

USB Type-C Connectors >

The expanded family of compact USB Type-C Connectors supports up to 5.0A current and 40 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 2.0 Type-C Receptacle,
16 Circuit (213083 Series)

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

One-Row SMT soldering pin design

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

IPx5 rating

Provides protection against dust and water ingress

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

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

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FEATURES AND ADVANTAGES (USB 4.0 TYPE-C CONNECTORS)

Ability to support 5.0A/100W power and up to 40 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

Short mating length

Provides space savings and design flexibility

USB 4.0 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 4.0 type-c receptacles

Offer design flexibility

USB 4.0 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 4.0 Type-C plug, **24 Circuit** (105444 Series)

USB 4.0 Type-C Receptacle, Vertical, **24 Circuit** (204711 Series)

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FEATURES AND ADVANTAGES (USB 3.2 TYPE-C CONNECTORS)

Friction design with spring shell
Delivers strong mating force

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

Low-profile design
Saves space and aligns to PCB center line position

Metal shell
Provides strength/robustness to the connector

Top-mount and mid-mount USB 3.2 type-c receptacles
Offer design flexibility



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



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

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

Friction design with spring shell
Delivers strong mating force

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

Metal shell
Provides strength/robustness to the connector



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



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



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



Compact design
Offers space savings

EMI shield
Provides EMC/EMI protection



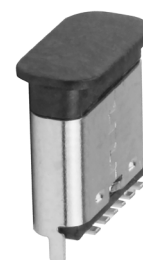
USB Type-C Receptacle,
Top-Mount, **6 Circuit**
(217175 Series)

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

Long receptacle housing leads

Is suitable for different PCB thicknesses to provide stable PCB connections



Low-profile height
Offers space savings and simple solder layout

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



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

Low high-center line

Is helpful in aligning high-center line positions



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

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

USB Type-C Connectors

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,) 6.0A (202410)

Contact Resistance (max.):

40 milliohms (initial); 50 milliohms after test (105450, 105454, 105455, 201267, 105444, 204711, 213083)

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, 20471, 213083,

213716) or 500V AC (202410)

Insulation Resistance (min.):

100 Megohms (105450, 105454, 105455, 201267, 105444, 204711, 213083, 213716)

1000 Megohms (initial); 100 Megohms after environmental test (202410)

Physical

Housing:

Receptacle: High-temperature Nylon

(105450, 105455, 201267, 204711, 213083, 213716), PA46 (202410), PA9T (216989, 216990, 217179, 217180, 217183, 217184, 217175, 217178), LCP (217176, 217177, 217182)

Plug: LCP

Contact: Copper Alloy

Plating:

Contact Area —

Receptacle: Gold Flash over 0.75micron min.

Palladium/Nickel (Pd/Ni) (105450, 105454, 204711, 105455, 213083, 213716) 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) 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) or 1.5micron min.

Nickel (Ni) overall (105455, 204711)

PCB Thickness:

Receptacle: 0.60 to 0.80mm (105450, 105454, 105455, 202410, 204711); 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, 217177, 217178)

USB Type-C Connectors

ORDERING INFORMATION

Series No.	Product	Design	Product Configuration	USB Standard	Data Rate (bps)	Power	Circuit	
105444	Plug	Standard	Right Angle	USB 4.0	40G	20V/5.0A	24	
105450	Receptacle		Top-mount, SMT	USB 4.0	40G	20V/5.0A	24	
201267			Top-mount, Stand-off 0.35mm	USB 4.0	40G	20V/5.0A	24	
105455			Mid-mount, Single Shell, SMT	USB 4.0	40G	20V/5.0A	24	
204711			Vertical, SMT	USB 4.0	40G	20V/5.0A	24	
217183			Top Mount, Dual Row, Hybrid	USB 3.2 Gen1	5G	20V/5.0A	24	
217184			Mid Mount, SMT	USB 3.2 Gen1	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			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	
202410			Waterproof	Mid-mount, SMT, IPx8	USB 3.2 Gen1	5G	20V/6.0A	24
213083				Top-mount, Single Row, 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