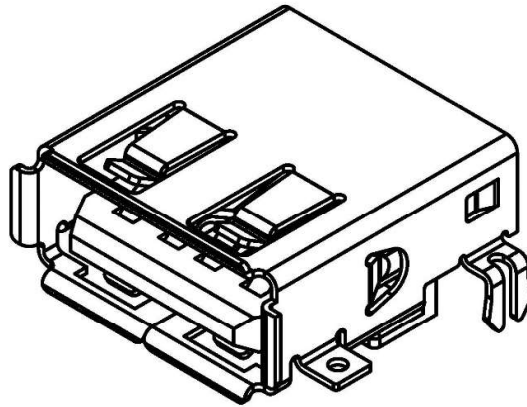


# PRODUCT SPECIFICATION

<b>Part Number</b>	USB1020	<b>Rev</b>	B	<b>Date</b>	10/12/14		
<b>Product Description</b>	USB Receptacle, Type A, 4 Pin, Mid Bottom Mount, 1.48mm Offset, Through Hole, Horizontal, with Shell Stakes and SMT Holdowns			<b>Page</b>	1		
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## 1.0 SCOPE.

This specification covers performance, tests and quality requirements for the USB Receptacle USB1020 (Type A, 4-Pin, Mid Bottom Mount, 1.48mm Offset, Through Hole, Horizontal, with Shell Stakes and SMT holdowns).

## 2.0 PRODUCT NAME AND PART NUMBER.

USB Receptacle, Type A, 4 Pin, Through Hole, Horizontal, USB1020.

## 3.0 PRODUCT SHAPE, DIMENSIONS AND MATERIAL.

Please refer to drawings.

## 4.0 RATINGS.

- 4.1 Current rating ..... 1.5 A
- 4.2 Voltage rating ..... 30 V
- 4.3 Operating Temperature Range ..... -40°C TO +85°C

## 5.0 TEST AND MEASUREMENT CONDITIONS.

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Paragraph 6.0. All tests are performed in ambient conditions unless otherwise specified.

## 6.0 PERFORMANCE.

Item	Test Condition	Requirement
Examination of Product	Visual, dimensional and functional inspection as per quality plan.	Product shall meet requirements of product drawing and specification.

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## 6.1 Electrical Performance.

Item	Test Condition	Requirement
Low level Contact Resistance	Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max. In accordance with EIA-364-23.	30 mΩ Max.
Insulation Resistance	Impressed voltage 500 VDC. Test between adjacent circuits of unmated connector. In accordance with EIA-364-21.	1000 MΩ Min.
Dielectric withstanding Voltage	500V AC for 1minute Test between adjacent circuits of unmated connector and in accordance with EIA-364-20.	No creeping discharge or flashover shall occur. Current leakage: 0.5 mA Max.

## 6.2 Mechanical Performance.

Item	Test Condition	Requirement
Insertion Force	Operation Speed: 12.5 mm/min. Measure the force required to mate connector and in accordance with EIA-364-13.	3.57KGf (35N) Max.
Extraction Force	Operation Speed: 12.5mm/min. Measure the force required to unmate connector and in accordance with EIA-364-13.	1.02KGf(10N) Min.
Durability	Operation Speed: 200 cycle/Hour Durability Cycles: 1500 Cycles In accordance with EIA-364-09.	Contact Resistance 30 mΩ.
Vibration	Subject mated connectors to 10-55-10 Hz traversed in 1minutes at 1.52mm amplitude 2 Hours each of 3 mutually perpendicular planes. 100mA Max. applied. In accordance with EIA-364-28D.	No electrical discontinuity greater than 1 μsec. shall occur. No damage to product.
Mechanical Shock	Accelerate Velocity: 30Gs Waveform: Half-sine shock plus Duration: 11msec Three shocks in each direction applied along three mutually perpendicular planes for a total of 18 shocks. In accordance with EIA-364-27	No electrical discontinuity greater than 1 μsec. shall occur. No damage to product.

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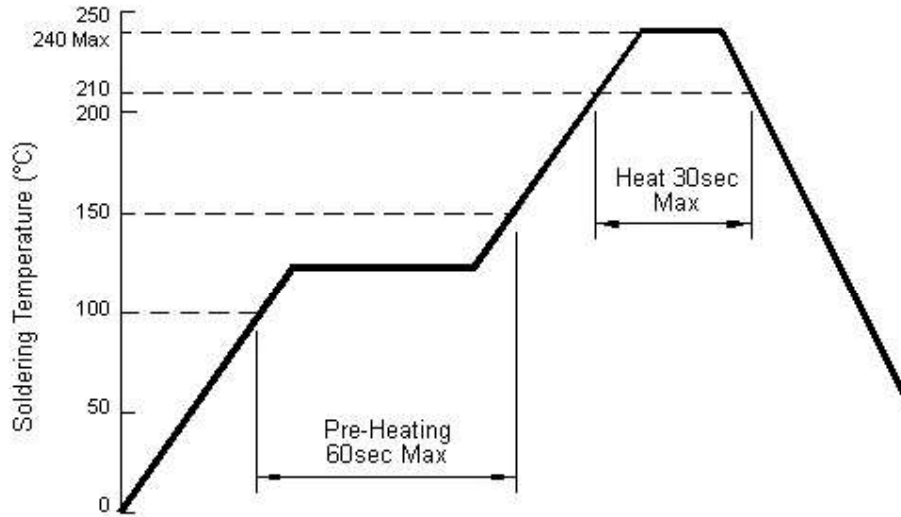
Item	Test Condition	Requirement
Contact Retention Force	Measure the contact retention force with Tensile strength tester.	1.0 KGf Min.

### 6.3 Environmental Performance and Others.

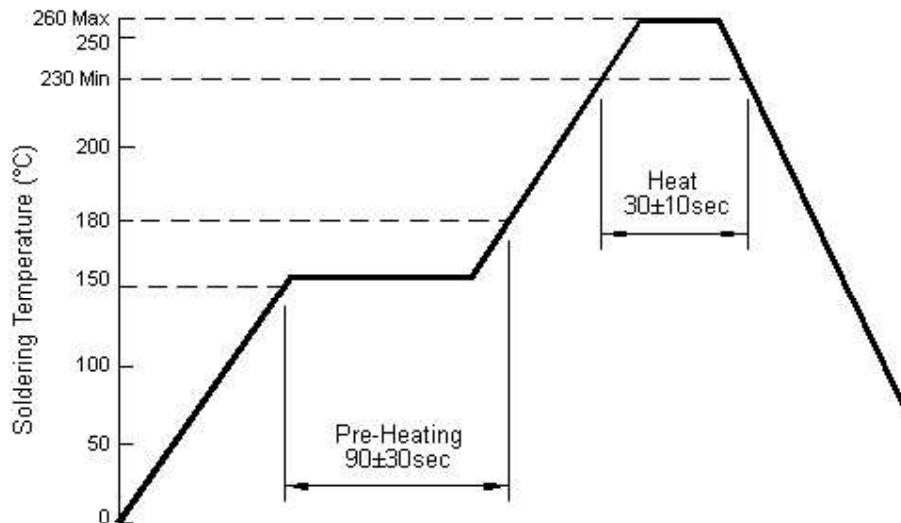
Item	Test Condition	Requirement
Resistance to Wave Soldering Heat	Pre Heat: 150~180°C, 90±30sec. Heat: 230°C Min., 30±10sec. Peak Temp.: 260+0/-5°C, 20~40sec. Duration: 3 cycles	No physical damage shall occur. (Lead-Free)
Solderability	Solder pot temperature: 265±5°C, 5sec	The inspected area of each lead must have 95% solder coverage minimum.
Thermal Shock	Mated Connector -55°C and +85°C Perform this a cycle, repeat 10 cycles. In accordance with EIA-364-32.	Contact Resistance 30 mΩ.
Humidity-Temperature Cycle	Mated Connector 40°C, 90~95% RH, 168hours. In accordance with EIA-364-31.	Contact Resistance 30 mΩ.
Salt Spray	Subject mated connectors to 35+/-2°C and 5+/-1% salt condition for 8hours. After test, rinse the sample with water and recondition the room temperature for 1 hour. In accordance with EIA-364-26.	No detrimental corrosion allowed in contact area and base metal exposed.
Resistance to Reflow Soldering Heat	Mount Connector, place in reflow oven and expose to the temperature profiles shown in fig 1 and 2.	No evidence of physical damage or abnormalities adversely affecting performance.

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**Fig 1 – Temperature profile of Reflow Soldering at 250°C Max.**



**Fig 2 – Temperature profile of Reflow Soldering at 260°C Max.**

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## 7.0 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test Item	Test Group							
	A	B	C	D	E	F	G	H
Examination of Product	1, 9	1, 9	1, 4	1, 5	1, 5	1, 3	1, 3	1
Contact Resistance	4, 8	3, 7		2, 4	2, 4			
Dielectric Withstanding Voltage	3, 7							
Insulation Resistance	2, 6							
Mating Force		2, 6						
Unmating Force		4, 8						
Durability		5						
Vibration			2					
Mechanical Shock			3					
Contact Retention Force								2
Solderability							2	
Resistance to Soldering Heat						2		
Thermal Shock				3				
Humidity Temperature Cycling	5							
Salt Spray					3			

Notes: Numbers indicate sequence in which tests are performed. Discontinuities shall not take place in this test group, during tests.

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Revision details:-

Revision	Information	Page	Release Date
A	Specification Released	-	18/07/11
B	Offset definition changed from 4.98 to 1.48mm	Header & Page 2	10/12/14

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