THE DATASHEET OF

1054440001

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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)

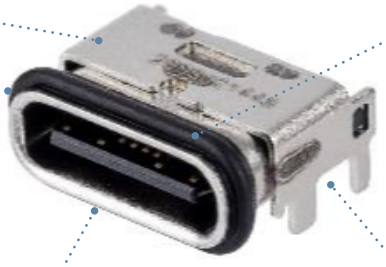
Metal shell
Provides strength/ robustness to the connector

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 (USB4 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

Vertical, top-mount and mid-mount USB4 type-c receptacles
Offer design flexibility

*USB4 Type-C Receptacle, Top-Mount, **24 Circuit** (105450 Series)*

*USB4 Type-C Receptacle, Mid-Mount, **24 Circuit** (105455 Series)*

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

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

*USB4 Type-C plug, **24 Circuit** (105444 Series)*

Short mating length
Provides space savings and design flexibility

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

*USB4 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)*

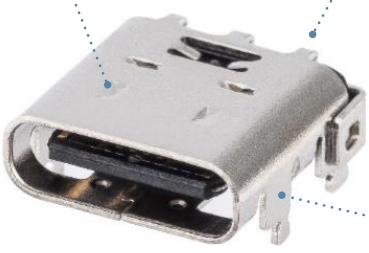
*USB 3.2 Type-C Receptacle, Mid-Mount, **24 Circuit** (217184 Series)*

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



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

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

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

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

Metal shell
Provides strength/robustness to the connector

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

Compact connector design with 4 tabs
Provides space savings and robustness

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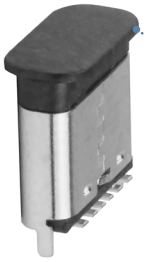
FEATURES AND ADVANTAGES (USB 2.0 TYPE-C CONNECTORS)

EMI shield
Provides EMC/ EMI protection

*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



Low-profile height
Offers space savings and simple solder layout

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

Compact design
Offers space savings

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 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

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

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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,) 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)

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ORDERING INFORMATION

Series No.	Product	Design	Product Configuration	USB Standard	Data Rate (bps)	Power	Circuit
105444	Plug	Standard	Right Angle	USB4	40G	20V/5.0A	24
105450	Receptacle		Top-mount, SMT	USB4	40G	20V/5.0A	24
201267			Top-mount, Stand-off 0.35mm	USB4	40G	20V/5.0A	24
205714			Top-mount, Screw hole	USB4	40G	20V/5.0A	24
105455			Mid-mount, Single Shell, SMT	USB4	40G	20V/5.0A	24
204711			Vertical, SMT	USB4	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

Order No. 987651-4081 Rev. 5 USA/0k/GF/2021.02

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