CJTconn 長江連接器有限公司 CHANGJIANG CONNECTORS CO.,LTD.

PRODUCT SPECIFICATION

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			APPROVED	CHECKED	WRITTEN
A3	MODIFY PART NO.	2023.04.11	BY	BY	BY
A2	REVISE	2021.09.29	***Jack Yin***	***Diankui Wan***	***Dengchun Yi***
A1	REVISE	2021.08.09			
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REV.	DESCRIPTION	DATE	DOCUMENT NO: PS-A1501-002		

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PRODUCT SERIES NAME：A1501 SERIES

1.SCOPE:

This specification covers the requirements for product performance of 1.50 mm pitch wire to wire or wire to board connector series.

2.PART NAME & PART NUMBERS

Part name	Part number
Housing	A1501H A1501HM
Terminal	A1501-T(-H) A1501M-T
Wafer	A1501WV A1501WR

3. CONSTRUCTION. DIMENSIONS . MATERIAL & SURFACE FINISH

Construction and dimensions shall be in accordance with the referenced drawings.
Material and surface finish shall be as specified below.

Part name		Material	Surface finish
Housing		Nylon 66	UL94V-0
Terminal		Phosphor bronze	Tin over Nickel/Gold over Nickel
Wafer(DIP)	Post	Brass	Tin over Nickel/Gold over Nickel
	Body	Nylon 66	UL94V-0
Wafer(SMD)	Post	Brass	Tin over Nickel/Gold over Nickel
	Body	Nylon 6T/LCP	UL94V-0

4. RATINGS & APPLICABLE WIRES

Item	Standard		
Rated Voltage (Max.)	100V AC DC		Insulation O.D. 0.78~1.50mm
Rated Current (Max.) and Applicable Wires	AWG #24	2.0A AC DC	
	AWG #26	1.5A AC DC	
	AWG #28	1.0A AC DC	
	AWG #30	1.0A AC DC	
	AWG #32	0.8A AC DC	
Ambient Temperature Range	-40℃~105℃*		

*: Including terMinal temperature rise

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5. CONDITIONS：

The conditions shall be in accordance with the referenced data of next table.

Number	Item	Requirement
(1)	Bend up	6°Max.
	Bend down	4°Max.
	Twisting	4°Max.
	Rolling	5°Max.
(2)	Bell mouth (flare)	0.1-0.3 mm
(3)	Cut-off tab length	0.3 mm Max.
(4)	Extruded wire length	0.2-0.5 mm
(5)	Seam	Seam shall not be opened and no wire allowed out of crimping area
(6)	Wire strip length	1.7-2.0 mm ref.
(7)	Lance height	0.3 mm ref.

After crimping，the crimped areas [(5)、(6)] should be as follows.

Wire Size (AWG)	Terminal Part Number	Conductor(mm)		Insulation(mm)		Crimp Strength (kgf)
		Crimp Width	Crimp Height	Crimp Width	Crimp Height	
#24	A1501-T A1501-T-H A1501M-T	0.90	0.69~0.78	1.10	1.35	3.00(Min.)
#26			0.64~0.73		1.25	2.00(Min.)
#28			0.58~0.67		1.20	1.00(Min.)
#30			0.53~0.62		1.15	0.50(Min.)
#32			0.44~0.53		1.17	0.30(Min.)

The crimp width at the conductor part 、crimp width & crimp height at the insulation part is a reference value, so adjust it according to a wire to be used。

6. PERFORMANCE

6.1 ELECTRICAL PERFORMANCE

Test Description		Procedure	Requirement
6-1-1	Contact Resistance	Mate connectors, measure by dry circuit, 20mV Max. 10mA. (Based upon JIS C5402 5.4)	20mΩ Max.
6-1-2	Insulation Resistance	Mate connectors, apply 250V DC between adjacent terminal or ground. (Based upon JIS C5402 5.2/MIL-STD-202 Method 302 Cond. B)	500MΩ Min.
6-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 500V AC (rms) for 1 minute between adjacent terminal or ground. (Based upon JIS C5402 5.1/MIL-STD-202 Method 301)	No Breakdown
6-1-4	Contact Resistance on Crimped Portion	Crimp the applicable wire to the terMinal, measured by dry circuit, 20mV Max, 10 mA Max.	5mΩ Max.

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6.2 MECHANICAL PERFORMANCE

6-2-1	Insertion & Withdrawal Force (With Lock)	Insert and withdraw connectors at the speed rate of 25 ± 3mm/minute.		Refer to section 7
6-2-2	Crimping Pull Out Force	Fix the crimped terminal, apply axial pull out force on the wire at the speed rate of 25 ± 3mm/minute. (Based upon JIS C5402 6.8)	AWG #24	29.4N/3.0kgf Min.
			AWG #26	19.6N/2.0kgf Min.
			AWG #28	9.8N/1.0kgf Min.
			AWG #30	4.9N/0.5kgf Min.
			AWG #32	2.9N/0.3kgf Min.
6-2-3	Crimp Terminal Insertion Force	Insert the crimped terminal into the housing. Testing speed: 25 ± 3mm/minute.		N/A
6-2-4	Terminal/Housing Retention Force	Apply axial pull out force at the speed rate of 25 ± 3mm/minute on the terminal assembled in the housing.		0.7kgf Min.
6-2-5	Locking Strength	A socket housing and a header shall be mated. A load shall be applied between them.The load to come them off etch other shall be measured. Testing speed: 25 ± 3mm/minute		N/A
6-2-6	Header Terminal Retention Force	Apply axial push force at the speed rate of 25 ± 3mm/minute.		0.7kgf Min.
6-2-7	Durability	When mated up to 50 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	30mΩ Max.
6-2-8	Vibration	Amplitude: 1.52mm P-P Sweep time: 10-55-10 Hz in 1 minute Duration: 2 hours in each X.Y.Z. axes (Based upon JIS C 60068-2-6/MIL-STD-202 Method 201)	Appearance	No Damage
			Contact Resistance	30mΩ Max.
			Discontinuity	1μsec. Max.
6-2-9	Physical Shock	Mate connectors and shock at 50 g's with ½ sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes (18 shocks total).	Appearance	N/A
			Contact Resistance	
			Discontinuity	

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6.3 ENVIRONMENTAL PERFORMANCE AND OTHERS

Test Description		Procedure		Requirement
6-3-1	Temperature Rise	Carrying rated current load. (Based upon UL 498)	Temperature Rise	30°C Max.
6-3-2	Heat Resistance	85 ± 2°C, 250 hours (Based upon JIS C0021/MIL-STD-202 Method 108A Cond. A)	Appearance	No Damage
			Contact Resistance	30mΩ Max.
6-3-3	Humidity	Temperature: 40 ± 2°C Relative Humidity: 90 ~ 95% Duration: 96 hours (Based upon JIS C0022/MIL-STD-202 Method 103B Cond. B)	Appearance	No Damage
			Contact Resistance	30mΩ Max.
			Insulation Resistance	300MΩ Min.
			Dielectric Withstanding Voltage	Must meet 6-1-3
6-3-4	Temperature Cycling	25 cycles of: a) - 55°C 30 minutes b) +85°C 30 minutes (Based upon JIS C0025)	Appearance	No Damage
			Contact Resistance	30mΩ Max.
6-3-5	Salt Spray	24 hours exposure to a salt spray from the 5 % solution at 35 ± 2°C. (Based upon JIS C0023/MIL-STD-202 Method 101D Cond. B)	Appearance	No Damage
			Contact Resistance	30mΩ Max.
6-3-6	Hydrogen Sulfide Gas	Concentration: 3 ± 1ppm. Temperature: 40 ± 2°C Relative Humidity: 80±5% 96 hours	Appearance	No Damage
			Contact Resistance	30mΩ Max.
6-3-7	NH_3 Gas	40 minutes exposure to NH3 gas evaporating from 28% Ammonia solution.	Appearance	No Damage
			Contact Resistance	20mΩ Max.
6-3-8	Solderability	Soldering Time: 3~5 sec. Solder Temperature: 245 ± 5°C	Solder Wetting	95% of immersed area must show no voids, pin holes
6-3-9	Resistance to Soldering Heat	<u>Normal materials</u> Soldering Time:3~5 sec. Solder Temperature: 250± 5°C <u>High temperature resistant materials</u> Soldering Time:3~5 sec. Solder Temperature: 260 ± 5°C	Appearance	No Damage

7. INSERTION AND WITHDRAWAL FORCE

unit:N

Number of Circuits (W-B)	Insertion (Max.)	Withdrawal (Min.)	
		1 th	50 th
2P	24.5	3.9	2.0
3P	29.4	4.9	2.0
4P	34.3	5.9	2.9
5P	39.2	6.9	3.9
6P	44.1	7.8	4.9
7P	49.0	8.8	5.9
8P	53.9	9.8	6.9
9P	58.8	10.8	7.8
10P	63.7	11.8	7.8
11P	68.6	12.7	8.8
12P	73.5	13.7	9.8
13P	78.4	14.7	10.7