offers good contact performance and low mating force
- Enables easy manual assembly
- Supports operating temperatures to 125°C
- Meets environmental, health and safety requirements

## TECHNICAL INFORMATION

### MATERIAL

- Housing: LCP UL94-V0
- Power contact: Copper Alloy
- Signal contact: Copper Alloy
- Hold down: Copper Alloy
- Plating:
  - Nickel under plate
  - Contact area gold or GXT®
  - Solder tail Gold or Tin
  - Hold down Tin

### ELECTRICAL PERFORMANCE

- Current Rating: 20A max. per power contact, 0.8A per signal contact
- LLCR:
  - INITIAL 30mΩ max. AFTER TEST: 50mΩ max. for signal contact
  - INITIAL 1mΩ max. AFTER TEST: 2mΩ max. for power contact
- Insulation Resistance: 1000MΩ MIN.
- Voltage Rating: 100VDC
- Signal Integrity: Up to 12Gb/s

### MECHANICAL PERFORMANCE

- Durability: 200 cycles
- Insertion Force: 6N max. per power contact; 0.9N max. per signal contact
- Withdrawal Force: 0.8N min. per power contact; 0.1N min. per signal contact
- Contact Retention Force: 1N min. per contact
- Shock and Vibration: USCAR-2 V2 compatible

### ENVIRONMENTAL

- Operating Temperature Range: -40°C to +125°C
- High Temperature Life: 105°C for 1000 hours
- Humidity: 90-96% relative for 240 hours
- Mixed Flow Gas: EIA 364-65 Class -IIA compatible

### SPECIFICATIONS

- Product Specification: GS-12-1675
- Application Specification: GS-20-0696

### PACKAGING

- Tape & Reel
- Tube

### TARGET MARKETS/APPLICATIONS



Automotive



Networking



Datacom



Industrial & Instrumentation

## PART NUMBERS

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

\*More versions will be made available following market demand

# ComboStak® 0.80mm & PowerStak® 2.00mm Board-to-Board Connectors

## 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






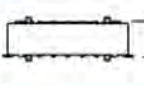

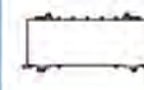

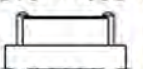




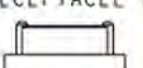


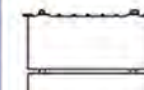





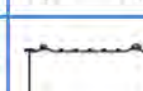
L WITH PEG / WITHOUT DATE CODE

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

# ComboStak® 0.80mm & PowerStak® 2.00mm Board-to-Board Connectors

## 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

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 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				

# ComboStak® 0.80mm & PowerStak® 2.00mm Board-to-Board Connectors

## COMBOSTAK® RECEPTACLE

10159559 - X XX X X X X L F LEAD FREE

L WITH PEG / WITHOUT DATE CODE

X	POWER POSITION (Symmetrical)
2	1+1
4	2+2
6	3+3
8	4+4
A	5+5

X	SOLDER TRAIL PLATING	
	POWER PIN	SIGNAL PIN
1	GOLD FLASH	TIN
2	GOLD FLASH	GOLD FLASH

X	PACKAGING
R	T&R WITH PICK UP
T	TUBE WITHOUT PICK UP
Q	T&R WITHOUT PICK UP

XX	SIGNAL POSITION
06	2X3
08	2X4
10	2X5
20	2X10
30	2X15
40	2X20
**	***
A4	2X70

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

PICKUP FEATURE	DESCRIPTION
MYLAR	SIGNAL POSITION LESS THAN 40 POS
METAL CAP	SIGNAL POSITION MORE THAN 40 POS

COMBINATION OF MATED HEIGHT	FOR HEADER, SEE DWG. NO. 10159558			
	HEADER 1	HEADER 2	HEADER 3	HEADER 4
HEIGHT: 1.3				
HEIGHT: 3.7				
HEIGHT: 7.7				
HEIGHT: 11.7				
HEIGHT: 15.7				

# ComboStak® 0.80mm & PowerStak® 2.00mm Board-to-Board Connectors

## COMBOSTAK® HEADER

10159558 - X XX X X X X X F LEAD FREE

X	POWER POSITION (Symmetrical)
2	1+1
4	2+2
6	3+3
8	4+4
A	5+5

XX	SIGNAL POSITION
06	2X3
08	2X4
10	2X5
20	2X10
30	2X15
40	2X20
**	***
A4	2X70

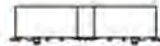
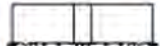

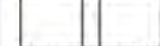
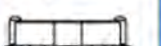



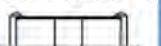
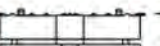
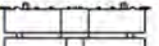

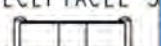







X	SOLDER TRAIL PLATING	
	POWER PIN	SIGNAL PIN
1	GOLD FLASH	TIN
2	GOLD FLASH	GOLD FLASH

X	PACKAGING
R	T&R WITH PICK UP
T	TUBE WITHOUT PICK UP
Q	T&R WITHOUT PICK UP

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

PICKUP FEATURE	DESCRIPTION
MYLAR	SIGNAL POSITION LESS THAN 40 POS
METAL CAP	SIGNAL POSITION MORE THAN 40 POS

L WITH PEG / WITHOUT DATE CODE

X	FOR RECEPTACLE, SEE DWG. NO. 10159559			
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
RECEPTACLE 2				
	HEIGHT: 7.7	9	10	11
RECEPTACLE 3				
	HEIGHT: 11.7	13	14	15
RECEPTACLE 4				
	HEIGHT: 15.7	17	18	19
				20

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