



USB  
3.0

USB 3.0 is the next major revision to the Universal Serial Bus standard. This new revision promises higher data transfer rates (up to 4.8Gbps) with increased maximum bus power and is backwards compatible to USB 2.0.

## PART NUMBER REFERENCE



### Select Connector Type: End "1"

- Type A, Friction Fit = 1
- Type A, w/Thumbscrews = 1B
- Straight MICRO-B Exit with Thumbscrews = 2
- MICRO-B R/A **UP** w/Recessed Screws = 3
- MICRO-B R/A **DOWN** w/Recessed Screws = 4
- MICRO-B Exit Right w/Recessed Screws = 5
- MICRO-B Exit Left w/Recessed Screws = 6
- Type A with Thumbscrews = 7
- Type B with Thumbscrews = 8
- Type B Friction Fit = 9
- Type A Receptacle Friction Fit = 10
- Type A Receptacle w/Threaded Inserts = 11
- Type B /w/Threaded Inserts = 12

### Select Cable Type:

- Static (\*Up to 5m) = 1
- Robotic (\*Up to 5m) = 2
- Extended Distance (\*Up to 7m) = 3
- Chain Flex (\*Up to 5m) = 4

### Select Connector Type: End "2"

- Type A, Friction Fit = 1
- Type A, w/Thumbscrews = 1B
- Straight MICRO-B Exit with Thumbscrews = 2
- MICRO-B R/A **UP** w/Recessed Screws = 3
- MICRO-B R/A **DOWN** w/Recessed Screws = 4
- MICRO-B Exit Right w/Recessed Screws = 5
- MICRO-B Exit Left w/Recessed Screws = 6
- Type A with Thumbscrews = 7
- Type B with Thumbscrews = 8
- Type B Friction Fit = 9
- Type A Receptacle Friction Fit = 10
- Type A Receptacle w/Threaded Inserts = 11
- Type B /w/Threaded Inserts = 12

### \*Length in Meters:

Temp: 9-29-20

## CONNECTOR TYPE OPTIONS:

## Additional Dimensional Information:

For additional information regarding the physical dimensions of our connector profiles, please visit our Web-Site: [www.ComponentsExpress.com](http://www.ComponentsExpress.com) or ask one of our sales associates and we will be happy to assist.

1



Type A  
Friction Fit

1B



Type A  
W/Thumbscrew

2



Type A  
W/Thumbscrews

3



Micro B, Straight  
W/Thumbscrews

4



Micro B, R/A Up  
W/Recessed Screws

5



Micro B, R/A Down  
W/Recessed Screws

6



Micro B, Exit Right  
W/Recessed Screws

7



Micro B, Exit Left  
W/Recessed Screws

8



Type B  
W/Thumbscrews

9



Type B  
Friction Fit

10



Type A Receptacle  
Friction Fit

11



Type A Receptacle  
w/Threaded Inserts

12



Type B Receptacle  
w/Threaded Inserts

Temp: 9-29-20

# USB 3.0 & USB 3.1 Type #: 1

SPEC No.:	(7/0.127TA*1PR+EAM)*2+(7/0.127TA*1PR+A)+7/0.16TA*2C+AB 85% USB 3.0						
Customer		Customer NO.		8 Code:	0	Sample NO.:	Y161015007
UL File NO.	E101344	UL Style:	UL 2725	Date:	10/21/16	Spec NO.:	0
CSA File NO.		CSA Style:		Edition:	Original edition	Operation NO.:	
Structure		Structure A		Structure B		Structure C	
Conductors	Structure AWG	AWG	28# (7/36)	28# (7/36)	26# (7/34)		
	Material	--	Tinned Copper	Tinned Copper	Tinned Copper		
	O.D.	mm	0.38 Ref	0.38 Ref	0.471 Ref		
Insulation	Material	--	FOAM-SKIN-PE	FOAM-PE	SR-PVC		
	Diameter	mm	0.89±0.07	0.84±0.05	1±0.07		
	Average Thickness	mm	0.255	0.230	0.265		
	Color	--	AS Color Code	AS Color Code	AS Color Code		
Twist	Direction	--	Left (Z)	Left (Z)	--		
	Diameter	mm	1.78 Ref	1.4 Ref	--		
Drain wire	Structure AWG	AWG	28# (7/36)				
	Material	--	Tinned Copper				
Shielding 1	Material	--	AL-foil/mylar	AL-foil/mylar	--		
	Conductive Side	--	Inside	Inside	--		
	Overlap Rate	%	25 MIN	25 Ref	--		
Separator 2	Material	--	Hot-melt-Mylar	--	--		
	Conductive Side	--	--	--	--		
	Overlap Rate	%	25 MIN	--	--		
Layer	Direction	--	Left (Z)				
	Pitch	mm	75 Ref				
	Diameter	mm	3.9 Ref				
Shielding 3	Material	--	--	AL-foil/mylar	--		
	Conductive Side	--	--	Outside	--		
	Overlap Rate	%	--	25 MIN	--		
Shielding 4	Shield	--	Braid				
	Material	--	Tinned Copper				
	Coverage Rate	%	85 MIN				
Jacket	Material	--	PVC				
	Diameter	mm	5.5 ± 0.19				
	Min Thickness	mm	0.50				
	Extrusion	--	Semi substantiate				
	Externals	--	Plane				
	Color	--	Z001 (BLACK)				

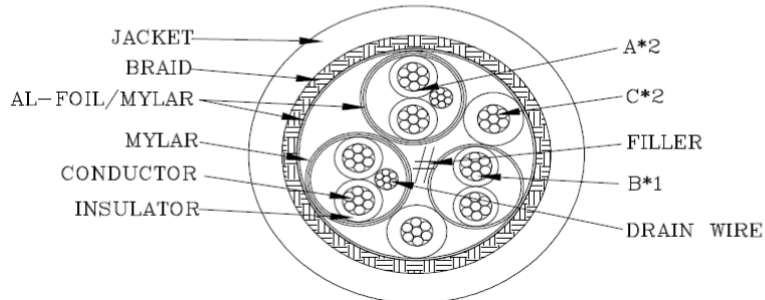
# USB 3.0 & USB 3.1 Type #: 1

SPEC No.:	(7/0.127TA*1PR+EAM)*2+(7/0.127TA*1PR+A)+7/0.16TA*2C+AB 85% USB 3.0						
Customer		Customer NO.		8 Code:	0	Sample NO.:	Y161015007
UL File NO.	E101344	UL Style:	UL 2725	Date:	10/21/16	Spec NO.:	0
CSA File NO.		CSA Style:		Edition:	Original edition	Operation NO.:	



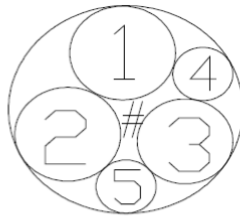
**COMPONENTS EXPRESS, INC.**  
10330 Argonne Woods Drive, Ste100  
Woodridge, IL 60517

Y161015007 (E0894)  
Rev. A, 10/26/2016, 8/12/19



#### COLOR CODE

1. YELLOW\*BLUE
2. ORANGE\*VIOLET
3. WHITE\*GREEN
4. BLACK (P570)
5. RED (P572)



Pg. 2/3

**MINIMUM BEND RADIUS: 10X O.D.**

# USB 3.0 & USB 3.1 Type #: 1

SPEC No.:	(7/0.127TA*1PR+EAM)*2+(7/0.127TA*1PR+A)+7/0.16TA*2C+AB 85% USB 3.0						
Customer		Customer NO.		8 Code:	0	Sample NO.:	Y161015007
UL File NO.	E101344	UL Style:	UL 2725	Date:	10/21/16	Spec NO.:	0
CSA File NO.		CSA Style:		Edition:	Original edition	Operation NO.	

## Electric Characters

- Voltage rating :30V
- Temperature rating : 80°C
- Spark test: AC- 500V / 0.15 sec MIN.
- Dielectric strength : AC- 750V/1sec MIN.
- Insulation resistance :FOAM-SKIN-PE, FOAM-PE: DC- 500V 100 MΩ/KM MIN. at 20°C  
SR-PVC:DC-500V 10MΩ/KM MIN. at 20°C
- Conductor resistance : 28AWG-244 Ω/KM MAX. at 25°C  
26AWG-153 Ω/KM MAX. at 25°C

## Transmission Characters

- Differential impedance:  $90 \pm 7 \Omega$  (1PR+EAM)\*2
- Attenuation : (1PR+EAM)\*2

Frequency ( MHz)	100	625	1250	2500	5000	7500
Insertion Loss (MAX) dB/cable	-1.5	-3.1	-5	-7.5	-16.25	-25

- Intra-pair skew:15PS/M
- Differential to Common Mode Conversion: -20 dB@(2.0m)
- Conductor resistance unbalance : 5%(1PR:GREEN\*WHITE)
- Attenuation:(1PR:GREEN\*WHITE)

Frequency(MHz)	0.512	0.772	1.00	4.00	8.00	12.0	24.0	48.0	96.0	200.0	400.0
Attenuation(MAX)dB/cable	0.130	0.150	0.20	0.390	0.570	0.760	0.950	1.350	1.90	3.20	5.80

- Impedance(1PR:GREEN\*WHITE) :  $90 \Omega \pm 15\%$  @ TDR (differential)
- Propagation Delay(1PR:GREEN\*WHITE) : 5.2ns/M MAX
- Propagation Delay skew(1PR:GREEN\*WHITE): 100PS MAX

## Physical Characters

- Flame test of cable:
  - VW-1
- Tensile strength test ( before aging) :
  - Sheath : > 1.05kg/mm<sup>2</sup>
  - Insulation : > 1.12kg/mm<sup>2</sup>
- Tensile strength test ( after aging):
  - Sheath: > 70%
  - Insulation: > 70%
- Elongation( before aging):
  - Sheath : > 100%
  - Insulation : > 100%
- Elongation( after aging):
  - Sheath : > 65%
  - Insulation : > 70%
- Requirements for green environment protection: Accord with RoHS



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**Y161015007 (E0894)**

Rev. A, 10/21/2016, 8/12/19





**USB 3.0 Cable Type #: 3**

SPECIFICATION:		(1P*24#+DAM)2C+1P*26#+2C*18#+F+AL+B / UL2725	
ITEM		SPECIFICATION	
CONDUCTOR	AWG	24AWG	18AWG
	MATERIAL	TINNED COPPER	TINNED COPPER
	COND.SIZE	7/0.20±0.008MM	43/0.16±0.008MM
	MIN.AVG.THICK	0.35MM	0.23MM
INSULATION	MATERIAL	FM-PE+SKIN	PVC
	O . D	1.35±0.10MM	1.80±0.10MM
	N.O.	1P*2	2C
DRAIN	AWG	24AWG	/
	MATERIAL	TINNED COPPER	/
	SIZE	7/0.20±0.008MM	/
	COVERAGE	100%	/
	OVERLAP	25% MIN	/
	COVERAGE	100%	/
	OVERLAP	25%MIN	/
	N.O.	(1P+DAM)2C	2C
Face Outside	COVERAGE	100%	
AL.MYLAR	OVERLAP	25% MIN	
Hot-MYLAR	COVERAGE	100%	
	OVERLAP	25%MIN	
	N.O.	(1P+DAM)2C	
Face Outside	COVERAGE	100%	
AL.MYLAR	OVERLAP	25% MIN	
DRAIN	MATERIAL	/	
	SIZE	/	
BRAID	MATERIAL	TINNED COPPER	
COPPER	SIZE	24*9/0.10±0.008MM (COVERAGE :85% MIN)	
	MIN.AVG.THICK	0.50MM	
JACKET	MATERIAL	PVC	
	COLOUR	BLACK	
	O . D	7.50±0.20MM	

ELECTRICAL CHARACTERISTICS		PHYSICAL PROPERTIES OF JACKET	
<b>USB2.0 UTP</b>	<b>USB3.0 STP*2P</b>	1. Tensile Strength: Unaged: 1500PSI min Aged: 70% min	
1. Rating Temperature: 80°C ; VOLTAGE: 30V	1. Differential Impedance: 90±7Ω	2. Elongation: Unaged: 100% min Aged: 65%	
2. Conductor Resistance: at 20°Cmax	2. Intra-Pair Skew : 15ps /m	3. Heat shock test: NO CRACKING	
24AWG: 94.2Ω/km; 18AWG: 23.2Ω/km	3. Attenuation/Insertion Loss:	4. Cold bend test: NO CRACKING	
3. Insulation Resistance: 10MΩ/km min at 20°C dc 500V	1.5dB/1.5M@0.1GHz	5. Deformation test: MAX 50%	
4. Propagation Delay Skew: 100ps (Full-/High-speed only)	5.0dB/1.5M@1.25GHz	6. Flame test: PASS VW-1	
5. Time Delay: 5.2ns/m(max.)	7.5dB/1.5M@2.5GHz		
6. Impedance: 90±15%Ω	25dB/1.5M@7.5GHz		
7. Attenuation(Full/High-speed only):	4. Differential to common mode:		
	20dB/cable @ 0.1-7.5GHz		
	5. NEXT:		
	32dB@0.1GHz		
	32dB@2.5GHz		
	23dB@3.0GHz		
	23dB@7.5GHz		
F(MHz)	Attenuation(dB)	F(MHz)	Attenuation(dB)
0.064	0.08	24	0.95
0.256	0.11	48	1.35
0.512	0.13	96	1.90
0.772	0.15	200	3.20
1	0.20	400	5.80
4	0.39		
8	0.57		
12	0.76		

CONSTRUCTION		D.W.G	
JACKET			
BRAID COPPER			
MYLAR			
FILLER			
CONDUCTOR			
INSULATION			
AL.MYLAR			
DRAIN			

**COLOUR CODE:**

(1P\*24#+DAM)2C:

1. YELLOW\*BLUE  
2. ORANGE\*PURPLE


1P\*26#: GREEN \*WHITE

2C\*18#: 1.BLACK 2.RED

**MINIMUM BEND RADIUS: 10X O.D.**



**COMPONENTS EXPRESS, INC.**  
10330 Argonne Woods Drive, Ste100  
Woodridge, IL 60517

**(E1013), 8/12/19**

APPROVED	CUSTOMER	DATE
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DRAWING	CHEN	



**USB 3.0 Cable Type #: 4**

SPECIFICATION:		(1P*26#+ADBP)2C+1P*26#+1P*24#+FPB	
ITEM	SPECIFICATION		
CONDUCTOR	26AWG MATERIAL: TINNED COPPER COND.SIZE: 19/0.10±0.008 mm MIN.AVG.THICK: 0.23 mm	26AWG TINNED COPPER 19/0.10±0.008 mm 0.23 mm	24AWG TINNED COPPER 41/0.08±0.008 mm 0.23 mm
INSULATION	MATERIAL: FM-PE+SKIN O . D : 1.20±0.10 mm N O : IP*2 COVERAGE: 100% OVERLAP: 25% MIN	HD-PE 0.90±0.05 mm IP /	HD-PE 0.95±0.05 mm IP /
Face Outside AL.MYLAR DRAIN	MATERIAL: TINNED COPPER SIZE: 19/0.08±0.008 mm	TINNED COPPER /	TINNED COPPER /
BRAID COPPER	MATERIAL: TINNED COPPER SIZE: 16*6/0.08±0.008MM COVERAGE: 90%MIN COVERAGE: 100% OVERLAP: 25%MIN N O : (1P+ADBP)2C COVERAGE: 100% OVERLAP: 25% MIN	/	/
Foamed PP film	MATERIAL: TINNED COPPER SIZE: 16*10/0.08±0.008MM (Coverage : 85%MIN) MIN.AVG.THICK: 0.76 mm	/	/
Foamed PP film	MATERIAL: MIXING PVC COLOUR: PURPLE O . D : 7.00 ± 0.30 mm	/	/
BRAID COPPER	MATERIAL: TINNED COPPER SIZE: 16*10/0.08±0.008MM (Coverage : 85%MIN) MIN.AVG.THICK: 0.76 mm	TINNED COPPER 16*10/0.08±0.008MM (Coverage : 85%MIN) 0.76 mm	TINNED COPPER 16*10/0.08±0.008MM (Coverage : 85%MIN) 0.76 mm
JACKET	MATERIAL: MIXING PVC COLOUR: PURPLE O . D : 7.00 ± 0.30 mm	MIXING PVC PURPLE 7.00 ± 0.30 mm	MIXING PVC PURPLE 7.00 ± 0.30 mm
<b>ELECTRICAL CHARACTERISTICS</b>			
<b>USB2.0 UTP</b>		<b>USB3.0 STP*2P</b>	
1. Rating Temperature: 80°C ; VOLTAGE: 30V 2. Conductor Resistance: at 20°C max 26AWG: 150Ω/km; 3. Insulation Resistance: 10MΩ/km min at 20°C dc 500V 4. Propagation Delay Skew: 100ps (Full-/High-speed only) 5. Time Delay: 5.2ns/m(max) 6. Impedance: 90±15%Ω 7. Attenuation(Full/High-speed only):		1. Differential Impedance:90±7Ω 2. Intra-Pair Skew : 15ps /m 3. Attenuation/Insertion Loss: 1.5dB@0.1GHz 5.0dB@1.25GHz 7.5dB@2.5GHz 25dB@7.5GHz 4. Differential to common mode: 20dB/cable @ 0.1~7.5GHz	
F/MHz	Attenuation(dB)	F(MHz)	Attenuation(dB)
0.064	0.08	24	0.95
0.256	0.11	48	1.35
0.512	0.13	96	1.90
0.772	0.15	200	3.20
1	0.20	400	5.80
4	0.39		
8	0.57		
12	0.76		
<b>PHYSICAL PROPERTIES OF JACKET</b>			
MINIMUM BEND RADIUS: 10X O.D.			
<b>CONSTRUCTION D.W.G</b>			
<b>COLOUR CODE:</b>			
(1P*26#+ADBP)*2C: 1. YELLOW * BLUE 2. ORANGE * PURPLE IP*26#: 1.GREEN *WHITE IP*24#: 1. BLACK RED			
<b>COMPONENTS EXPRESS, INC.</b> 10330 Argonne Woods Drive, Ste 100 Woodridge, IL 60517			
<b>YS2018111302, 8/12/19</b>			
<b>APPROVED</b>	<b>CUSTOMER</b>	奕樹	
<b>CHECKED</b>	<b>REV</b>	A / 1	
<b>DRAWING</b>	<b>CHEN</b>	<b>DATE</b>	2018/11/13