



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)			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

*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					
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			Yes		4.06	6.92	15u” Gold (Au)	1.10mm (.043”)							
48392-0004							Gold-flash								
48393-0003			Standard	Mid-mount (aka sink-type)	No	4.00	6.86	15u” Gold (Au)	1.50mm (.059”)						
48393-0004								Gold-flash							
48394-0003		Reverse	0.36			5.72	15u” Gold (Au)	2.10mm (.083”)							
48394-0004							Gold-flash								
48395-0003			1.00			7.40	15u” Gold (Au)	1.58mm (.062”)							
48395-0004							Gold-flash								
48397-0003			1.75			6.92	15u” Gold (Au)	2.40mm (.094”)							
48397-0004							Gold-flash								
48398-0003		2.04		15u” Gold (Au)	2.80mm (.110”)										
48398-0004				Gold-flash											
48404-0003	Upright	On-board	Yes	N.A.	13.85	15u” Gold (Au)	2.67mm (.105”)	Tray							
48404-0004						Gold-flash									
48405-0003	Right Angle			Standard		4.07	6.93		15u” Gold (Au)	3.00mm (.118”)					
48405-0004									Gold-flash						
48406-0003	2										N.A.	15.50	15u” Gold (Au)	14.88	
48406-0004													Gold-flash		
48408-0003	1								Vertical					15u” Gold (Au)	Gold-flash
48408-0004															
48409-0003	2			Reverse						15u” Gold (Au)					
48409-0004										Gold-flash					

*Contact Height refers to the distance from soldering plane to mating plane of a mated cable-connector combination

**Height refers to the distance from top of connector shell (without flange) to PCB.

www.molex.com/link/usb3.0.html

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

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А