DATASHEET

Pico-Lock Wire-to-Board Connector System ›

The Pico-Lock Wire-to-Board Connector System is ideal for applications requiring ultra-low profile, high-current and secure locking. Notebook and Tablet PCs with large graphic displays continue to get thinner in design and more powerful in functionality. This combination has created a need for a new style of connector that offers a very low profile, high current-carrying capability and a robust positive lock to maintain connection even when subjected to shock or vibration. The Pico-Lock system, available in 1.00, 1.50, 2.00mm and 3.00mm pitch versions, is the first miniature wire-to-board connector system to combine all these features to meet these needs.

ADVANTAGES AND FEATURES

Allows for more efficient use of space on circuit boards

The compact design of low-profile Pico-Lock connectors maximizes the efficient use of space on circuit boards and in tight electronic assemblies, enabling smaller, thinner and more compact electronic devices while maintaining robust electrical connections.

Helps carry larger amounts of electrical current

The high-current Pico-Lock connectors are engineered to provide secure and reliable electrical connections for applications requiring higher power transmission capabilities. Their design allows for efficient handling of up to 10.0A (AWG 16, 2-circuit) of current, making them well-suited for a variety of industrial, automotive and other high-power electronic applications.

Offers secure PCB retention and additional mechanical stability

The wide robust-fitting nails (solder tabs) provide a larger surface area for soldering onto the PCB that ensures a strong and secure mechanical connection between the connector and the PCB.

Provides additional mating retention and visual mating assurance

The top friction locks are designed to enhance the reliability and security of the connection.

Prevents mis-mating while guiding the housing into the header

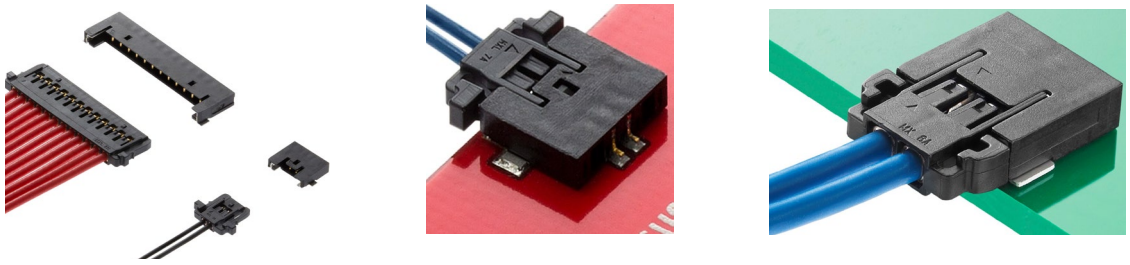
The mating guide for polarization plays a critical role in preventing mis-mating, guiding the connector housing into the header, and enhancing the ease and reliability of connector assembly.

Provides smooth mating and pin-contact protection

The beveled header pin design enhances the ease of use, protects pins and contacts from damage, and improves the overall durability of the connectors.

Helps ensure secure mating retention with additional space savings compared to top-style locks

The side positive locks consist of small tabs on the sides of the connector housings that creates a secure mechanical connection. The reduced footprint of the connectors with side positive locks enables designers to achieve higher component density and more efficient use of available space.



Pico-Lock 1.00mm/1.50mm/2.00mm Wire-to-Board Connectors

Pico-Lock 3.00mm Wire-to-Board Connectors

DATASHEET

Pico-Lock Wire-to-Board Connector System ›

MARKETS AND APPLICATIONS

Automotive
Infotainment
Interior electronics
Heads-up displays
Control units
Black boxes

Appliances
LED/LCD TVs
Notebook PCs
Tablets
Gaming equipment
LED lightings
Heaters/fans

Industrial Automation
Smart meters
Factory automation equipment
Power supplies
Security/Surveillance devices
Transformers

Telecommunications
Wireless modems
Servers

Automotive Infotainment

Smart Meters

Security Cameras

Factory Automation Equipment

SPECIFICATIONS

Reference Information
Packaging:
- Header (Embossed tape)
- Housing (Bag)
- Crimp Terminal (Reel)

Designed In: Millimeters
RoHS: Yes
Halogen Free: Low-halogen

Electrical
Voltage (max.): 150V (1.00mm and 1.50mm Pitch)
Voltage (max.): 250V AC rms/DC
(2.00mm and 3.00mm Pitch)
Current (max.): 10.0A per circuit
(3.00 mm Pitch/ 2 circuits)
* see more detail at derating table
Contact Resistance(max.): 20 milliohms
Dielectric Withstanding Voltage:
- 500V AC (rms) for 1 minute (1.00 and 1.50mm)
- 800V AC (rms) for 1 minute (2.00 and 3.00mm)

Insulation Resistance(min.): 1000 Megohms

Mechanical
Housing (Positive Lock) Strength (min.):
- 1.00mm Pitch: 5N (0.50kgf)
- 1.50mm Pitch: 10N (1.02kgf)
- 2.00mm Pitch: 19.8N (2.0kgf)
- 3.00mm Pitch: 29.4N (3.0kgf)

Crimp Terminal Retention Force (min.):
- 1.00mm Pitch: 4N
- 1.50mm Pitch: 6.7N
- 2.00mm Pitch: 9.8N
- 3.00mm Pitch: 19.6N

Durability (min.): 30 cycles

Physical
Housing/Header: Polyamide (PA), UL 94V-0, Black
Contact: Copper Alloy
Plating:
- Contact Area — gold
- Solder Tail Area — gold
- Underplating — nickel

Operating Temperature: -40 to +105°C

Pico-Lock Wire-to-Board Connector System ›

SPECIFICATIONS

*Derating table (For electrical specifications)

Notes:

1) Values are for reference only.

2) Current deratings are based on not exceeding 30°C temperature.

3) Temperature rise is measured in barrel area of crimp terminal.

4) PCB trace design can greatly affect temperature rise results.

5) Data is for all circuits powered.

1.00mm Pitch Pico-Lock rated current (max.)

Wire Size (AWG)	Current (A)		
	2-Circuit	4-Circuit	6-Circuit
28	2.5	2.0	1.5
30	2.0	1.5	1.5

2.00mm Pitch Pico-Lock rated current (max.)

Wire Size (AWG)	Current (A)				
	2-Circuit	3-Circuit	4-Circuit	5-Circuit	6-Circuit
20	6.5	5.5	5.5	5.0	5.0
22	5.0	5.0	4.5	4.5	4.0
24	4.5	4.0	3.5	3.5	3.5
26	3.5	3.5	3.0	3.0	3.0

1.50mm Pitch Pico-Lock rated current (max.)

Wire Size (AWG)	Current (A)			
	2-Circuit	4-Circuit	6-Circuit	12-Circuit
24	3.5	3.0	2.5	2.5
26	3.0	2.5	2.0	2.0
28	2.5	2.0	2.0	1.5
30	2.5	2.0	1.5	1.5
32	2.0	1.5	1.5	1.0

3.00mm Pitch Pico-Lock rated current (max.)

Wire Size (AWG)	Current (A)				
	2-Circuit	3-Circuit	4-Circuit	5-Circuit	6-Circuit
16	10.0	9.0		8.0	
18	9.0	8.0		7.5	
20	8.0	7.0		6.0	

ORDERING INFORMATION

Pitch (mm)	Circuit Size	Applicable Wire Gauge (AWG)	Housing	PCB Header
2.00	2 to 6	20 to 26 (Terminal 205342)	205341	205338
1.50	2 to 12	24 to 28 (Terminal 504052-0098)	504051	504050
		30 to 32 (Terminal 504052-0298)		
1.00	2 to 6	28 to 30 (Terminal 503765)	503764	503763
3.00	2 to 6	16 to 20 (Terminal 2211135100)	221114	221115

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