Mini50 Unsealed Connector System

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Mini50 Gen II Unsealed Connectors provide improved reliability with features such as a 4-sided cavity for better terminal alignment and increased primary lock retention, a hinged independent secondary lock (ISL), reduced misalignment angles and better scoop proofing, along with an improved connector position assurance (CPA) design

Mini50 Unsealed Gen II Receptacles with CPA (Front)

Mini50 Unsealed Gen II Receptacles with CPA (Back)

Features and Advantages
Gen II Unsealed Connectors

Molded-in service hole with self-guided service tool

- Provides easy serviceability
- Prevents risk of lock finger overstress
- Does not require 180˚ polarization

Optimized 4-sided cavity

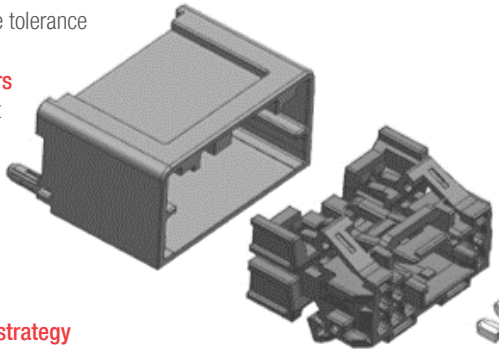
- Provides better terminal alignment
- Accommodates larger crimp angle tolerance

Mates with current Mini50 Headers

Easy and cost-effective to implement

Reduced misalignment angles and improved scoop proofing

Supports easy mating. Mitigates damage due to mis-mating

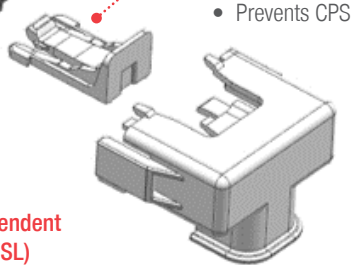


Reduced misalignment angles and improved scoop proofing

Supports easy mating. Mitigates damage due to mis-mating

The Gen II (optional) CPA has larger push area and stronger beam than Gen I CPA

- Improves ergonomics
- Prevents CPS from being seated during shipment



Improved terminal servicing strategy

- New CTX50 cavity includes molded-in service hole
- Self guided service tool prevents risk of lock finger overstress
- Symmetric service tool design does not require 180°polarization

Accepts existing CTX50 Receptacle Terminal

Easy to implement with current high-performing components

25˚ hinged independent secondary lock (ISL)

- Allows use of higher glass content, which results in a stronger resin and increased secondary lock retention
- Eliminates risk of ISL bowing

Optional wire dress cover available

Creates flexibility in wire-routing design with both 0˚ and 180˚ orientations

Markets and Applications

Automotive and Commercial Vehicle

- Headliners
- Clusters and navigation systems
- Radios
- Cameras and sensors
- HVAC systems
- Switches
- Lighting
- Mirrors

Mirror and Interior Lighting

Panels / Navigation

HVAC

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Mini50 Gen II SPECIFICATIONS

REFERENCE INFORMATION

Packaging:
- Housings — Bulk pack
- Terminals — Reel and loose piece

Mates With:
- Receptacles Series: 34791, 34824

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

Use With Terminals:
- Female Series 560023

Designed in: Millimeters

PHYSICAL

Header Housings: PA66 GF50 Reinforced
Receptacle Housings: PBT GF7.5 Reinforced
Contact: Copper (Cu) Alloy
Plating:
- Contact Area — Tin (Sn)
- Underplating — Nickel (Ni)

Wire Gauge: 0.35 to 0.13mm2 (22 to 26 AWG)
Insulation Diameter: 1.40mm to 0.89mm (.055 to .035")
Operating Temperature: -40 to +100°C

ELECTRICAL

Voltage (max.): 14V DC
Current (max.): Dependent on connector size, terminal, ambient temperature and related factors. Actual maximum current rating is application dependent and should be evaluated for each use.
Contact Resistance (max.): 20 milliohms
Dielectric Withstanding Voltage (min.): 1500V AC
Isolation Resistance (min.): 100 Megohms

ELECTRICAL/MECHANICAL

Over-Current Loading: No Degradation
Durability (max.): 20 milliohms
- Tin (Sn) Plating — Up to 10 mating cycles
- Gold (Au) Plating — Over 10 mating cycles

High-Temperature Exposure, 1008 hours (USCAR-2, GMW3191):
- Post-Test Resistance (max.) — 20 milliohms @ 500V DC
- Isolation Resistance (max.) — 100 Megohms
- Connector Retention Force (min.) - 60N
- Terminal Retention Force (min.) – 50N

Temp / Humidity Cycling, 240 hours (USCAR-2, GMW3191):
- Post test resistance (max.) — 20 milliohms @ 500V DC
- Isolation resistance (max.) — 100 Megohms
- Connector Retention Force (max.) — 60N
- Terminal Retention (min.) — 50N

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

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

Terminal — Connector Insertion Force (USCAR-2, GMW3191):
- Insertion Force (max.) — 5N

ELECTRICAL/MECHANICAL

Primary Retention Force (min.): 10N
Secondary Retention Force (min.): 40N
Mating Force (USCAR-2) (max.): 75N
Unmating Force (USCAR-2) (max.): 75N
Connector Drop Test (USCAR-2 , RSA 36-05-019):
- Post-test visual inspection

Connector Pry Resistance: (USCAR-2):
- Post-test resistance (max.) — 20 milliohms @ 500V DC

Repetitive Mating / Unmating (USCAR-2):
- 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
- Connector Retention Force (min.) — 60N
- Terminal Retention (min.) — 30N

www.molex.com/link/mini50.html

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