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USB C



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Outline



USB 3.1 vs. USB Type C



USB Type C Feature



USB Type C Pin Assignment



USB Type C Conn.



USB Type C Cable



USB Type C Finished Prod.



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USB 3.1 vs. USB Type C

USB 2.0

- 480Mbps
- 500mA/5V

• USB 3.1

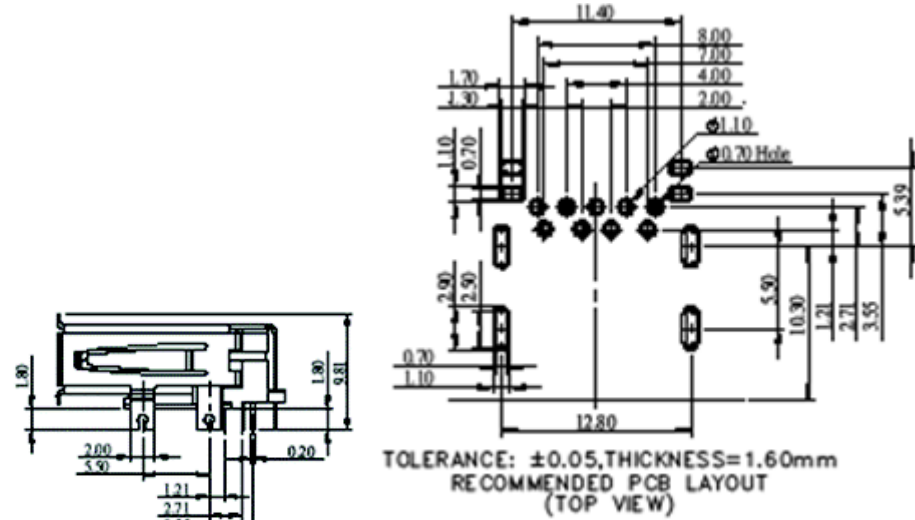
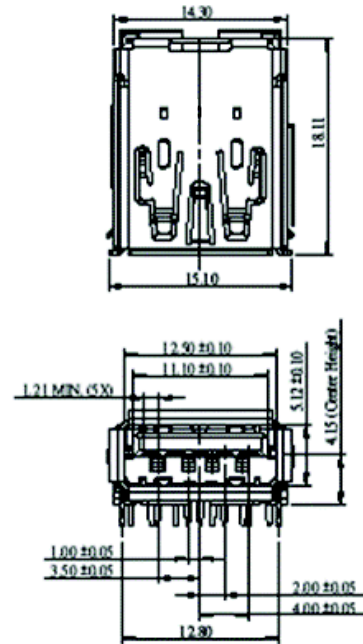
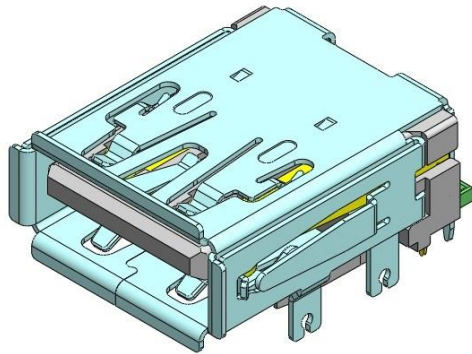
- Gen 1(5Gbps)
- Gen 2(10Gbps)
- 900mA/5V

• USB Type C

- 2.0(480 Mbps)
- Gen 1(5 Gbps)
- Gen 2(10 Gbps)
- **Gen x(20 Gbps)**
- 1.5A,3A/5V
- Power Delivery:
5A/20V(Max.)

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USB 3.1 A Type Receptacle



Cobb Part No.	Product Name	Support to
CTCS377AD09KZTF1N0A2	USB 3.1 A Type Female (CH: 4.15mm)	Power Delivery

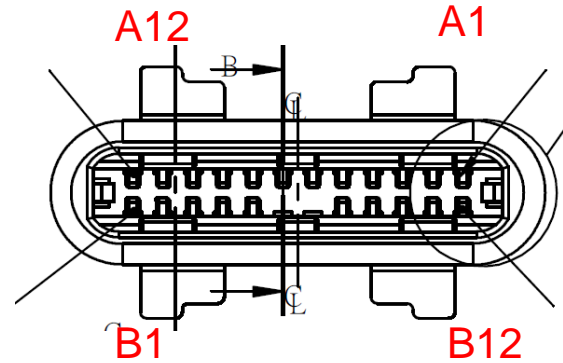
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USB Type C Features

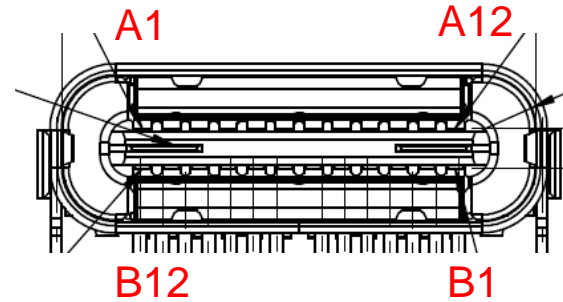
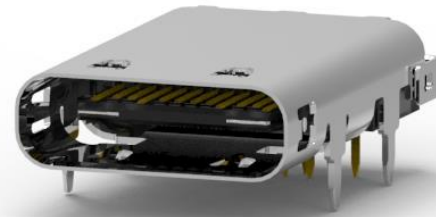
- Pluggable in either upside-up or upside-down directions between host and devices
- Receptacle height is under 3mm, suitable for use in very thin platform
- Standard Current is 3A, also can support USB Power Delivery up to 5A with 5/12/20V
- Successful plug-in results in audible “Click”
- Enhanced EMI and RFI
- 10,000 Insertion/Extraction Cycles
- Can be used for display interface as DisplayPort, VGA, HDMI...

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USB Type C Pin Assignment for USB 3.1



Plug



Receptacle

A1~A12

B12~B1

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USB Type C Pin Assignment for USB 3.1

A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
GND	RX2+	RX2-	Vbus	SBU1	D-	D+	CC	Vbus	TX1-	TX1+	GND
GND	TX2+	TX2-	Vbus	Vconn			SBU2	Vbus	RX1-	RX1+	GND
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12

Plug

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
GND	TX1+	TX1-	Vbus	CC1	D+	D-	SBU1	Vbus	RX2-	RX2+	GND
GND	RX1+	RX1-	Vbus	SBU2	D-	D+	CC2	Vbus	TX2-	TX2+	GND
B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1

Recep.
Up-side up

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
GND	TX1+	TX1-	Vbus	CC1	D+	D-	SBU1	Vbus	RX2-	RX2+	GND
GND	RX1+	RX1-	Vbus	SBU2	D-	D+	CC2	Vbus	TX2-	TX2+	GND
B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1

Up-Side Down

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USB Type C Pin Assignment for USB 2.0

A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
GND	RX2+	RX2-	Vbus	SBU1	D-	D+	CC	Vbus	TX1-	TX1+	GND
GND	TX2+	TX2-	Vbus	Vconn			SBU2	Vbus	RX1-	RX1+	GND
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
GND	TX1+	TX1-	Vbus	CC1	D+	D-	SBU1	Vbus	RX2-	RX2+	GND
GND	RX1+	RX1-	Vbus	SBU2	D-	D+	CC2	Vbus	TX2-	TX2+	GND
B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
GND	TX1+	TX1-	Vbus	CC1	D+	D-	SBU1	Vbus	RX2-	RX2+	GND
GND	RX1+	RX1-	Vbus	SBU2	D-	D+	CC2	Vbus	TX2-	TX2+	GND
B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1

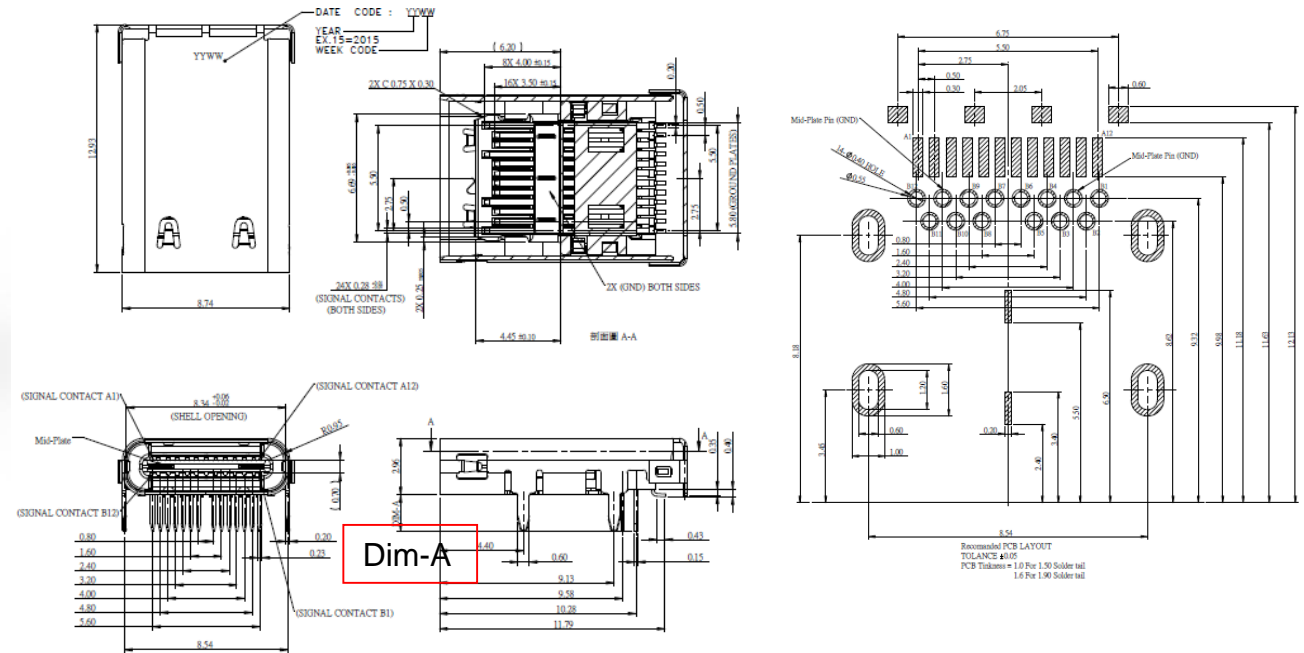
Plug

Receptacle
Up-side up

Up-Side Down

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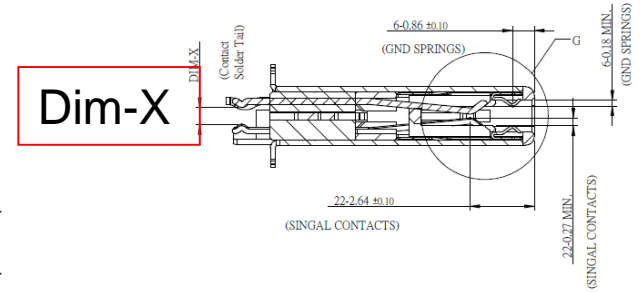
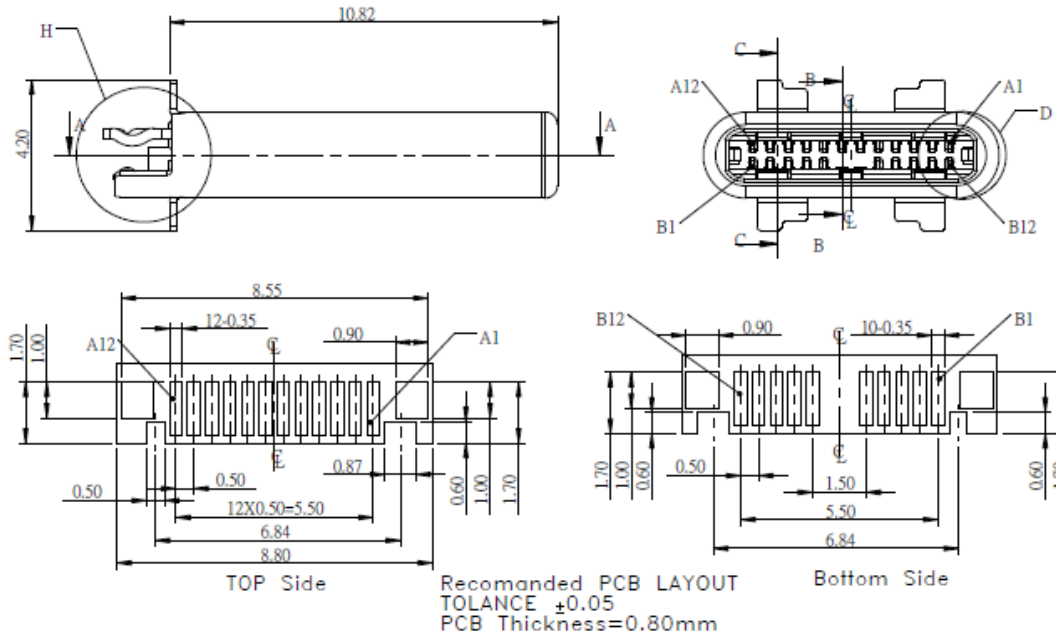
USB Type C Receptacle



Cobb Part No.	Product Name	Dim-A	PCB
CTCS317JD24BZTF3N0C3	USB Type C Receptacle	1.5 mm	1.0 mm
CTCS317JD24BZTF3N2C3	USB Type C Receptacle	1.9 mm	1.6 mm

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USB Type C Plug



Cobb Part No.	Product Name	Dim-X	Apply to
CTCS317CD22AZTF2N0A3	USB Type C Plug	0.7	Cable Assembly
CTCS317CD22AZTF2N1A3	USB Type C Plug	0.5	Pen Driver

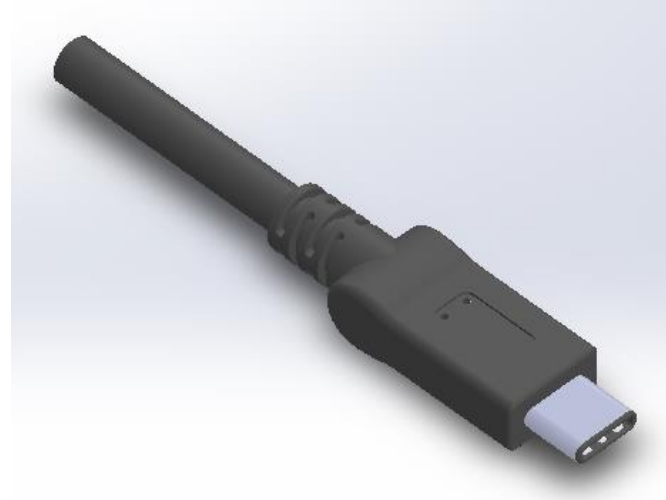
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USB Type C Test Results

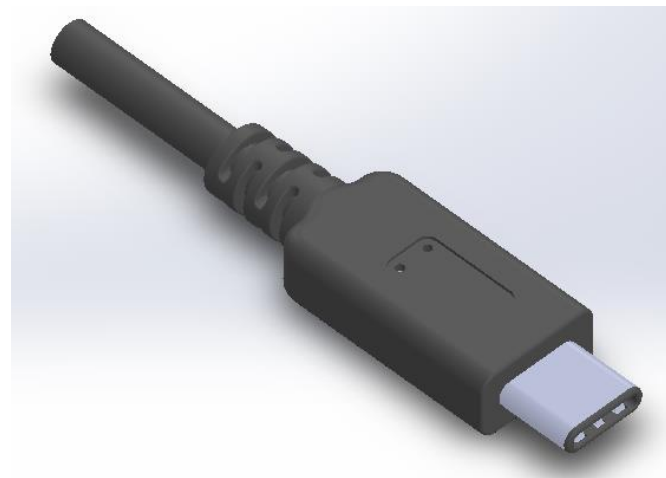
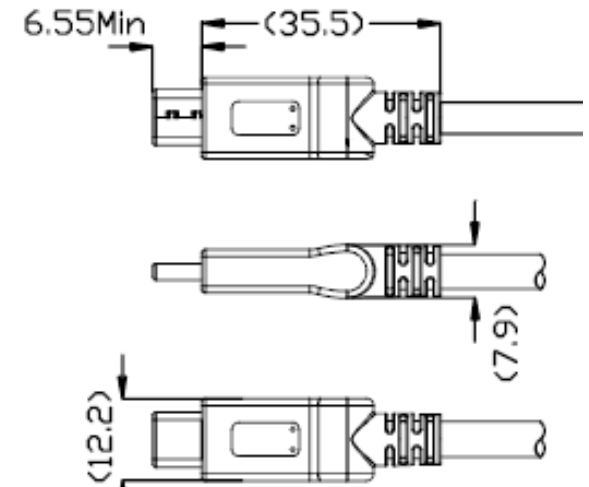
	USB Condition	Cobb Result
Durability Test (At first)	Insertion Force: 5~20 N	Insertion Force: 7.7 N Extraction Force: 11.1 N
Durability Test (After 10,000 Cycles)	Extraction Force: 8~20 N	Insertion Force: 13.2 N Extraction Force: 12.0 N
Insulation Resistance	100 M ohm at 100V DC	>100 M ohm
Dielectric Withstanding Voltage Test	No Breakdown at 100V AC/minute	No Breakdown
Contact Resistance	40 M ohm at 20mV/100mA	<40 M ohm
Solder Ability	95% Solder Ability	95% Min.

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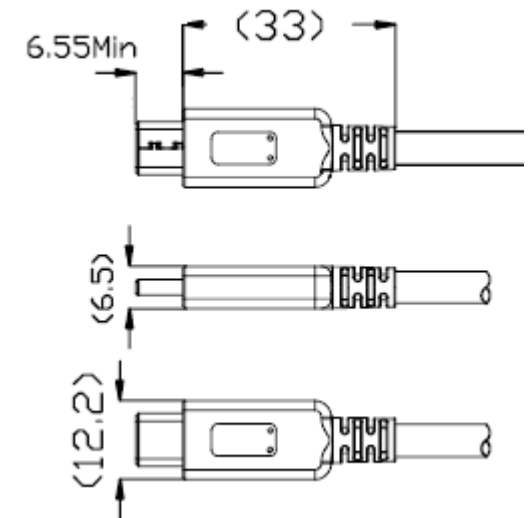
USB Type C Cable



USB 3.1



USB 2.0



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USB Type C Cable

USB 3.1 Gen 2



USB 3.1 Gen 1

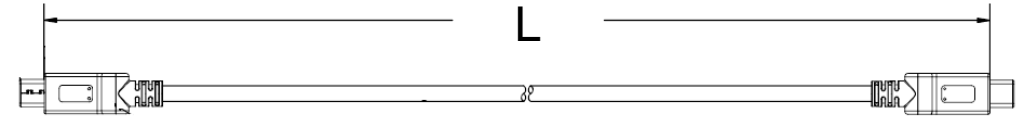


USB 2.0



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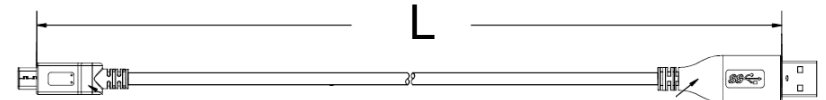
USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F1M3A01E1M0	USB C Plug to USB 3.1 AM Cable	1M

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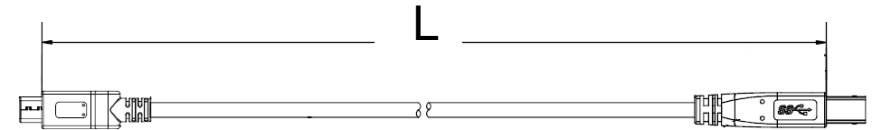
USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F1K3A01E1M0	USB C Plug to USB 3.1 AM Cable	1M

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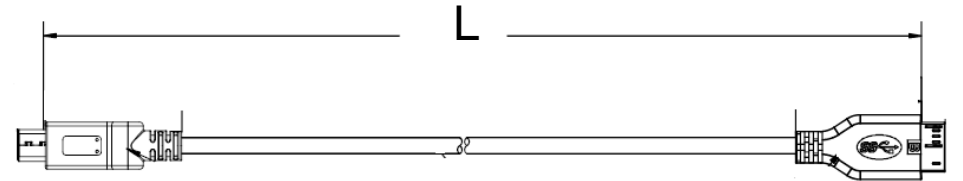
USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F1L3A01E1M0	USB C Plug to USB 3.1 BM Cable	1M

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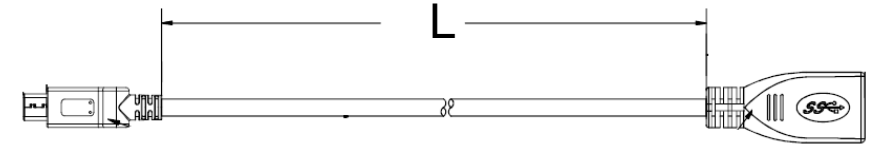
USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F3L3A01E50C	USB C Plug to USB 3.1 micro BM Cable	50cm

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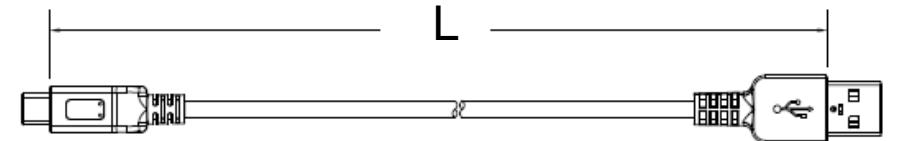
USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F5N3B01E05C	USB C Plug to USB 3.0 AF Cable	5cm

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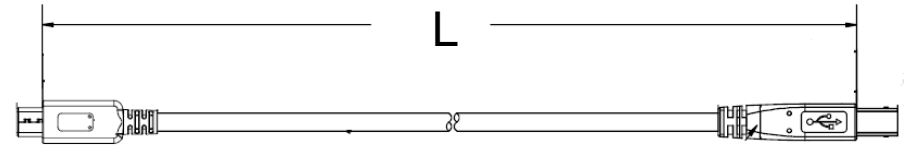
USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F2K3A01E1M0	USB C Plug to USB 2.0 AM Cable	1M

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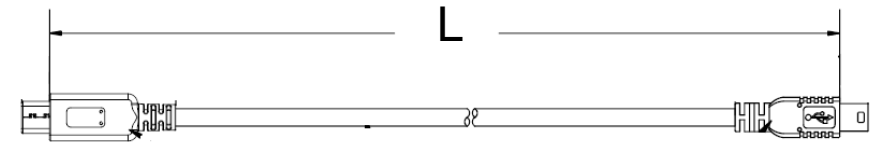
USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F2L3A01E1M0	USB C Plug to USB 2.0 BM Cable	1M

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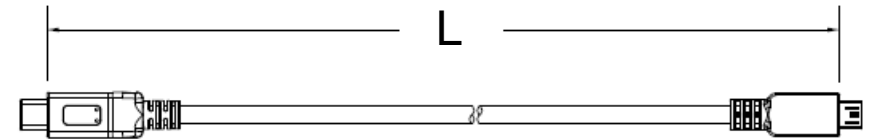
USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F7L3A01E1M0	USB C Plug to USB 2.0 mini BM Cable	1M

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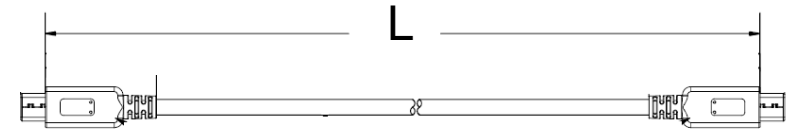
USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F4L3A01E1M0	USB C Plug to USB 2.0 micro BM Cable	1M

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USB Type C Cable



Cobb Part No.	Product Name	Length
CTCSC8F7M3A01E1M0	USB C Plug to USB 2.0 C Plug Cable	1M

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USB Type C Cable

Table 3-1 USB Type-C Standard Cable Assemblies

Cable Ref	Plug 1	Plug 2	USB Version	Cable Length	Current Rating	USB Power Delivery (BMC)	USB Type-C Electronically Marked
CC2-3	C	C	USB 2.0	≤ 4 m	3 A	Supported	Optional
CC2-5					5 A		Required
CC3G1-3	C	C	USB 3.1 Gen1	≤ 2 m	3 A	Supported	Required
CC3G1-5					5 A		
CC3G2-3	C	C	USB 3.1 Gen2	≤ 1 m	3 A	Supported	Required
CC3G2-5					5 A		

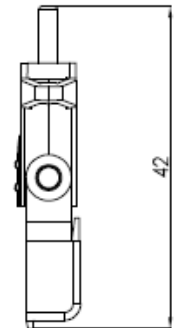
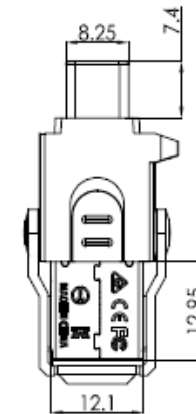
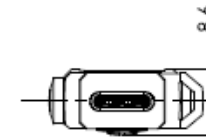
Table 3-2 USB Type-C Legacy Cable Assemblies

Cable Ref	Plug 1 ⁴	Plug 2 ⁴	USB Version	Cable Length	Current Rating	USB Type-C Electronically Marked ³
AC2-3	USB 2.0 Standard-A	USB 2.0 Type-C ¹	USB 2.0	≤ 4 m	3 A	Optional
AC2-5	USB 2.0 PD Standard-A				5 A	Required
AC3G2-3	USB 3.1 Standard-A	USB Full-Featured Type-C ¹	USB 3.1 Gen2	≤ 1 m	3 A	Optional
AC3G2-5	USB 3.1 PD Standard-A				5 A	Required
CB2-3	USB 2.0 Type-C ²	USB 2.0 Standard-B	USB 2.0	≤ 4 m	3 A	Optional
CB2-5		USB 2.0 PD Standard-B			5 A	Required
CB3G2-3	USB Full-Featured Type-C ²	USB 3.1 Standard-B	USB 3.1 Gen2	≤ 1 m	3 A	Optional
CB3G2-5		USB 3.1 PD Standard-B			5 A	Required
CmB2	USB 2.0 Type-C ²	USB 2.0 Mini-B	USB 2.0	≤ 4 m	500 mA	Optional
CuB2-3	USB 2.0 Type-C ²	USB 2.0 PD Micro-B	USB 2.0	≤ 2 m	3 A	Optional
CuB3G2-3	USB Full-Featured Type-C ²	USB 3.1 PD Micro-B	USB 3.1 Gen2	≤ 1 m	3 A	Optional

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USB Type C Finished Product

No driver is needed for Windows XP, Vista, WIN 7, WIN 8, WIN 8.1, Mac OS 10.4+, Android 4.0+, Linux 2.4+, Chromium OS.

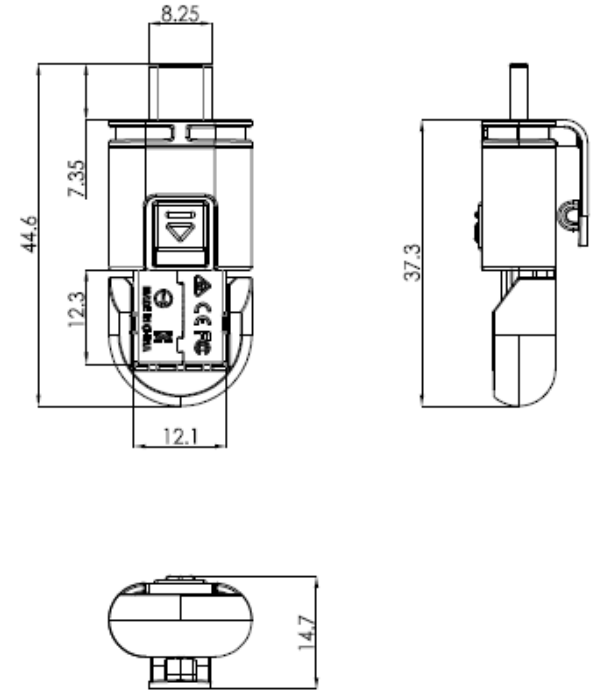


Cobb Part No.	Product Name	Support to
CTCSGB04BD000AB0	USB Type C Dual Reader(ID-B)	USB 3.1 Gen 1

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USB Type C Finished Product

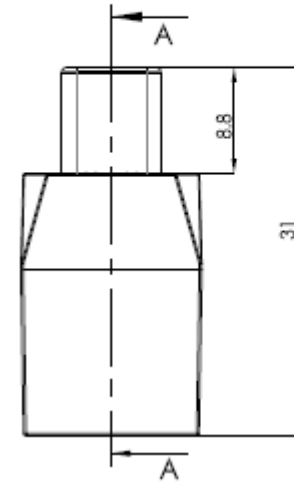
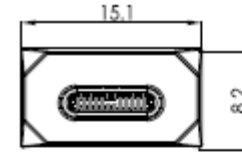
No driver is needed for Windows XP, Vista, WIN 7, WIN 8, WIN 8.1, Mac OS 10.4+, Android 4.0+, Linux 2.4+, Chromium OS.



Cobb Part No.	Product Name	Support to
CTCSGB04CD000AB0	USB Type C Dual Reader(ID-C)	USB 3.1 Gen 1

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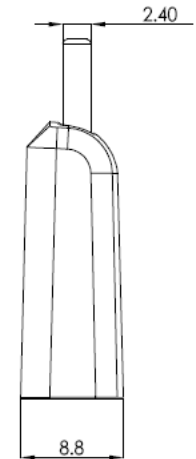
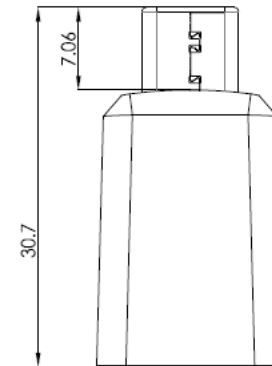
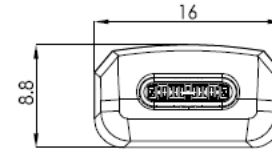
USB Type C Finished Product



Cobb Part No.	Product Name	Support to
CTCSGA02ADC000AB0	USB Type C to A(Legacy) Adapter(ID-A)	USB 3.1 Gen 1

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USB Type C Finished Product



Cobb Part No.	Product Name	Support to
CTCSGA02BDC000AB0	USB Type C to A(Legacy) Adapter(ID-B)	USB 3.1 Gen 1



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