



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.

Features and Benefits

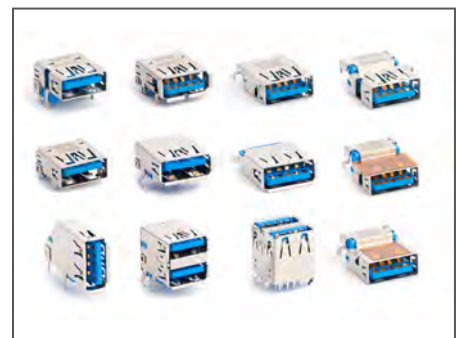
Meets High-Durability-Class (5000 mating cycles) requirements of USB 3.0 specifications	Sustains robust, reliable connectivity over high frequencies of mating and unmating
Meets all USB 3.0 specifications	Provides faster data rates of up to 10 times the theoretical speed of USB 2.0 with improved custom 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	
 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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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			
48391-0003	1	Right Angle	Standard	On-board	No	6.09	8.95	15u" Gold (Au)	1.50mm (.059")	Tape-on-reel			
48391-0004								Gold-flash					
48392-0003								Reverse			Yes	4.06	6.92
48392-0004			Gold-flash										
48393-0003			Standard			4.00	6.86	15u" Gold (Au)					
48393-0004								Gold-flash					
48394-0003		Reverse	Mid-mount (aka sink-type)	No	0.36	5.72	15u" Gold (Au)	1.50mm (.059")					
48394-0004							Gold-flash						
48395-0003							Upright				1.00	7.40	15u" Gold (Au)
48395-0004								Gold-flash					
48397-0003								Right Angle					Standard
48397-0004							Gold-flash						
48398-0003		Vertical	Reverse	2.04	6.92	15u" Gold (Au)	1.58mm (.062")						
48398-0004						Gold-flash							
48404-0003						Upright			N.A.		13.85	15u" Gold (Au)	2.40mm (.094")
48404-0004		Gold-flash											
48405-0003		Right Angle	Standard	On-board	Yes	4.07	6.93	15u" Gold (Au)	2.80mm (.110")		Tray		
48405-0004								Gold-flash					
48406-0003	2				N.A.	15.50	15u" Gold (Au)	2.67mm (.105")					
48406-0004							Gold-flash						
48408-0003	1				N.A.	15.00	15u" Gold (Au)	3.00mm (.118")					
48408-0004							Gold-flash						
48409-0003	2					14.88	15u" Gold (Au)						
48409-0004							Gold-flash						

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