



**Meeting USB 3.0 High Durability Class standards, SuperSpeed connectors provide reliable connectivity while supporting high-temperature, IR-reflow processes for computer, consumer and car product applications**

Molex's USB 3.0 (also known as SuperSpeed) Type A connectors meet High-Durability Class requirements of 5,000 mating cycles. These USB 3.0 connectors are halogen-free for environmental sustainability and support high, IR reflow temperatures of up to 255°C while maintaining solder mount compatibility. The connectors come in on-board style, top- or reverse-mount, upright and vertical orientations. Dual-stacked versions are available for additional mating requirements.

Molex also offers reverse, mid-mount style (or sink-type) receptacles with contact heights that range from 0.36 to 2.04mm for space-saving and low-profile height applications.

Parts are shipped in selected tape-on-reel or tray packaging.

For more information, visit our website at: [www.molex.com/link/usb3.0.html](http://www.molex.com/link/usb3.0.html).

## Features and Benefits

|                                                                                         |                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Meets High-Durability-Class (5000 mating cycles) requirements of USB 3.0 specifications | Sustains robust, reliable connectivity over high frequencies of mating and unmating                                                                                                     |
| Meets all USB 3.0 specifications                                                        | Provides faster data rates of up to 10 times the theoretical speed of USB 2.0 with improved custom power distribution (that is, ensures devices are sufficiently powered when required) |
| High-temperature, halogen-free plastic material used in housing                         | Withstands IR reflow temperatures of up to 255°C while maintaining solder-mount compatibility in application processes                                                                  |
| A variety of PCB-mount designs in upright, vertical and right-angle orientation         | Gives greater design flexibility and higher degree of design freedom to customers                                                                                                       |
| Wide range of contact heights (from 0.36 to 6.09mm)                                     | For greater vertical space-savings in low-profile and other applications                                                                                                                |
| Standard blue color-coded housings                                                      | Distinguishes USB 3.0 connectors from USB 2.0 versions                                                                                                                                  |

## USB 3.0 Connectors, High Durability Class, Through-hole, Halogen-free

- 48391** Flangeless, Top-Mount (\*C/H: 6.09mm)
- 48393** Flangeless, Top-Mount (C/H: 4.00mm)
- 48405** Flange, Top-Mount (C/H: 4.07mm)
- 48406** Flange, Top-Mount Stacked (\*\*H: 15.50mm)
- 48392** Flange, Reverse, Mid-Mount (C/H: 4.06mm)
- 48394** Flangeless, Reverse, Mid-Mount (C/H: 0.36mm)
- 48395** Flangeless, Reverse, Mid-Mount (C/H: 1.00mm)
- 48397** Flangeless, Reverse, Mid-Mount (C/H: 1.75mm)
- 48398** Flangeless, Reverse, Mid-Mount (C/H: 2.04mm)

## Standard-A Receptacle, Vertical and Upright, Through-hole

- 48408** Flange, Vertical, (H: 15.00mm)
- 48409** Flange, Vertical Stacked (H: 14.88mm)
- 48404** Flange, Upright (H: 13.85mm)



USB 3.0 Connectors

\*C/H – the abbreviated form for “Contact Height” refers to the distance from soldering plane to mating plane of a mated cable-connector combination

\*\*H – the abbreviated form for “Height” as used in the chart refers to the distance from top of connector shell (without flange) to PCB.

### Specifications

#### Reference Information

Packaging:  
Refer to Ordering Information Table  
Mates With:  
USB 3.0 Cable Assemblies  
Designed In: Millimeters  
RoHS: Yes  
Halogen Free: Yes  
Glow Wire Compliant: No

#### Electrical

Voltage (max.): 30V DC/AC  
Current:  
1.8A max. for VBUS and GND  
(Pin 1 and 4 for standard type)  
0.25A min. for all other contacts  
Low Level Contact Resistance (max.):  
30 milliohms for VBUS and  
GND contacts:  
50 milliohms for all other contacts

Dielectric Withstanding Voltage (min.):  
100VAC (RMS)  
Insulation Resistance (min.):  
100 megohms

#### Mechanical

Insertion Force (max.): 35N  
Extraction Force (min.):  
10N (initial); 8N (final)  
Durability (min.):  
5,000 (High Durability Class)

#### Physical

Housing:  
Nylon 9T, UL94V-0, Blue  
(Series 48391, 48392, 48393,  
48394, 48395, 48397, 48398)  
Nylon 9T, UL94-HB, Blue  
(Series 48404, 48405, 48406,  
48408, 48409)

Contact: Copper Alloy  
Shell: Stainless Steel  
Plating:  
Contact Area —  
Refer to Ordering Information  
Table  
Solder Tail Area —  
Matt Tin (Sn) over Nickel (Ni)  
Underplating —  
Nickel (Ni) overall  
Shell: Nickel (Ni) overall  
Recommended PCB Thickness:  
1.20mm  
Operating Temperature:  
-20 to +85°C

### USB 3.0 Connector Family

| On-board, Type A Receptacle                                                                                    |                                                                                                               |                                                                                                               |                                                                                                               |                                                                                                               | Mid-mount, Type A Receptacle                                                                                    |                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Top-mount                                                                                                      |                                                                                                               | Reverse-mount                                                                                                 | Upright                                                                                                       | Vertical                                                                                                      | Reverse-mount                                                                                                   |                                                                                                                 |
| <br>48391<br>(C/H*: 6.09mm) | <br>48405<br>(C/H: 4.07mm) | <br>48392<br>(C/H: 4.06mm) | <br>48404<br>(H*: 13.85mm) | <br>48408<br>(H: 15.00mm) | <br>48394<br>(C/H: 0.36mm) | <br>48397<br>(C/H: 1.75mm) |
| <br>48393<br>(C/H: 4.00mm)  | <br>48406<br>(H: 15.50mm)  |                                                                                                               |                                                                                                               | <br>48409<br>(H: 14.88mm) | <br>48395<br>(C/H: 1.00mm) | <br>48398<br>(C/H: 2.04mm) |

#### USB 3.0 Connectors in a variety of mounting styles and mating orientations

\*C/H – the abbreviated form for “Contact Height” refers to the distance from soldering plane to mating plane of a mated cable-connector combination.

\*\*H – the abbreviated form for “Height” as used in the chart refers to the distance from top of connector shell (without flange) to PCB.

### Unique and Useful Differentiation vs. Similar Molex Product

| Attribute                              | Product and Technical Differences |                                                     |
|----------------------------------------|-----------------------------------|-----------------------------------------------------|
|                                        | USB 2.0 Type A Receptacle         | USB 3.0 Type A Receptacle                           |
| Data Rates                             | High-Speed: 480 Mbps              | SuperSpeed: 5.0 Gbps (10 times faster than USB 2.0) |
| Circuits                               | 4                                 | 9                                                   |
| Current Rating (V Bus and Ground)      | 1.5A                              | 1.8A                                                |
| Housing Color                          | Black, Gray or Natural            | Blue (Pantone 300C)                                 |
| Mating Depth with Reference to Datum A | 8.88 +/-0.20mm                    | 10.15mm (min.)                                      |
| Durability Cycles                      | 1,500                             | 1,500 (Standard); 5,000 (High Durability Class)     |
| Mating Force                           | 35N Max                           |                                                     |
| Unmating Force (Initial)               | 10N Min                           | 10N Min                                             |
| Unmating Force (Final)                 |                                   | 8N Min                                              |
| Backward Compatibility                 | USB 1.1                           | USB 2.0 and 1.1                                     |

## Applications

### Data/Computing

- High-end Computing
- Personal Computers
- Hard/Optical Disk Drives

### Consumer/Home Appliance

- Fitness
- Home Appliances
- Home Entertainment
- Home Office
- Home Security

### Automotive

- Comfort, Infotainment and Driver Assist



High-end Computers



Consumer Appliance and Home Entertainment

**USB 3.0  
Connectors, High  
Durability Class,  
Through-hole,  
Halogen-free**



Car Infotainment and Navigation Systems

## Ordering Information

| Material                   | No. of Ports | Orientation (Connector/Pin position) |                | Mounting Configuration | Flange   | Contact Height* (mm) | Height** (mm)  | Contact Plating Thickness | Soldertail Length | Packaging    |
|----------------------------|--------------|--------------------------------------|----------------|------------------------|----------|----------------------|----------------|---------------------------|-------------------|--------------|
| <a href="#">48391-0003</a> | 1            | Right Angle                          | Standard       | On-board               | No       | 6.09                 | 8.95           | 15u” Gold (Au)            | 1.50mm (.059”)    | Tape-on-reel |
| <a href="#">48391-0004</a> |              |                                      |                |                        |          |                      |                | Gold-flash                |                   |              |
| <a href="#">48392-0003</a> |              |                                      | Reverse        |                        | Yes      | 4.06                 | 6.92           | 15u” Gold (Au)            | 1.10mm (.043”)    |              |
| <a href="#">48392-0004</a> |              |                                      |                |                        |          |                      |                | Gold-flash                |                   |              |
| <a href="#">48393-0003</a> |              |                                      | Standard       | No                     | 4.00     | 6.86                 | 15u” Gold (Au) | 1.50mm (.059”)            |                   |              |
| <a href="#">48393-0004</a> |              |                                      |                |                        |          |                      | Gold-flash     |                           |                   |              |
| <a href="#">48394-0003</a> |              | Mid-mount (aka sink-type)            | 0.36           |                        | 5.72     | 15u” Gold (Au)       | 2.10mm (.083”) |                           |                   |              |
| <a href="#">48394-0004</a> |              |                                      |                |                        |          | Gold-flash           |                |                           |                   |              |
| <a href="#">48395-0003</a> |              |                                      | 1.00           |                        | 7.40     | 15u” Gold (Au)       | 1.58mm (.062”) |                           |                   |              |
| <a href="#">48395-0004</a> |              |                                      |                |                        |          | Gold-flash           |                |                           |                   |              |
| <a href="#">48397-0003</a> |              |                                      | 1.75           |                        |          | 15u” Gold (Au)       | 2.40mm (.094”) |                           |                   |              |
| <a href="#">48397-0004</a> |              |                                      |                |                        |          | Gold-flash           |                |                           |                   |              |
| <a href="#">48398-0003</a> |              | 2.04                                 | 15u” Gold (Au) | 2.80mm (.110”)         |          |                      |                |                           |                   |              |
| <a href="#">48398-0004</a> |              |                                      | Gold-flash     |                        |          |                      |                |                           |                   |              |
| <a href="#">48404-0003</a> |              | Upright                              | On-board       | Yes                    | N.A.     | 13.85                | 15u” Gold (Au) | 2.67mm (.105”)            |                   |              |
| <a href="#">48404-0004</a> |              |                                      |                |                        |          |                      | Gold-flash     |                           |                   |              |
| <a href="#">48405-0003</a> |              | Right Angle                          |                |                        | Standard | 4.07                 | 6.93           | 15u” Gold (Au)            | 3.00mm (.118”)    |              |
| <a href="#">48405-0004</a> |              |                                      |                |                        |          |                      |                | Gold-flash                |                   |              |
| <a href="#">48406-0003</a> | 2            | Standard                             |                |                        | N.A.     | 15.50                | 15u” Gold (Au) | 3.00mm (.118”)            |                   |              |
| <a href="#">48406-0004</a> |              |                                      |                |                        |          |                      | Gold-flash     |                           |                   |              |
| <a href="#">48408-0003</a> | 1            | Vertical                             |                |                        | N.A.     | 15.00                | 15u” Gold (Au) | 3.00mm (.118”)            |                   |              |
| <a href="#">48408-0004</a> |              |                                      |                |                        |          |                      | Gold-flash     |                           |                   |              |
| <a href="#">48409-0003</a> | 2            | Vertical                             |                |                        | Reverse  | 14.88                | 15u” Gold (Au) | 3.00mm (.118”)            |                   |              |
| <a href="#">48409-0004</a> |              |                                      |                |                        |          |                      | Gold-flash     |                           |                   |              |

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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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