

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)

Metal shell

Provides strength/robustness to the connector

LSR (liquid silicon rubber) molded seal ring

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

Supports 5.0A/100W power

Enables fast charging

Long outer shell

Allows usage in both thin and thick device housings

IPx8 rating

Provides protection against dust and water ingress

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



USB 3.2 Type-C Receptacle, 24 Circuit (202410 Series)

USB-IF Certified-TID# is available

IPx5 rating

Provides protection against dust and water ingress

One-Row SMT soldering pin design

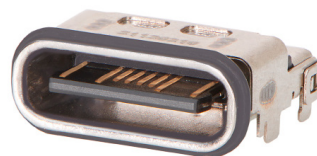
- Offers compactness
- Enables easy testing with improved yield rate
- Easy supplementary soldering on SMT pins



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



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



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

Metal shell with long lead stand-off

Provides robustness with stable PCB connection

Mid-plate "tongue" design

Helps ensure high reliability while preventing damage from connector mishandling

Polyester film between plug housing and shell

Protects sufficiently against potential electrical shorting during mating

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)



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

High-temperature nylon insert-mold receptacle housing

Increases connector strength to reduce potential shorting between mid-plate and terminals

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

Offer design flexibility



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

Flexible height and tooling design

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

4-stopper design

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

4 tabs in the shell and 2 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)

Friction design with spring shell

Delivers strong mating force

Metal shell

Provides strength/robustness to the connector

Top-mount and mid-mount USB 3.2 Gen 1 type-c receptacles

Offer design flexibility

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

Enables fast charging and high-speed data transfer

Mid-plate tongue design

Helps ensure high reliability while preventing damage from connector mishandling



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



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

Low-profile design

Saves space and aligns to PCB center line position

Hybrid soldering design

- Facilitates re-work in case of solder paste fail
- Enables easy testing with improved yield rate
- Eases supplementary soldering on SMT pins

FEATURES AND ADVANTAGES (USB 2.0 TYPE-C CONNECTORS)

Supports 5.0A/100W power and up to 480 Mbps data rates

Enables fast charging and data transfer

Top-mount, mid-mount and vertical USB 2.0 type-c receptacles in 6, 14 and 16 circuit sizes

Offer design flexibility

Low-profile design

Saves space and aligns to PCB center line position

Metal shell

Provides strength/robustness to the connector

Friction design with spring shell

Delivers strong mating force



USB 2.0 Type-C Receptacle, Mid-Mount, 16 Circuit (216990 Series)



USB 2.0 Type-C Receptacle, Vertical, 16 Circuit (217182 Series)



USB 2.0 Type-C Receptacle, Top-Mount, 16 Circuit (213716 Series)

SMT soldering design

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

Compact connector design with 4 tabs

Provides space savings and robustness

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FEATURES AND ADVANTAGES (USB 2.0 TYPE-C CONNECTORS)



Slim Fit Design

EMI shield
Provides EMC
EMI protectio



*USB Type-C Receptacle,
Top-Mount, 6 Circuit
(217175 Series)*

Long receptacle housing leads
Is suitable for different PCB
thicknesses to provide stable PCB
connections



*USB Type-C Receptacle,
Vertical, 6 Circuit
(217178 Series)*

Low-profile height
Offers space savings
and simple
solder layout



*USB Type-C Receptacle, Upright,
14 Circuit (216989 Series)*

Through-hole soldering design

- Is suitable for both reflow and wave solder processes
- Enables re-work in case of soldering fail
- Enables easy testing with an improved yield rate



*USB 2.0 Type-C Receptacle,
Top-Mount, High-Center, 16
Circuit (217180 Series)*

Low high-center line
Is helpful in aligning high-
center line positions

MARKETS AND APPLICATIONS

Consumer

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

Industrial and Commercial

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

Automotive

Car infotainment
Navigation equipment

Aviation

In-flight entertainment systems

Connected Home

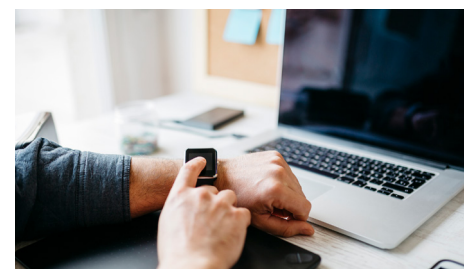
Smart home systems

Medical

Glucometers
Electronic inhalers



In-Flight Entertainment Systems



Electronic Watches

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SPECIFICATIONS

Reference Information

Packaging: Tape and reel

UL File No.: NA

CSA File No.: NA

Mates With: 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

Unmating 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/AC) max.

Current (max.):

3.0A (217175, 217176, 217177, 217178)

5.0A (105450, 105455, 201267, 105444,

204711, 213083, 213716, 216989,

216990, 217179, 217180, 217182,

217183, 217184, 217804, 203615)

6.0A (202410)

Contact Resistance (max.):

40 milliohms (initial); 50 milliohms after

test (105450, 105454, 105455, 201267,

105444, 204711, 213083, 217804, 203615)

40 milliohms (initial); 10 milliohms after

test (202410)

30 milliohms (initial); 10 milliohms

after test (213716)

Dielectric Withstanding Voltage:

100V AC (105450, 105454, 105455,

201267, 105444, 204711, 213083, 213716,

217804, 203615) or 500V AC (202410)

Insulation Resistance (min.):

100 Megohms (105450, 105454, 105455,

201267, 105444, 204711, 213083,

213716, 217804, 203615)

1000 Megohms (initial); 100 Megohms

after environmental test (202410)

Physical

Housing:

Receptacle: High-temperature Nylon

(105450, 105455, 201267,

204711, 213083, 213716, 217804,

203615), PA46 (202410), PA9T (216989,

216990, 217179, 217180, 217183,

217184, 217175, 217178), LCP (217176,

217177, 217182)

Plug:

Contact: Copper Alloy

Plating:

Contact Area —

Receptacle: Gold Flash over 0.75micron min.

Palladium/Nickel (Pd/Ni) (105450, 105454,

204711, 105455, 213083, 213716,

217804, 203615) or

0.75micron min. Gold (Au)

(201267/202410)

Plug: 0.76micron min. Gold (Au)

Solder Tail Area —

Receptacle: 0.05micron Gold (Au) min.

(105450, 105454, 105455, 201267,

204711, 213083, 213716, 217804,

203615) or 0.025micron min.

Gold (Au) (202410)

Plug: 3.05micron min. Matte Tin (Sn)

Underplating —

2micron min. Nickel (Ni) overall (105450,

105454, 201267, 202410, 213083,

213716, 217804, 203615) or

1.5micron min. Nickel (Ni) overall (105455,

204711)

PCB Thickness:

Receptacle: 0.60 to 0.80mm (105450,

105454, 105455, 202410, 204711,

217804, 203615);

0.80 to 1.00mm (213083, 213716);

1.60mm (201267)

Plug: 0.80mm

Operating Temperature:

-30 to +85°C (105450, 105455, 201267,

105444, 204711, 213716)

-40 to +85°C (202410, 213083, 216989,

216990, 217182, 217179, 217180,

217183, 217184, 217175, 217176,

217804, 203615, 217177, 217178,

217804, 203615)

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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	20V/5.0A	24
105450			Top Mount, SMT, TID	USB 3.2 Gen 2	10G	20V/5.0A	24
201267	Top Mount, Stand Off, TID		USB 3.2 Gen 2	10G	20V/5.0A	24	
205714	Top Mount, Screw Hole		USB 3.2 Gen 2	10G	20V/5.0A	24	
105455	Mid Mount, Single Shell, SMT		USB 3.2 Gen 2	10G	20V/5.0A	24	
204711	Vertical, SMT		USB 3.2 Gen 2	10G	20V/5.0A	24	
217183	Top Mount, Dual Row, Hybrid		USB 3.2 Gen 1	5G	20V/5.0A	24	
217184	Mid Mount, SMT		USB 3.2 Gen 1	5G	20V/5.0A	24	
213716	Top Mount, Dual Row, DIP		USB 2.0	480M	20V/5.0A	16	
217179	Top Mount, Single Row, SMT		USB 2.0	480M	20V/5.0A	16	
217180	Top Mount, Single Row, CH=5.9		USB 2.0	480M	20V/5.0A	16	
216990	Receptacle		Mid Mount, Single Row	USB 2.0	480M	20V/5.0A	16
217182			Vertical, SMT	USB 2.0	480M	20V/5.0A	16
216989			Upright, Dual Row, DIP	USB 2.0	480M	20V/5.0A	14
217175			Top Mount, SMT	USB Type-C	N/A	20V/3.0A	6
217178		Vertical, SMT	USB Type-C	N/A	20V/3.0A	6	
217804		Top Mount Dual IPx8	USB 3.2 Gen 2	10G	20V/5.0A	24	
202410		Mid Mount, SMT, IPx8	USB 3.2 Gen 1	5G	20V/6.0A	24	
213083		Top Mount, Single Row, IPx8	USB 2.0	480M	20V/5.0A	16	
203615		Top Mount Dual IPx8	USB 2.0	480M	20V/5.0A	16	
217176		Top Mount, SMT, IPx5	USB Type-C	N/A	20V/3.0A	6	
217177	Mid Mount, SMT, IPx5	USB Type-C	N/A	20V/3.0A	6		

www.molex.com/link/usbproducts.html