

USB Type-C Connectors >

The expanded family of compact USB Type-C Connectors supports up to 5.0A current and 10 Gbps speeds, and offers waterproof, robust, reliable connectivity in consumer, industrial, and IoT devices as well as other high-speed I/O applications.

FEATURES AND ADVANTAGES (WATERPROOF USB TYPE-C CONNECTOR)

IPx8 rating

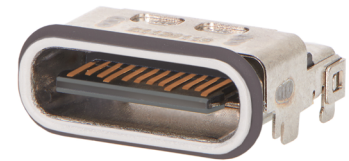
Provides protection against dust and water ingress

IPX7 rating

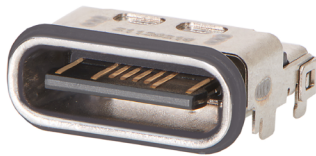
Provides protection against dust and water ingress

USB certificate

TID # is available



USB 3.2 Gen 2 Type-C, Top-Mount Receptacle, Waterproof, 24 pin (217804 series)



USB 2.0 Type-C, Top-Mount Receptacle, Waterproof, 16 pin (203615 series)



USB 3.2 Gen 2 Type-C, Mid-Mount Receptacle, Waterproof, 24 pin (221632 series)

Supports 5.0A/100W power

Enables fast charging

One-Row SMT soldering pin design

- Offers compactness
- Enables easy testing with improved yield rate
- Allows for easy supplementary soldering on SMT pins

IPX5 rating

Provides protection against dust and water ingress

Liquid silicon rubber (LSR) molded seal ring

- Allows for easy device assembly
- Offers excellent temperature and weather resistance
- keeps sealing banded with the connector



USB Type-C Receptacle, 6 Circuit (217176 series)



USB Type-C Receptacle, 6 Circuit (217177 series)



USB 3.2 Gen 1 Type-C, Mid-Mount Receptacle, Waterproof, 24 pin (202410 series)

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FEATURES AND ADVANTAGES (USB 3.2 GEN 2 TYPE-C CONNECTORS)

Ability to support 5.0A/100W power and up to 10 Gbps data rates
Enables fast charging and high-speed data transfer

Vertical, top-mount and mid-mount USB 3.2 Gen 2 type-c receptacles
Offer design flexibility

Metal shell with long lead stand-off
Provides robustness with stable PCB connection



USB 3.2 Gen 2 Type-C Receptacle, Top-Mount, 24 Circuit (105450 Series)



USB 3.2 Gen 2 Type-C Receptacle, Mid-Mount, 24 Circuit (105455 Series)

Mid-plate "tongue" design
Helps ensure high reliability while preventing damage from connector mishandling

High-temperature nylon insert-mold receptacle housing
Increases connector strength to reduce potential shorting between mid-plate and terminals

Flexible height and tooling design
Meets customers' requirements regarding height options with minimized cost and changeover time

Polyester film between plug housing and shell
Protects sufficiently against potential electrical shorting during mating

Four-stopper design
Can prevent plug over insertion that may cause separation between shell and/or solder tail

Single-piece metal shell on plug
Provides easy identification and differentiation against non-Type-C USB cables



USB 3.2 Gen 2 Type-C plug, 24 Circuit (105444 Series)

Four tabs in the shell and two tabs in the middle plate
Deliver robust PCB mount design



USB 3.2 Gen 2 Type-C Receptacle, Vertical, 24 Circuit (204711 Series)

USB-IF Certified; TID# is available

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FEATURES AND ADVANTAGES (USB 3.2 GEN 1 TYPE-C CONNECTORS)

Supports 5.0A/100W power and up to 5 Gbps data rates

Enables fast charging and high-speed data transfer



USB 3.2 Gen 1 Type-C Receptacle, Top-Mount, 24 Circuit (221610 series)

Metal shell

Provides strength/robustness to the connector

Short body

Available for space limited device

Friction design with spring shell

Delivers strong mating force

Hybrid soldering design

- Facilitates re-work in case of solder paste fail
- Eases supplementary soldering on SMT pins



USB 3.2 Gen 1 Type-C Receptacle, Top-Mount, 24 Circuit (217183 series)

Low-profile design

Saves space and aligns to PCB enter line position



USB 3.2 Gen 1 Type-C Receptacle, Mid-Mount, 24 Circuit (217184 series)

PCB board mounting design

Allows for device's docking application



USB 3.2 Gen 1 Type-CP Lug, Vertical, 24 Circuit (218847 series)

Robustness tag design

Offers strong PCB connection

Stand-off design

Balances connector during SMT Reflow process

Long body

Is suitable for devices need long body solution



USB 3.2 Gen 1 Type-C Receptacle, Vertical, 24 Circuit (221608 series)

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FEATURES AND ADVANTAGES (USB 2.0 TYPE-C CONNECTORS)

Supports 5.0A/100W power and up to 5 Gbps data rates

Enables fast charging and high-speed data transfer



USB 2.0 Type-C Receptable,
Top-Mount, 16 Circuit
(217179 series)

High center height

Allows alignment for devices that need higher center line positions



USB 2.0 Type-C Receptable,
Top-Mount, 16 Circuit
(217180 series)

Low profit design

Allows alignment for devices that need lower center line positions



USB 2.0 Type-C Receptable,
Mid-Mount, 16 Circuit
(216990 series)

Through-hole solder tail

Is suitable for different solder processes and provides a strong PCB connection



USB 2.0 Type-C Receptable,
Top-Mount, 16 Circuit
(213716 series)

Slim fit design

Saves PCB space



USB 2.0 Type-C Receptable,
Upright, 14 Circuit
(216989 series)

Shorter body design

Is suitable for devices that need a shorter body solution



USB 2.0 Type-C Receptable,
Vertical, 16 Circuit
(217182 series)

Longer lead design

Is suitable for different PCB thickness to provide stable PCB connections



USB 2.0 Type-C Receptable,
Top-Mount, 6 Circuit
(217175 series)

Low-profile height

Offers space savings and simple solder layout



USB 2.0 Type-C Receptable,
Vertical, 6 Circuit
(217178 series)

Short body design

Is suitable for devices that need a short body solution



USB 2.0 Type-C Receptable,
Vertical, 16 Circuit
(219320 series)

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MARKETS AND APPLICATIONS

Consumer

Electronic watches
Smartphones/wireless chargers
Power banks
PCs/laptops
Televisions
Video games
Graphic cards
AR/VR devices

Aviation

In-flight entertainment systems

Medical

Glucometers
Electronic inhalers

Industrial and Commercial

Identity door-locking systems
Oscilloscopes
Projectors
Point-of-sale registers

Automotive

Car infotainment
Navigation equipment

Connected Home

Smart home systems



In-Flight Entertainment Systems



Electronic Watches

SPECIFICATIONS

Reference Information

Packaging: Tape and reel
UL File No.: NA
CSA File No.: NA
Mates With: series 218847* or 105444*
Terminal Used: Copper Alloy
Designed In: Millimeters
RoHS: Yes
Halogen Free: Yes

Mechanical

Contact Retention to Housing:
Insert molded type
Insertion Force to PCB:
Zero Insertion Force
Mating Force: 5 to 20N
Un-mating Force:
8 to 20N (1 to 30 cycles);
6 to 20N (after 10,000 cycles).
Durability (min.): 10,000 cycles

Electrical

Voltage (max.): 30V DC
Current (max.):
3.0Amp -217175/217176/217177/217178;
6.0Amp -202410; 5.0Amp -Others.

Contact Resistance (max.):

30mΩ (initial) and 10 milliohm
(after test) -213716;
40mΩ (initial) and 10 milliohm
(after test) -202410;
40mΩ (initial) and 50 milliohm
(after test) -Others.

Dielectric Withstanding Voltage:

500 V AC -202410; 100 V AC -Others.

Insulation Resistance (min.):

1000 Megohms(initial) and
100 Megohms (after test) -202410;
100 Megohms -Others.

Physical

Housing:

Plastic and stainless steel LCP -
105444/217176/217177/217182/228847;
Nylon -Others.

Contact: Copper Alloy

Plating:

Contact Area —
0.75micron Gold(Au) min. over Nickel(Ni) -
105450/105455/201267/205714/204711/20
2410/203615/217804/221632; Gold Flash
0.025micron Gold (Au) min. over Nickel(Ni)
-Others.

Solder Tail Area —

3.05micron min. Matte Tin(Sn) -105444;
0.05micron Gold(Au) min. -105450/105455/
201267/204711/213083/213716/217804/
203615; 0.025micron Gold (Au) min.
-Others.

PCB Thickness: Refer to product drawing

Operating Temperature:

-30 to +85°C - 105450/105455/201267/
105444/204711/213716/218847;
-40 to +85°C -Others.

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ORDERING INFORMATION

Series No.	Product	Design	Product Configuration	USB Standard	Data Rate (bps)	Power	Circuit	
105444	Plug	Standard	Right Angle, TID	USB 3.2 Gen 2	10G	20/5.0	24	
218847			Vertical, SMT	USB 3.2 Gen 1	5G	20/5.0	24	
105450	Receptacle		Top Mount, SMT, TID	USB 3.2 Gen 2	10G	20/5.0	24	
201267			Top Mount, Stand off, TID	USB 3.2 Gen 2	10G	20/5.0	24	
205714			Top Mount, Screw Hole	USB 3.2 Gen 2	10G	20/5.0	24	
105455			Mid Mount, SMT	USB 3.2 Gen 2	10G	20/5.0	24	
204711			Vertical, SMT	USB 3.2 Gen 2	10G	20/5.0	24	
221610			Top Mount, Dual Row, SMT	USB 3.2 Gen 1	5G	20/5.0	24	
217183			Top Mount, Dual Row, Hybrid	USB 3.2 Gen 1	5G	20/5.0	24	
217184			Mid Mount, SMT	USB 3.2 Gen 1	5G	20/5.0	24	
221608			Vertical SMT, H9.97	USB 3.2 Gen 1	5G	20/5.0	24	
213716			Top Mount, Dual Row, DIP	USB 2.0	480M	20/5.0	16	
217179			Top Mount, Single Row, SMT	USB 2.0	480M	20/5.0	16	
217180			Top Mount, Single Row, CH=5.9	USB 2.0	480M	20/5.0	16	
216990			Mid Mount, Single Row	USB 2.0	480M	20/5.0	16	
217182			Vertical, SMT, H6.4	USB 2.0	480M	20/5.0	16	
219320			Vertical, SMT, H8.8	USB 2.0	480M	20/5.0	16	
216989			Upright, Dual Row, DIP	USB 2.0	480M	20/5.0	14	
217175			Top Mount, SMT	USB Type-C	N/A	20/3.0	6	
217178			Vertical, SMT	USB Type-C	N/A	20/3.0	6	
217804			Waterproof	Top Mount Dual, TID, IPX8	USB 3.2 Gen 2	10G	20/5.0	24
221632				Mid Mount, SMT, IPX7	USB 3.2 Gen 2	10G	20/5.0	24
202410	Mid Mount, SMT, IPX8			USB 3.2 Gen 1	5G	20/5.0	24	
213083	Top Mount, Single Row, IPX8			USB 2.0	480M	20/5.0	16	
203615	Top Mount, Dual, TID, IPX8	USB 2.0		480M	20/5.0	16		
217176	Top Mount, SMT, IPX5	USB Type-C		N/A	20/3.0	6		
217177	Mid Mount, SMT, IPX5	USB Type-C		N/A	20/3.0	6		

www.molex.com/link/usbproducts.html