

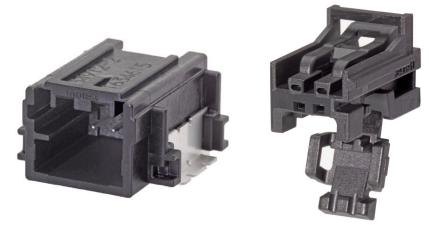
Mini50™ Unsealed Connector System



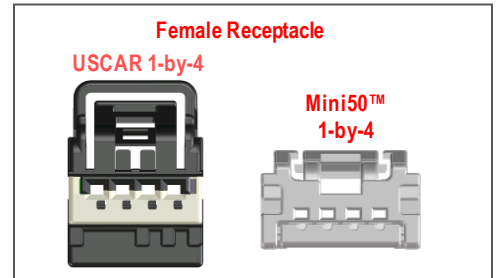
Delivering 50% space savings over traditional USCAR 0.64mm connectors with smaller terminals to fit more signals into vehicle interiors, the Mini50™ Unsealed Connector System is approved as the industry's only USCAR 050 interface

Features and Benefits

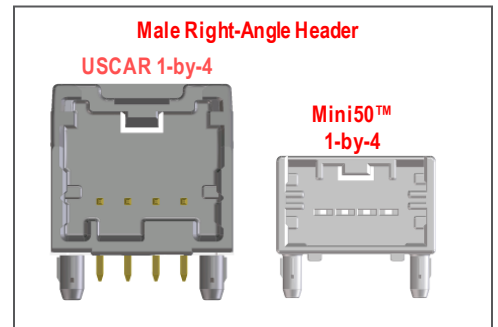
| | |
|--|---|
| Addition of 2 circuit-size SMT headers and receptacles | Delivers the only tow-circuit connector with a 0.50mm terminal interface in the industry. Tested to full USCAR specifications. Enhances design flexibility |
| Designed and tested to USCAR 050 specifications | Approved as the industry's only USCAR 050 approved interface from 4 to 24 circuits. Larger circuit versions also comply with USCAR specifications |
| 50% smaller than USCAR 0.64mm unsealed interfaces | Minimizes PCB footprint for design flexibility and space saving |
| Independent secondary lock (ISL) terminal-retention feature | Secures terminal inside the housing; one piece design for applied cost savings |
| Orientation features molded into the header | Provides wire-routing and module-design flexibility for both vertical and right-angle connectors. Retains the header to the PCB during the soldering process |
| Board alignment and retention features | Simplifies header placement on the PCB and retains the header to the PCB during soldering operation(s). Protects adhesive joints during connector mating and unmating |
| High-temperature thermoplastic housings | Withstands infrared (IR) and wave lead-free solder processing per ES-40000-5013 Molex specification, up to a maximum temperature of +260oC |
| Female terminal wire grips for wires 0.35mm ² and smaller | Reduces wire size, and provides weight, space, and cost savings versus 0.64mm interfaces |
| Three polarization options | Enables limited customization and enforces like-to-like mating via three discrete mechanical, visual, and colored polarizations |
| CTX50 terminal wire grip design | Offers harness manufacturers the ability to reduce wire gauge sizes while maintaining retention strength |
| Connector position assurance (CPA) latch available | Prevents accidental un-mating |



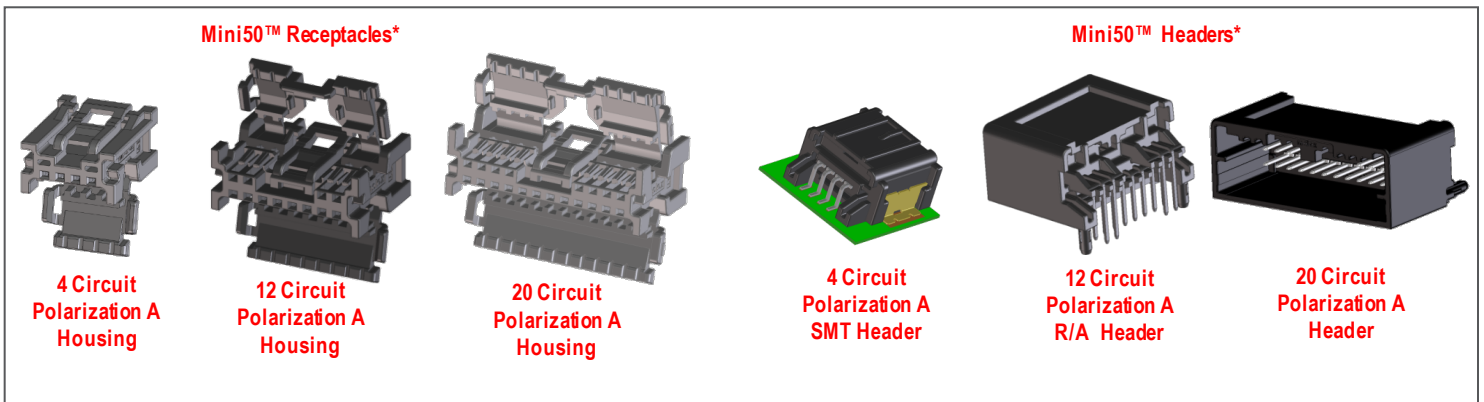
Mini50™ Two-Circuit SMT Header and Receptacle



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



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



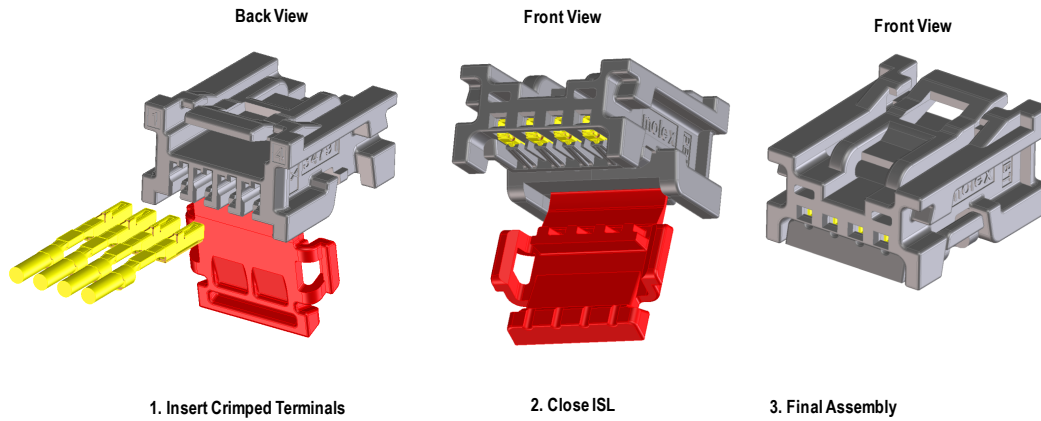
*8, 16, 24, 34 and 38 Circuit Sizes Also Available

Mini50™ Unsealed Connector System

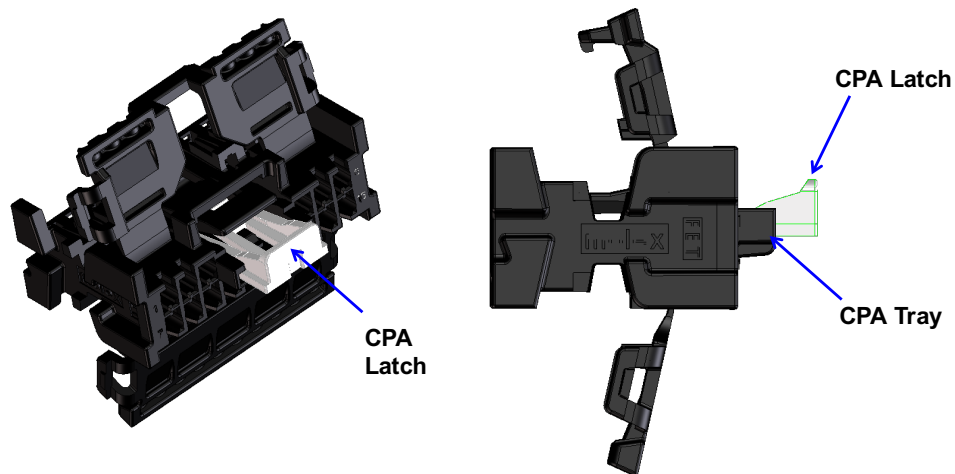


Mini50 Harness Assembly Complexity Reduction:

The independent secondary lock (ISL) is molded as part of the housing, reducing the number of components and cost.

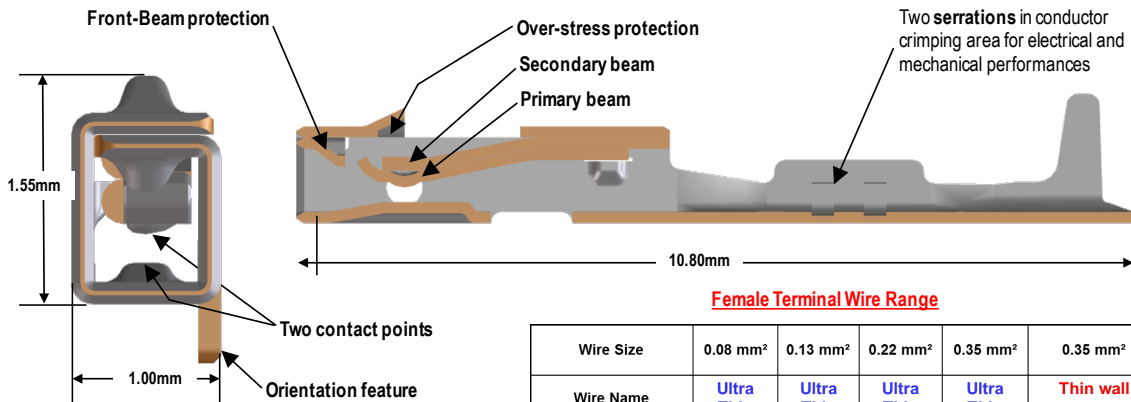


Product Improvements - Optional CPA Latch Addition - this is available on all sizes from 4 to 24 circuits



CPA Latch and supporting features added to bridged receptacles

CTX50 Female Receptacle Terminal: All dimensions shown in millimeters



Female Terminal Wire Range

| Wire Size | 0.08 mm ² | 0.13 mm ² | 0.22 mm ² | 0.35 mm ² | 0.35 mm ² |
|-----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Wire Name | Ultra Thin | Ultra Thin | Ultra Thin | Ultra Thin | Thin wall |
| Outer Diameter of wire insulation | 0.76 mm max | 0.89 mm max | 1.0 mm max | 1.2 mm max | 1.4 mm max New |
| Recommended Grip Size | Grip S | | Grip M | | Grip L |

Mini50™ Unsealed Connector System

molex®

USCAR 050 Specifications

Reference Information

Packaging:

- Housings – Bulk pack
- Terminals – Reel and loose piece

Mates With:

- Receptacles Series: 34791, 34824
- Vertical Headers Series: 34792, 34824, 34825
- Right-Angle Header Series: 34793, 34912, 34826, 34897

Use With Terminals:

- Female Series 560023

Designed in: Millimeters

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

Voltage (max.): 500V

Current (max.): 4.0A

Contact Resistance (max.): 20 Milliohms

Dielectric Withstanding Voltage (min.): 1500V AC

Isolation Resistance (min.): 100 Megohms

Electrical / Mechanical

Over-Current Loading (TSC1000G): No Degradation

Durability (max.): 20 milliohms

Tin (Sn) Plating – 10 Cycles

High-Temperature Exposure , 1008 hours (USCAR-2 , GMW3191, TSC1000G):

Post test resistance (max.) – 20 Milliohms @ 500V DC

Isolation resistance (max.) – 100 Megohms

Connector Retention Force (min.) = 60N

Temp / Humidity Cycling, 240 hours (USCAR-2 , GMW3191, TSC1000G):

Post test resistance (max.) – 20 Milliohms @ 500V DC

Isolation resistance (max.) – 100 Megohms

Connector Retention Force (max) = 60N

Terminal Retention (min.) = 30N

Thermal Shock; class 2, 300& 600 cycles (USCAR-2, TSC1000G):

Post test resistance (max.) – 20 Milliohms @ 500V DC

Isolation resistance (max.) – 100 Megohms

Connector Retention Force (min.) = 60N

Terminal Retention (min.) = 30N

Sinusoidal Vibration / Mechanical Shock (Not Coupled to Engine): (USCAR-2 , VW 75174):

Post test resistance (max.) – 20 Milliohms @ 500V DC

Terminal Retention (min.) = 30N

Chemical Resistance: (USCAR-2 , GMW3191, RSA 36-05-019) :

Post test resistance (max.) – 20 Milliohms @ 500V DC

Isolation resistance (max.) – 100 Megohms

Connector Retention Force (min.) = 60N

Terminal Retention (min.) = 30N

Current Capability: (USCAR-2 , Fiat 7-Z8260):

Temperature rise over ambient < 55C

Post test resistance (max.) – 20 Milliohms @ 500V DC

Terminal Retention (min.) = 30N

Terminal – Connector Insertion Force (USCAR-2, GMW3191):

Insertion Force (max.) = 5N

Primary Retention Force (min.) = 10N

Secondary Retention Force (min.) = 50N

Electrical / Mechanical

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

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

Connector Drop Test: (USCAR-2 , RSA 36-05-019) :

Post test visual inspection

Connector Pry Resistance: (USCAR-2 , 24012NDS01) :

Post test resistance (max.) – 20 Milliohms @ 500V DC

Repetitive Mating / Unmating : (USCAR-2 , 24012NDS01):

Post test resistance (max.) – 30 Milliohms @ 500V DC

Polarization Feature Effectiveness (USCAR-2):

min = 3* avg. mate force

Header Pin Retention (min.): 15N

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 +260°C Random Vibration /

Mechanical Shock (Not Coupled to Engine):

(USCAR-2 , VW 75174):

Post test resistance (max.) – 20 Milliohms @ 500V DC

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 (max.) – 20 Milliohms @ 500V DC

Connector Retention Force (min.) = 60N

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 (max.) – 20 Milliohms @ 500V DC

Connector Retention Force (min.) = 60N

Corrosion Resistance: (USCAR-2 , GMW3191, RSA

36-05-019) :

Post test resistance (max.) – 20 Milliohms @ 500V DC

Isolation resistance (max.) – 100 Megohms

Connector Retention Force (min.) = 60N

Terminal Retention (min.) = 30N

Applications

Automotive and Commercial Vehicle Transportation

- Headliners
- Clusters and Navigation
- Radios
- Cameras and Sensors
- HVAC
- Switches
- Lighting
- Mirrors



Mirrors/Cameras



Cluster/Navigation



Interior Lighting



HVAC

Mini50™ Unsealed Connector System



Ordering Information

Receptacles

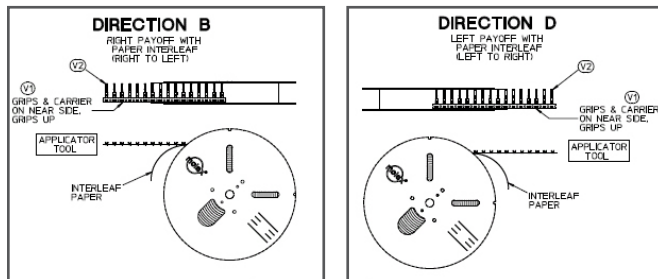
| Series No. | Component | Row | Circuit Sizes |
|-----------------------|-------------|--------|-------------------|
| 34791 | Receptacles | Single | 2, 4 and 8 |
| 34824 | | Dual | 12, 16, 20 and 24 |
| 34959 | | Hybrid | 34 and 38 |

CTX50 Terminals

| Series No. | Plating | Wire Gauge (mm ²) | Wound Direction / Payoff Direction |
|------------------------|-------------|-------------------------------|--|
| 560023 | Receptacles | 0.08 to 0.13 0.22 to 0.35 | D=Left; B=Right *D-wound parts are maintained in sample plant |

Note: Reference PS-34791-000 for all validated wire types.

Pay-Off Direction



Headers

| Series No. | Component | Row | Circuit Sizes | Termination Style | Circuit Sizes | |
|-----------------------|-----------------|--------|---------------|-------------------|---------------|------------|
| 34792 | Headers | Single | Vertical | Through-Hole | 4 and 8 | |
| 34793 | | | Right Angle | | | |
| 34912 | | Dual | Vertical | Through-Hole | SMT | 2, 4 and 8 |
| 34825 | | | | | | |
| 34826 | | | Right Angle | | | |
| 34897 | | | | | | |
| 34958 | | Hybrid | Vertical | Press-Fit | SMT | 34 and 38 |
| 34961 | | | | | | |
| 34960 | Two-Bay Stacked | | | | | |

www.molex.com/link/mini50.html