NANO-FIT CONNECTORS

Adding: 20 AWG for UL1569/1007 to the Nano-Fit Connector Family

The typical signal wire type used in HVAC and appliance applications is UL 1569/1007. Nano-Fit Connectors now offer a 20 AWG UL1569/1007 option, providing a more economical wire choice for customers who are designing for high volume and low cost. These connectors also comply with voltage ratings HVAC/appliance manufacturers require for their designs.

NPI EXTENSION

MAY 2025

Nano-Fit Connectors

Molex Nano-Fit Connectors provide a compact, high-performance solution for miniature power applications. Designed for space efficiency, these connectors ensure superior electrical integrity and reliability through isolated contacts that help prevent contact stubbing. With high-current-carrying capabilities, Nano-Fit Connectors offer various configurations and color-coding/ keying options. These connectors are ideal for precise, space-constrained electronic designs and deliver the highest current compared to similar sized connectors.

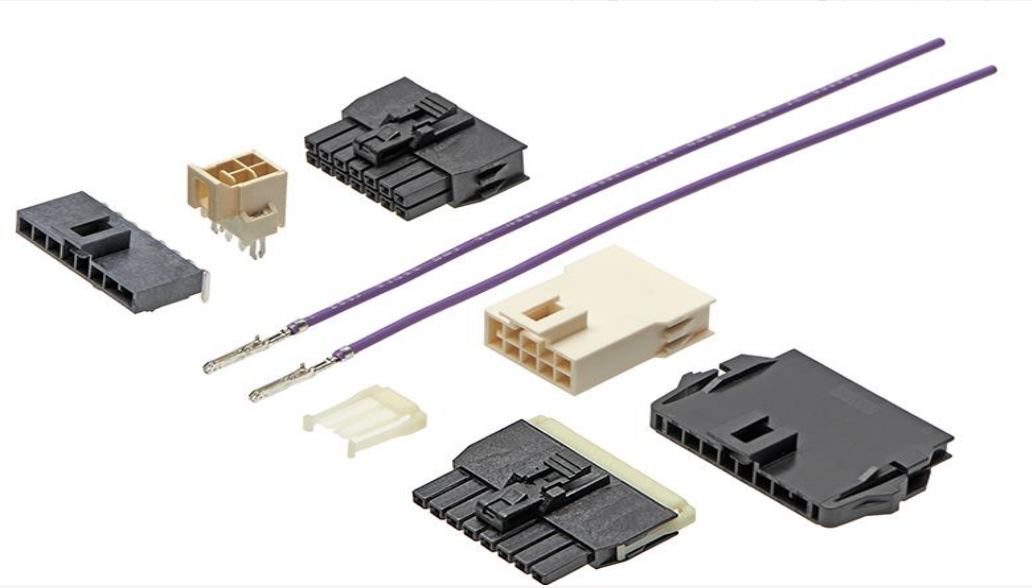
Key Product Information

Category: Wire-to-Wire, Wire-to-Board Connectors

Current: 8.0A (max.)

Pitch: 2.50mm

Wire Gauge: 26 to 20 AWG



View Product Landing Page

Download Datasheet

Series	
226354	Nano-Fit Receptacle Single Row (20 AWG UL 1569/1007)
226362	Nano-Fit Receptacle Dual Row (20 AWG UL 1569/1007; tin, gold flash and gold)
226471	Nano-Fit Terminals (20AWG UL 1569/1007)
217140	Nano-Fit CPA Retainer
105300	Nano-Fit Female Terminal (tin, gold flash and gold)
105405	Nano-Fit Right-Angle Header
105310	Nano-Fit Vertical Header
105429	Nano-Fit SMT Vertical Header
105325	Nano-Fit Terminal Position Assurance TPA
105308	Nano-Fit Receptacle Housing, TPA Capable

Vital Product Information

Nano-Fit Connectors

What makes this product different from the competition?

Designed as a small package with 8.0A current rating, Nano-Fit Connectors are an ideal solution for power and signal applications. These connectors offer a CPA option with ultra-low mating force terminals in multiple plating options including tin, gold and gold flash.

How does this product/solution create value for our customers?

Quality of connector assembly represents one of the most critical aspects of electrical performance and continues to be a top priority in production with assembly teams. Nano-Fit Connectors offer an array of versatile connector solutions, specifically engineered and available to address cross-mating and mis-mating connector issues. These blind-mating, color- and mechanically-keyed connectors help prevent costly connector mating mishaps, simplifying assembly in ways that can accelerate production and enhance efficiency.

What is the Molex advantage?

Due to Molex's global manufacturing capability and robust engineering support, Molex Nano-Fit connectors offer compact, reliable connections with high current capacity, flexible configurations, and secure mating, ideal for precise, space-constrained electronic designs.

Markets and Applications

Nano-Fit Connectors

Refrigerators

EV Chargers

APPLIANCES

- Dishwashers
- Dryers
- Freezers
- Microwave ovens
- Ovens
- Refrigerators
- Washing machines
- Water heaters/boilers
- Vacuum cleaners

AUTOMOTIVE

- Batteries
- EV chargers
- Infotainment systems
- Interior lighting and navigation
- Mirrors
- Mopeds

Markets and Applications

Nano-Fit Connectors

Servers

HVAC Units

DATACOM

- Auxiliary power devices
- Compute boards
- Graphics processing units (GPUs)
- GPU trays
- Servers
- Switches

HVAC

- Commercial HVAC units
- Residential HVAC units

Product Advantages and Features

Nano-Fit Connectors

Allows same-circuit, multiple-connector use with virtually no chance of cross mating; provides visual indication of the properly mated connector, for faster assembly

There are multiple mechanical keying and color-coded options for operational safety and efficient assembly.

Reduces operator fatigue and improves assembly compliance for high-circuit applications

Nano-Fit Connectors have an ultra-low mate force terminal.

Ensures mated connector assemblies will not accidentally disengage

The TPA feature reduces assembly errors and ensures terminals are fully seated and will not back out. These connectors also offer a CPA option for additional locking security.

Enables operators to mate connectors in hard-to-reach areas without a visual

Nano-Fit Connectors have a BMI option.

Key Specifications	
Pitch	2.50mm
Current	8.0A
Voltage	250V
Industry Standards	Glow Wire capable
Operating Temperatures*	-40 to +125°C

*Operating temperature (including T-rise from applied current) is rated -40 to 125°C. Field temperatures and field life: tested per EIA-364-1000.01 to meet field temperature of 65°C for 10 years life. The rated temperature of wire needs to be considered for the operating temperature application for example, the rated temperature of UL 1015 wire is 105°C and cannot be used at an operating temperature of 125°C.

Product Advantages and Features Cont.

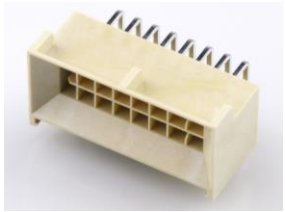
Nano-Fit Connectors

Protects against potential damage of terminals during handling and mating

These connectors have fully isolated terminals.

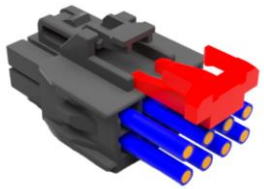
Meets USCAR2 specifications for shock and vibration

Nano-Fit Connectors are suitable for use in automotive applications (not suitable for safety or on-engine applications).



Offers design flexibility and ensures proper fitting in the terminated wire housing

The 20 AWG with UL 1569/1007 complies with voltage ratings HVAC/appliance manufacturers need to meet within their designs.



Product Specifications

Nano-Fit Connectors

Reference Information

Packaging
  Terminals—Reel
  Headers—Tray, embossed tape and reel
  Receptacles—Bag
UL File No: E29179
CSA File No: LR19980
Mates with: Nano-Fit Connectors and receptacles only—no competitive cross
Use with: Nano-Fit terminals and TPA retainers only—no competitive cross
Terminal Used: Reel
Designed In: Millimeters
RoHS: Yes
Halogen Free: Yes, select PNs
Glow Wire Capable: Yes

Electrical

Voltage (Max): 250V
Current (Max): 8.0A
Contact Resistance: 10 milliohms change over life
Dielectric Withstanding Voltage: 1,500V
Insulation Resistance: 1,000 Megohms

Mechanical

Contact Insertion Force: 2.5N
Contact Retention to Housing: 27N
Insertion Force to PCB: 5N
Mating Force: 3N
Unmating Force: 3N
Cycles: 20 cycles (Tin), 50 cycles (Gold)

Physical

Housing:
  Receptacle: Nylon UL 94V-0
  Header: LCP UL 94V-0
Contact: High-Conductivity Copper
Plating:
  Contact Area — 0.38 Tin or 381µ (15µ") Gold or 762µ 0.76 (30µ") Gold
Solder Tail Area — Tin
Underplating — Nickel
PCB Thickness: 1.60 and 2.40mm
Operating Temperatures: -40 to +125°C

Additional Resources	
Web Overview Page	https://www.molex.com/en-us/products/connectors/wire-to-board-connectors/nano-fit-connectors
Datasheet	987651-1223.pdf
Training Presentation	Nano-Fit Connectors.pdf
Global Product Manager	Jullian Ladron de Guevara, PSBU, CCS

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creating connections for life

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