

USB Type-C Connectors

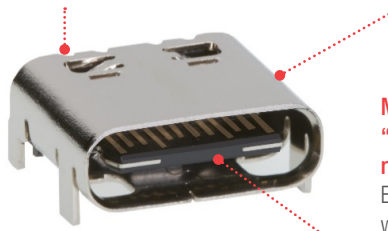
molex

The compact USB Type-C Connectors and Cables expanded family supports USB4 and Thunderbolt 4 up to 40 Gbps speeds and offers robust, reliable connectivity in IoT, wearable devices and other high-speed data I/O applications

Features and Advantages

Supports 5.0A power in plugs and receptacles

Reduces battery-charging time by 64% versus micro-USB 2.0's current rating of 1.8A



USB Type-C Receptacle

High-temperature nylon insert-mold receptacle housing

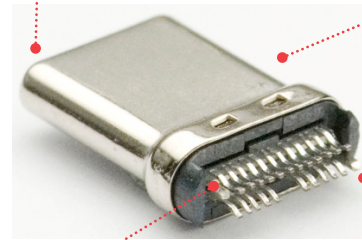
Increases connector strength to reduce potential shorting between mid-plate and terminals

Mid-plate connector "tongue" design in receptacle

Ensures high reliability while preventing damage from connector mishandling

Single-piece metal shell on cable plug

Provides easy identification and differentiation against non-Type-C USB cables



USB Type-C Plug

High normal force terminal design on plug

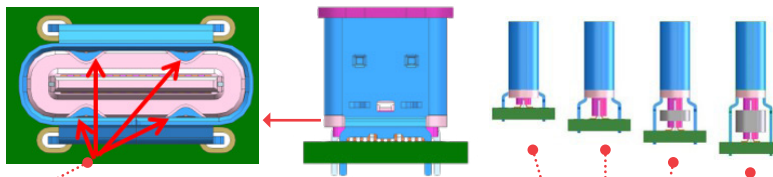
Increases connector strength to reduce potential shorting between mid-plate and terminals

Short mating length

Provides space-saving and design flexibility

Polyester film between plug housing and shell

Prevents potential electrical shorting during mating



4-stopper design

Prevents 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

Delivers robust PCB mount design

Vertical USB Type-C Receptacle

Flexible height and tooling design

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

Applications

Consumer

- Electronic watches
- Smartphones/Wireless chargers
- Power banks
- PCs/Laptops
- Televisions
- Video games
- Graphic cards

Aviation

- In-flight entertainment systems

Medical

- Glucometers
- Electronic inhalers

Industrial and Commercial

- Identity door-locking systems
- Oscilloscopes
- Air purification systems
- Projectors
- Point-of-sale registers
- ATM

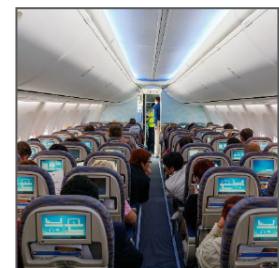
Automotive

- Car infotainment
- Connected home

Smart Home Systems



Electronic Watches



In-Flight Entertainment Systems

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.):
5.0A (105450, 105454, 105455, 201267,
105444, 204711)
6.0A (202410)
Contact Resistance (max.):
40 milliohms (initial); 50 milliohms after test
(105450, 105454, 105455, 201267,
105444, 204711)
40 milliohms (initial); 10 milliohms after test
(202410)
Dielectric Withstanding Voltage:
100V AC (105450, 105454, 105455, 201267,
105444, 204711) or 500V AC (202410)
Insulation Resistance (min.):
100 Megohms (105450, 105454, 105455,
201267, 105444, 204711)
1000 Megohms (initial); 100 Megohms after
environmental test (202410)

PHYSICAL

Housing:
Receptacle: High-temperature Nylon
(105450, 105454, 105455, 201267, 204711),
PA46 (202410)
Plug: LCP
Contact: Copper Alloy
Plating:
Contact Area —
Receptacle: Gold Flash over 0.75micron min.
Palladium/Nickel (Pd/Ni) (105450, 105454,
204711, 105455) 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) or
0.025micron min. Gold (Au) (202410)
Plug: 3.05micron min. Matte Tin (Sn)
Underplating —
2micron min. Nickel (Ni) overall (105450,
105454, 201267, 202410) or 1.5micron min.
Nickel (Ni) overall (105455, 204711)
PCB Thickness:
Receptacle: 0.60 to 0.80mm (105450, 105454,
105455, 202410, 204711); 1.60mm (201267)
Plug: 0.80mm
Operating Temperature:
-30 to 85°C
(105450, 105454, 105455, 201267,
105444, 204711)
-40 to 85°C (202410)

Ordering Information

Molex P/N	Product	Design	Product Configuration	Standard	Data Rate (Gbps)	Power	Circuit	Center Height (mm)
1054500101	Receptacle	Standard	SMT, Right Angle, Top Mount	USB4	40	20V/5.0A	24	1.58
2012670005		Standard	SMT, Right Angle, Top Mount	USB4	40	20V/5.0A	24	1.93
2057141001		Standard	SMT, Right Angle, Top Mount	USB4	40	20V/5.0A	24	1.93
2047110001		Standard	SMT, Vertical	USB4	40	20V/5.0A	24	9.05
1054550101		Standard	SMT, Mid Mount	USB4	40	20V/5.0A	24	0.60
2024100002		Waterproof (IPX8)	SMT, Mid Mount	USB 3.2	5	20V/6.0A	24	0.40

www.molex.com/link/usbproducts.html

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