



**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

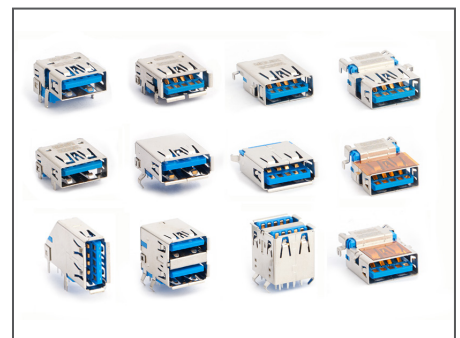
Standard blue color-coded housings	Distinguishes USB 3.0 connectors from USB 2.0 versions
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**USB 3.0 Connectors, High Durability Class, Through-hole, Halogen-free**

- 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, Top-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	
 48391 (C/H*: 6.09mm)	 48405 (C/H: 4.07mm)	 48392 (C/H: 4.06mm)	 48404 (H*: 13.85mm)	 48408 (H: 15.00mm)	 48394 (C/H: 0.36mm)	 48397 (C/H: 1.75mm)
 48393 (C/H: 4.00mm)	 48406 (H: 15.50mm)			 48409 (H: 14.88mm)	 48395 (C/H: 1.00mm)	 48398 (C/H: 2.04mm)

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

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\*\*H – the abbreviated form for “Heigh” 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



Car Infotainment and Navigation Systems



Consumer Appliance and Home Entertainment

### 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)
<a href="#">48392-0004</a>			Gold-flash											
<a href="#">48393-0003</a>			Standard			4.00	6.86	15u" Gold (Au)						
<a href="#">48393-0004</a>								Gold-flash						
<a href="#">48394-0003</a>		Reverse	Mid-mount (aka sink-type)	No		0.36	5.72	15u" Gold (Au)	1.50mm (.059")					
<a href="#">48394-0004</a>								Gold-flash						
<a href="#">48395-0003</a>								Upright				1.00	7.40	15u" Gold (Au)
<a href="#">48395-0004</a>									Gold-flash					
<a href="#">48397-0003</a>									Right Angle					Standard
<a href="#">48397-0004</a>								Gold-flash						
<a href="#">48398-0003</a>		Reverse		2.04	6.92	15u" Gold (Au)	1.58mm (.062")							
<a href="#">48398-0004</a>						Gold-flash								
<a href="#">48404-0003</a>		2	Right Angle	Standard	On-board	Yes	4.07	6.93	15u" Gold (Au)		2.40mm (.094")			
<a href="#">48404-0004</a>									Gold-flash					
<a href="#">48405-0003</a>	1	Vertical	Standard		N.A.	15.50	15.00	15u" Gold (Au)	2.67mm (.105")					
<a href="#">48405-0004</a>								Gold-flash						
<a href="#">48406-0003</a>	2	Reverse			N.A.	14.88		15u" Gold (Au)	3.00mm (.118")					
<a href="#">48406-0004</a>								Gold-flash						
<a href="#">48408-0003</a>	1							15u" Gold (Au)						
<a href="#">48408-0004</a>								Gold-flash						
<a href="#">48409-0003</a>	2							15u" Gold (Au)						
<a href="#">48409-0004</a>								Gold-flash						

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