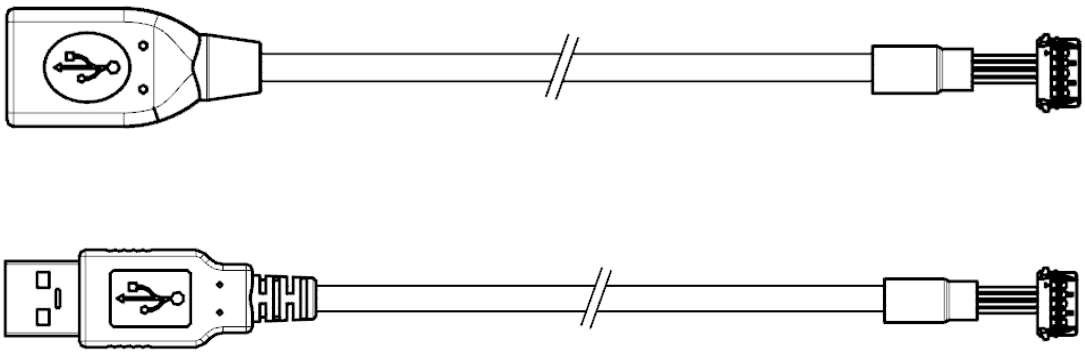
PRODUCT SPECIFICATION

TITLE

USB 2.0 to Pico-lock cable assembly



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REVISION:	ECR/ECN INFORMATION:		SHEET No.
A	EC No: DATE: **06/28/2018**	**USB 2.0 to Pico-lock assembly**	**1** of **6**

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1.0 SCOPE

This specification covers the requirements for USB 2.0 to Pico-lock Cable Assy.

2.0 PRODUCT DESCRIPTION

See the sales drawing for product shape; dimension and materials, the other section of this specification for the necessary referenced document and specification. The part number serial covered in this specification are as follow table:

Molex Series	Detail
206107	USB 2.0 to Pico-lock cable assembly

3.0 PRODUCT SPECIFICATIONS

3.1 Rated voltage (Maximum): 30V DC
3.2 Rated current (Maximum): 1.0A for power wire
0.5A for signal wire
3.3 Temperature
Operating temperature range: 0°C to +50°C
Storage temperature range: -20°C to +60°C

4.0 QUALIFICATION

Laboratory conditions and sample selection are in accordance with EIA-364-1000.01

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5.0 PERFORMANCE

5.1 ELECTRICAL CHARACTERISTICS

Test Description	Test Condition	Performance Requirement
Low Level Contact Resistance (LLCR) (USB end)	EIA 364-23 The low level contact resistance (LLCR) measurement is made across the plug and receptacle mated contacts and does not include any internal paddle cards or substrates of the plug or receptacle. The test boards shall be provided with the connectors to be tested. Measure at 20 mV (max) open circuit at 100 mA.	The following requirements apply to the power and signal contacts: 30mΩ(max) initial 10 mΩ maximum change for post test LLCR
Insulation Resistance	Test voltage=300±30V DC Mate/Un-mate connector, apply 300(Type A) VDC adjacent terminals or ground. (EIA-364-21)	20M ohms Min. Between adjacent contacts and contacts and shell
Dielectric Withstanding Voltage	Test voltage 100 VAC,1 Min. (EIA-364-20)	No breakdown
Cable Assembly Voltage Drop	The maximum rated VBUS current of the cable assembly shall be used. The measurement includes representative receptacles at both ends of the cable assembly, mounted on test fixtures. 5V nominal at 500mA.	125mV max drop across power pair from pin to pin.
Cable Impedance (USB end)	Connect the cable to test fixture, measure by TDR. Measurement configuration is on next page. Calculates by cable impedance=(2n rate +5n rate)/2	USB 2.0 spec. 1.Differential impedance (rt=200ps 10~90%) 76.5 Ohm to 103.5 Ohm 2.Com. Impedance(rt=200ps 10~90%)) 21 Ohm to 39 Ohm
Attenuation (USB end)	Connect connector to attenuation test fixture, measure by network Analyzer. Measurement configuration is next page.	-1.90 dB Max @ 100.0 MHz -3.20 dB Max @ 200.0 MHz -5.80 dB Max @ 400.0 MHz
Propagation Delay (USB end)	Connect the cable to test fixture, measure by TDR. Measurement configuration is next page.	26.0ns/cable max.

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Propagation Delay Skew (USB end)	Connect the cable to test fixture, measure by TDR. Measurement configuration is next page.	USB 2.0 spec. 100ps/ cable max

5.2 MECHANICAL CHARACTERISTICS

Test Description	Test Condition	Performance Requirement
Appearance (cable assy')	EIA 364-18 Visual, dimensional and functional inspection in accordance with the USB quality inspection plans	Must meet the minimum requirements specified by the most current version of specification.
Cable Flexing (USB end)	EIA 364-41, Condition I Weight :200g Angle:±90 degree Speed :13 cycles/minute Flexing:100cycles.	No physical damage and discontinuity over 1 microsecond during flexing shall occur to the cable assembly
Mating Force	EIA 364-13 The mating force test shall be done at a maximum rate of 12.5 mm (0.492") per minute.	● USB end 35N maximum (No burs or sharp edges are allowed on top of locking latches) ● Pico-lock end 15 Newtons Maximum (Insert and withdraw connectors 30 cycles repeatedly)
Un-mating Force	EIA 364-13 The un-mating force test shall be done at a maximum rate of 12.5 mm (0.492") per minute.	● USB end 10 Newtons minimum at a maximum rate of 12.5 mm (0.492") per minute. ● USB end 1.1 Newtons Minimum (Insert and withdraw connectors 30 cycles repeatedly)
Cable Pull-Out (USB end)	EIA 364-38 Test Condition A The cable assembly shall is subjected to a 40N axial load for a minimum of 1 minute while clamping one end of the cable plug.	No visible physical damage and no electrical discontinuity over 1 microsecond to the cable assembly.

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Durability or Insertion/Extraction Cycles (USB end)	EIA 364-09 Cycle rate of 500 cycles per hour if done automatically and 200 if manual cycle	1,500 cycles minimum. Conductor resistance and dielectric withstanding voltage shall be checked to be within spec after the durability cycles

5.3 ENVIRONMENTAL CHARACTERISTIC

Test Description	Test Procedure	Performance Requirement	
Temperature Life	The object of this test procedure withstand The temperatures -20ºC±2/48 hours and 60 ºC±2/48 hours with applied voltage.	No physical damage and product function is good	
Salt Spray (USB end)	Mate connector and expose to the following salt mist condition. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified measurements shall be performed. Nacl solution: Concentration: 5%±1%. Spray time: 24h±1h. Ambient Temperature: 35 ºC ±2ºC. EIA-364-26	Appearance	No Damage
		Contact Resistance	Change form initial requirement : Contact:30 milliohm Max. Shell:50 milliohm Max.

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