iBridge Ultra
2 mm Cable to Board Connectors

ED. 08 | 05.2020
Catalog E 074683
The iBridge Ultra connector family offers extensive Cable-to-Board solutions. It is designed for applications which need reliable and robust connection systems. A TPA (Terminal Position Assurance) retainer serves as a secondary lock for the female contact in the housing. The secondary lock makes the connections particularly resistant against strong vibrations, such as those that occur in an automotive application. iBridge Ultra is not limited to automotive and is a great choice for applications in industrial automation, telecommunications and healthcare.

iBridge Ultra’s compact design supports all applications between control units and local components such as sensors, motors, switches, fans, heating elements, fuses or LEDs.

- current rating up to 8 A per contact
- compact due to a pitch of 2 mm
- different numbers of pins available
- crimp contacts for AWG 22 and AWG 24
- secondary locking of the crimp contacts in the housing (TPA)
- polarity reversal protection design
- double-sided interlocking
- specifications are tested according to requirements of USCAR-2 and USCAR-21
# TECHNICAL DETAILS

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Pitch</strong></td>
<td>2 mm</td>
</tr>
<tr>
<td><strong>No. of Pins</strong></td>
<td>2, 3, 4, 5, 6, 8, 10, 12 possible</td>
</tr>
<tr>
<td><strong>Current rating per contact</strong></td>
<td>up to 8 A (depends on cable)</td>
</tr>
</tbody>
</table>
| **Termination** | Male connector with SMT or DIP solder termination  
                             Female connector with crimp termination |
| **Cable**   | Discrete wire AWG 22 and AWG 24    |
| **Variants** | Vertical male connector  
                             Right angle male connector  
                             Female connector with 180° cable outlet |
iBridge Ultra

FEATURES

DOUBLE LOCKING SYSTEM

Includes TPA (a retainer) feature which serves as a secondary lock to increase reliability by safe-guarding against accidental wire pulling and limits female contact movement in housing cavity, ultimately enhancing performance in high vibration and mechanical shock environments.

POLARIZATION AND LOCKING FEATURE

Polarization keys on female

Polarization slot on male

Polarization feature for error proof mating

Latches on both sides of female connectors provide positive locking and easy handling.
iBridge Ultra

FEATURES

CLOSE BOX AND DUAL BEAM FEMALE CONTACT

Close box female contact design make sure male contact in secure position. Dual contact beam compensates misalignment mating tolerance.

STAMPED MALE CONTACTS

Stamped contacts without post bending ensure robustness, coplanarity and current carrying efficiency.
**iBridge Ultra**

**FEATURES**

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**PCB RETENTION AND ERROR PROOF**

2 location pegs round and oval - for accurate placement on PCB

Long locating pegs for vertical male - enhance retention force

Metal soldering clip for SMT - provides PCB retention and strain relief for contacts
### TECHNICAL DATA

<table>
<thead>
<tr>
<th>Description</th>
<th>Standard</th>
<th>Male Connector (DIP, SMT)</th>
<th>Female Connector (Crimp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range (USCAR)</td>
<td>USCAR-2</td>
<td>-40 – +100 °C, 1008hrs at 100 °C (USCAR-2 T2)</td>
<td></td>
</tr>
<tr>
<td>Current rating per contact</td>
<td>IEC60512 test 5b</td>
<td>up to 8 A (depends on cable)</td>
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<tr>
<td>Air and creepage distance</td>
<td></td>
<td>0.7 mm</td>
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<tr>
<td>Operating voltage</td>
<td>IEC 60664</td>
<td>300 V r.m.s. (pollution degree 1), 95 V r.m.s. (pollution degree 2)</td>
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<tr>
<td>Mechanical operation</td>
<td>IEC 60512 test 9a</td>
<td>&gt; 20 mating cycles</td>
<td></td>
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</table>

#### Process Conditions

- **Hand soldering** temperature max.
  - IEC 60068-2-20
  - 3.5 s at 350 °C

- **DIP soldering** temperature max.
  - JEDEC J-STD-002
  - 10 s at 260 °C

- **Reflow soldering** temperature max.
  - JEDEC J-STD-002
  - 20 - 40 s at 260 °C

- **Coplanarity**
  - < 0.1 mm

#### Housing Material

- **Plastic material**
  - LCP natural
  - PA natural

- **Tracking resistance (CTI)**
  - IEC 60112
  - 175 V
  - 600 V

- **UL flame rating**
  - UL
  - 94 V-0

#### Contact Material

- **Base material**
  - Cu alloy

- **Mating area**
  - Sn plating over Ni underplating

- **Termination area**
  - Sn plating over Ni underplating

#### Soldering Bracket Material

- **Base material**
  - Cu alloy

- **Plating**
  - Sn plating over Ni underplating

#### Product Approval

- **Validation testing**
  - USCAR-2, USCAR-21

- **UL**
  - E472031
iBridge Ultra

VERTICAL MALE CONNECTOR, SMT

PRODUCT SPECIFICATION

- SMT termination
- 2, 3, 4, 5, 6, 8, 10, 12 pins possible
- tape and reel packaging for fully automated assembly process
- for available part numbers please refer to our website

DIMENSIONAL DRAWINGS

<table>
<thead>
<tr>
<th>Mass A</th>
<th>Dim A</th>
<th>Mass B</th>
<th>Dim B</th>
<th>Mass C</th>
<th>Dim C</th>
<th>Mass D</th>
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Layout:
vorgeschlagene Toleranz für PCB Layout    0,05
recommended PCB layout tolerance    0,05

Pin 1
iBridge Ultra

VERTICAL MALE CONNECTOR, DIP

PRODUCT SPECIFICATION

- DIP solder termination
- 2, 3, 4, 5, 6, 8, 10, 12 pins possible
- tube packaging
- for available part numbers please refer to our website

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<table>
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Pin 1

Layout: recommended PCB layout tolerance 0.05 mm
RIGHT ANGLE MALE CONNECTOR, SMT

PRODUCT SPECIFICATION

- SMT termination
- 2, 3, 4, 5, 6, 8, 10, 12 pins possible
- tape and reel packaging for fully automated assembly process
- for available part numbers please refer to our website

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Pin 1: 7.75 ±0.05, 4.3 ±0.1, 0.1

Layout:
vorgeschlagene Toleranz für PCB Layout: 0,05 recommended PCB layout tolerance: 0,05
iBridge Ultra

RIGHT ANGLE MALE CONNECTORS, DIP

PRODUCT SPECIFICATION

- DIP solder termination
- 2, 3, 4, 5, 6, 8, 10, 12 pins possible
- tube packaging
- for available part numbers please refer to our website

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Pinzahl position

Recommended PCB layout tolerance: ±0.05

Catalog E 074683 05/20 Edition 8 www.erni.com
iBridge Ultra

**FEMALE CABLE CONNECTOR**

**PRODUCT SPECIFICATION**

- Cable connector housing and retainer
- 2, 3, 4, 5, 6, 8, 10, 12 pins possible
- 180° cable outlet
- For female crimp contacts
- AWG 22 and AWG 24
- For available part numbers please refer to our website

**DIMENSIONAL DRAWINGS**

**CABLE CONNECTOR HOUSING**

**RETAINER**
iBridge Ultra

FEMALE CRIMP CONTACT

PRODUCT SPECIFICATION

- female crimp contact
- AWG 22 and AWG 24
- Reel packaging
- for available part numbers please refer to our website

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Cable Type</th>
<th>Termination</th>
<th>Packaging</th>
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</thead>
<tbody>
<tr>
<td>Female Contact</td>
<td>AWG 22, 24</td>
<td>Crimp</td>
<td>Reel / 10000 pcs</td>
</tr>
</tbody>
</table>

www.erni.com
**CABLE ASSEMBLIES**

**PRODUCT SPECIFICATION**

- standard cable assemblies
- 2, 3, 4, 5, 6, 8, 10, 12 pins possible
- 180° cable outlet
- female connectors
- cable length 100 mm (200 mm and 300 mm on request)
- AWG 22 and AWG 24
- single- und dual-ended
- for available part numbers please refer to our website

**DIMENSIONAL DRAWINGS**

**Single-Ended**

**Dual-Ended**
Find your correct contact person on erni.com/locations