Achieve 50% space savings over traditional USCAR 0.64mm connectors with Molex's unsealed miniature Mini50™ single-row connection system, with smaller terminals to fit more low-current electrical circuits in interior, unsealed, transportation-vehicle environmentss

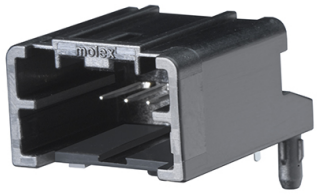
The Mini50™ unsealed, wire-to-board connection system offers customers reduced package sizes compared to conventional 0.64mm connection systems, with applied cost savings and enhanced reliability.

Mini50 connectors provide reduced overall harness weight and cost savings by allowing wire-harness customers to crimp and process smaller wire gauges versus traditional 0.64mm terminal systems. Current configurations are available in single-row, 4- and 8-circuit versions. A dual-row, 12-circuit version is planned.

For more information visit: www.molex.com/link/mini50.html.

Mini50™ Unsealed Connector System

34791 Single-Row Receptacles
34792 Single-Row, Vertical Headers
34793 Single-Row, Right-Angle Headers
560023 CTX50 Terminals



Mini50™ 4-Circuit Right-Angle Header (Series 34793)

Mini50™ Single-Row Receptacle (Series 34791)

FEATURES AND BENEFITS

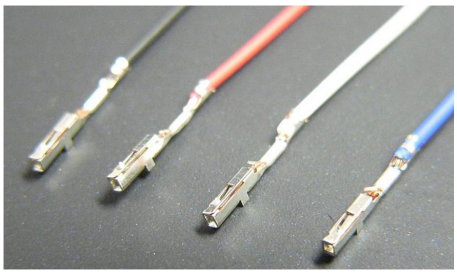
- Reduced package size is approximately 50% smaller than USCAR 0.64mm (.025") unsealed connection systems
- Orientation features are molded into the header and either vertical or right-angle orientations are possible, providing wire-routing and module design flexibility and retain the header to the PCB during the soldering process
- Board alignment and retention features simplify header PCB placement and retain header to PCB during soldering operation(s) and protect soldering joints during connector mating and unmating
- High-temperature thermoplastic housings withstand infrared (IR) and wave lead-free solder processing per ES-40000-5013 Molex specification, maximum temperature +260°C
- Female terminal wire grips for wire-size reduction and weight, space and cost savings
- Three polarization options provide three discrete mechanical, visual and colored polarizations
- Independent secondary lock (ISL) terminal-retention feature is molded into the receptacle housing as one piece for applied cost savings
- CTX50 terminal wire grip design offers harness manufacturers' the ability to reduce wire gauge sizes while maintaining retention strength

APPLICATIONS

- Automotive and Commercial Transportation
  - Headliners
  - Clusters / Navigation
  - Radios
  - Cameras / Sensors
  - HVAC
  - Switches
  - Lighting
  - Mirrors
  - Steering Wheel Column

FEMALE TERMINAL WIRE RANGE

Wire Size	0.08 mm² (28 AWG)	0.13 mm² (26 AWG)	0.22 mm² (24 AWG)	0.35 mm² (22 AWG)
Wire Name	CHFUS	CHFUS	CHFUS	CHFUS
Outer Diameter of wire insulation	0.76mm max.	0.89mm max.	1.00mm max.	1.20mm max.



molex

Reference Information

Packaging:
Housings – Bulk pack
Terminals – Reel and loose piece

Mates With:
Receptacles Series: 34791
Vertical Headers Series: 34792
Right-Angle Header Series: 34793

Use With Terminals:
Female Series 560023

Designed in: Millimeters

Electrical

Voltage (max.): 500V

Current (max.): 3.0A

Contact Resistance: 20 Milliohms max.

Dielectric Withstanding Voltage:
1500V AC min.

Isolation Resistance: 100 Megohms min.

Physical

Header Housings:
High Temperature Thermoplastic

Receptacle Housings:
High Temperature Thermoplastic

Contact: Copper (Cu) Alloy

Plating:
Contact Area — Tin (Sn)
Underplating — Nickel (Ni)

Wire Gauge:
0.35 to 0.08mm2 (22 to 28 AWG)

Insulation Diameter:
1.40mm to 0.76mm (.055 to .030")

Operating Temperature: -40 to +105°C

Electrical / Mechanical

Over-Current Loading (TSC1000G):
No Degradation

Durability: 20 milliohms max.
Tin (Sn) Plating – 10 Cycles

High-Temperature Exposure,
1008 hours (USCAR-2, GMW3191,
TSC1000G):
Post test resistance –
20 Milliohms @ 500V DC max.
Isolation resistance –
100 Megaohms max.
Connector Retention Force = 60N min

Temp / Humidity Cycling, 240 hours
(USCAR-2, GMW3191, TSC1000G):
Post test resistance –
20 Milliohms @ 500V DC max.
Isolation resistance –
100 Megohms max.
Connector Retention Force = 60N max
Terminal Retention = 30N min

Thermal Shock; class 2, 300& 600
cycles (USCAR-2, TSC1000G):
Post test resistance –
20 Milliohms @ 500V DC max.
Isolation resistance –
100 Megohms max.
Connector Retention Force = 60N max
Terminal Retention = 30N min.

Sinusodial Vibration / Mechanical Shock
(Not Coupled to Engine):
(USCAR-2, VW 75174):
Post test resistance –
20 Milliohms @ 500V DC max.

Random Vibration / Mechanical Shock
(Not Coupled to Engine):
(USCAR-2, VW 75174):
Post test resistance –
20 Milliohms @ 500V DC max.

Random Vibration with Thermal Cycling/
Mechanical Shock (Not Coupled to
Engine): (USCAR-2, GMW3191,
RSA 36-05-019)
Random vibration with Thermal Cycling:
Post test resistance –
20 Milliohms @ 500V DC max.
Connector Retention Force = 60N min.

Random Vibration with High Temp
Exposure / Mechanical Shock Not
Coupled to Engine): (USCAR-2,
GMW3191, RSA 36-05-019)
Random vibration with Thermal Cycling:
Post test resistance –
20 Milliohms @ 500V DC max.
Connector Retention Force = 60N min.

Corrosion Resistance: (USCAR-2,
GMW3191, RSA 36-05-019):
Post test resistance –
20 Milliohms @ 500V DC max.
Isolation resistance –
100 Megohms max Connector
Connector Retention Force = 60N min.
Terminal Retention = 30N min.

Mini50™ Unsealed Connector System

Chemical Resistance: (USCAR-2,
GMW3191, RSA 36-05-019):
Post test resistance –
20 Milliohms @ 500V DC max.
Isolation resistance –
100 Megohms max Connector
Terminal Retention = 30N min.

Current Capability:
(USCAR-2, Fiat 7-Z8260):
Temperature rise over ambient < 55C
Post test resistance –
20 Milliohms @ 500V DC max.
Terminal Retention = 30N min.

Terminal – Connector Insertion Force
(USCAR-2, GMW3191):
Insertion Force = 5N max
Primary Retention Force = 10N min
Secondary Retention Force = 50N min

Mating Force (USCAR-2, TSC1000G):
22N (4.95 lb) max.

Unmating Force (USCAR-2,
TSC1000G) 22N (4.95 lb) max.

Connector Drop Test:
(USCAR-2, RSA 36-05-019):
Post test visual inspection

Connector Pry Resistance:
(USCAR-2, 24012NDS01):
Post test resistance –
20 Milliohms @ 500V DC max.

Repetitive Mating / Unmating:
(USCAR-2, 24012NDS01):
Post test resistance –
30 Milliohms @ 500V DC max.

Polarization Feature Effectiveness
(USCAR-2): min = 3 * Avg mate force

Header Pin Retention:
15N (3.37 lb) min.

Solderability Requirements:
(SMES-152):
Dip Coat Method –
min 95% coverage

Connector Heat Resistance:
(ES-40000-5013):
Lead-free IR reflow processing =
3 cycles, max temperature 260C°
Post test visual and dimensional
inspection

ORDERING INFORMATION

Mini50™ Unsealed Connector System

Standard Receptacles

Order No.	Rows	Circuit Size	Clip Slot
34791-004†	1	4	Not Available
34791-008†		8	

†Denotes polarization and housing color:
0 = A, Black 1 = B, Light Gray 2 = C, Brown 3 = D, Green

Standard Vertical Headers

Order No.	Rows	Circuit Size
34792-004†	1	4
34792-008†		8

†Denotes polarization and housing color:
0 = A, Black 1 = B, Light Gray 2 = C, Brown 3 = D, Green

Standard Right-Angle Headers

Order No.	Rows	Circuit Size
34793-004†	1	4
34793-008†		8

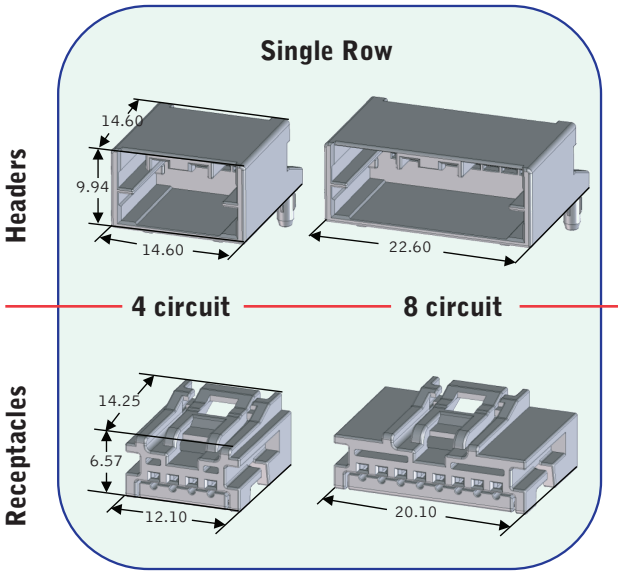
†Denotes polarization and housing color:
0 = A, Black 1 = B, Light Gray 2 = C, Brown

CTX50 Terminals

Order No.	Plating	Wire Gauge (mm²)	Wound Direction/ Payoff Direction
560023-0421	Tin	0.22 - 0.35	D/Left
560023-0422		0.08 - 0.13	
560023-0423		0.22 - 0.35	B/Right
560023-0424		0.08 - 0.13	

†Denotes polarization and housing color:
0 = A, Black 1 = B, Light Gray 2 = C, Brown 3 = D, Green

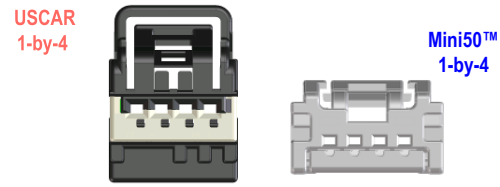
Mini50 PRODUCT FAMILY:
All dimensions shown in Millimeters



- Headers available in vertical or right-angle configurations (right angle shown)
- Each circuit size will have 4 polarization options (black, gray, brown and green)
- Dimensions subject to change; latest revision customer models available upon request

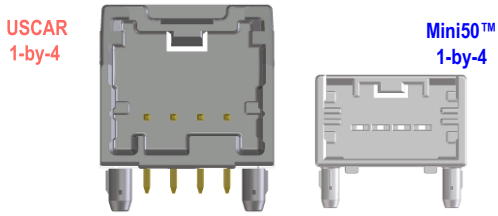
Mini50 PACKAGE SIZE REQUIREMENTS
Comparison between Mini50™ 1-by-4 and 0.64mm (.025") USCAR 1-by-4 footprints

Female Receptacles



Approximate 51% reduction in frontal area for 4-circuit receptacle

Male Right-Angle Receptacles



Approximate 50% reduction in frontal area for 4-circuit right-angle header

Order No. 987650-5442 Rev. 1
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